

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

TransAlta owns, operates and develops a diverse fleet of electrical power generation assets in Canada, the United States and Australia with a focus on long-term shareholder value. We provide municipalities, medium and large industries, businesses and utility customers clean, affordable, energy efficient, and reliable power. Today, we Canada's largest producer of wind power and Alberta's largest producer of hydro-electric power. We also have a mix of gas, coal and solar, making our base of power very diversified. Our coal transition is well underway. In early 2018, we shutdown two coal units and by 2022 we will convert six coal units to natural gas fired power generation. By 2025 our ambition is to be leading clean power company with only gas and renewable assets. For over 100 years, TransAlta has been a responsible operator and a proud community member where its employees work and live. TransAlta aligns several of its corporate goals with the [UN Sustainable Development Goals](#) and we have been recognized by CDP (formerly Climate Disclosure Project) as an industry leader on Climate Change Management. We are also proud to have achieved the [Silver level PAR \(Progressive Aboriginal Relations\)](#) designation by the Canadian Council for Aboriginal Business.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2017	December 31 2017	Yes	2 years
Row 2	January 1 2016	December 31 2016	<Not Applicable>	<Not Applicable>
Row 3	January 1 2015	December 31 2015	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Australia
 Canada
 United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

CAD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation

Other divisions

Coal mining

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Climate-related issues are material to our business, especially the impact from policy related decisions. Hence issues are addressed directly at our executive level with oversight from our Board, specifically from our Governance, Safety and Sustainability Committee of the Board. One of our major strategic goals is to reduce carbon emissions and our ambition is to be Canada's leading clean power company by 2025. Hence and furthermore, executive and Board engagement, management and oversight is crucial to this transition.

C1.1b

(C1.1b) Provide further details on the board’s oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	Our Governance, Safety and Sustainability Committee has oversight of climate change related issues as is noted in the GSSC Charter. This committee meets on a quarterly basis. To reference the GSSC Charter on of the mandates is: "monitoring and assessing climate change risks and compliance with associated legislation and public reporting". Also in regards to Environment and Sustainability matters the GSSC shall: "at least annually, review guidelines and practices relating to environmental protection, including the mitigation of pollution and climate change; (b) consider whether the Corporation’s policies and practices relating to the environment are being effectively implemented, and discuss and advise regarding the development of policies and practices regarding climate change, greenhouse gas and other pollutants". There is cross-functionality across our Board and many of our projects, clean energy projects, are reviewed by other Committees of the Board. Hence, from an associated standpoint, climate change related capital expenditures, acquisitions, budgets etc. will also be reviewed at the Board level on a case by case basis. For example our conversion of cola plants to gas plants, a large undertaking, was reviewed and approved by our Board. Notably all of our Board members, minus one, have experience and expertise in the area of Climate Change. We have noted this in our skills matrix section of our 2018 Proxy Circular.

C1.2

(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

Climate change related risks are monitored through our company-wide risk management processes and actively managed. Climate change risks and opportunities are identified at the Board level, executive and management level, business unit level (coal, gas, wind and solar and hydro) and through our corporate function (government relations, regulatory, emissions trading, sustainability, commercial, customer relations, investor relations). The business unit and corporate function work closely together and flow risk and opportunities upwards to management, executive and the Board. In addition management and executive will require support from corporate functions and the business unit level to understand risk and opportunities they have identified. Risks and opportunities are reviewed by our management team quarterly and reported to our Governance, Safety and Sustainability Committee of the Board and Audit and Risk Committee of the Board.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

All employee annual incentive plans (annual bonus) are tied to company performance, which is now tied to execution of strategic goals. Strategic goals include reducing carbon emissions and becoming Canada's leading clean power company by 2025. Specific projects, which will reduce emissions significantly, include our conversion of our coal fleet to natural gas, our proposed Brazeau pumped hydro storage project and a number of renewable projects that we are exploring (several wind projects are shovel ready). We have recently announced two new wind projects in the U.S., which will improve annual free cash flow and fit with our strategic transformation to clean power. Annual incentives are tied to free cash flow (60%) and our strategic transformation (40%). Conversion of coal to gas, for example, is a fit with our strategic transformation as it will significantly reduce emissions, while mitigating carbon price costs. Carbon costs, which would impact our ability to generate our free cash flow, which are tied to incentives for all employees and also ultimately our ability to continue to create value for our shareholders.

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

All executive annual incentive plans (annual bonus) are tied to company performance, which is now tied to execution of strategic goals. Strategic goals include reducing carbon emissions and becoming Canada's leading clean power company by 2025. Specific projects, which will reduce emissions significantly, include our conversion of our coal fleet to natural gas, our proposed Brazeau pumped hydro storage project and a number of renewable projects that we are exploring (several wind projects are shovel ready). We have recently announced two new wind projects in the U.S., which will improve annual free cash flow and fit with our strategic transformation to clean power. Annual incentives are tied to free cash flow (60%) and our strategic transformation (40%). Conversion of coal to gas, for example, is a fit with our strategic transformation as it will significantly reduce emissions, while mitigating carbon price costs. Carbon costs, which would impact our ability to generate our free cash flow, which are tied to incentives for our executive and also ultimately our ability to continue to create value for our shareholders.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	3	
Medium-term	3	10	
Long-term	10	25	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	At every quarterly board meeting

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Climate-related risks at the company level are identified through corporate functions (i.e. sustainability, government relations, regulatory, emissions trading), monitoring, education (i.e. sustainability, GHG compliance, water-stress), training, active participation in working groups, active participation with stakeholders and more. On a regular basis, residual risk exposures are reported to key decision makers including the Board, senior management, and the Commodity Risk & Compliance Committee. Reporting to this committee includes analysis of new risks, monitoring of status to risk limits, review of events that can affect these risks, and discussion and review of the status of actions to minimize risks. This quarterly reporting provides for effective and timely risk management and oversight.

Climate-related risks at the asset level are identified through our Environmental Management systems, Asset Management function and systems, our energy and trading business, active monitoring, active participation/communication with stakeholders, liaison with our corporate function, active participation in working groups and more. On a regular basis, residual risk exposures are reported to key decision makers including the Board, senior management, and the Commodity Risk & Compliance Committee. Reporting to this committee includes analysis of new risks, monitoring of status to risk limits, review of events that can affect these risks, and discussion and review of the status of actions to minimize risks. This quarterly reporting provides for effective and timely risk management and oversight.

Our Commodity Risk & Compliance Committee conducts analysis of new risks (including size and scope), monitoring of status to risk limits, review of events that can affect these risks, and discussion and review of the status of actions to minimize risks. As noted risk exposures are also reported to key decision makers including the Board and senior management. Quarterly reporting provides for effective and timely risk management and oversight.

Risks do not occur in isolation and are considered in conjunction with each other. Our senior management and Board will determine the significance of a climate-related risk in relation to other risks and subsequently determine strategic direction. Our conversion of our coal fleet in Alberta to natural gas is an example of a significant climate-related risk, which we also saw through the lens of an opportunity. Risks related to continued operation of our Alberta coal fleet up to the point of Provincial or Federal closure dates included, and are not limited, increased compliance costs from carbon pricing, reputational risk, shareholder devaluation, increased electricity costs to consumers in Alberta, grid instability and slower adoption of renewable energy in Alberta.

We define a substantive financial risk as "volume risk". Volume risk relates to the variances from our expected production. For example, the financial performance of our Hydro, Wind, and Solar operations is partially dependent upon the availability of their input resources in a given year. 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 sensitivity of volumes to our net earnings is calculated using an availability or production factor. The availability factor of a power plant is the amount of time that it is able to produce electricity over a certain period, divided by the amount of the time in the period. A 1 per cent increase or decrease has an approximate impact on net earnings of (+/-) \$12 million. The analysis is based on business conditions and production volumes in 2017. 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.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Example: As we look to make investment decisions for Coal to Gas conversions in Alberta we are reliant on policy certainty for the future of the carbon tax and implementation of capacity market. Our coal to gas investments are 10 plus year investments, so we want to ensure we have a clear understanding of the risks and opportunities for these assets. Governments have been changing across the country in Canada recently, but we know that all political parties are focused on ensuring electricity is reliable and affordable for consumers and TransAlta has a major part to play in that to ensure the long-term viability of any market we operate in.
Emerging regulation	Relevant, sometimes included	Example: All markets are exposed to the introduction of carbon markets or the price increases within carbon markets. As noted in section 11 we have an internal shadow price, which we apply across our business. Price is dependent upon the jurisdiction in which we operate.
Technology	Relevant, always included	Example: Battery technology is an emerging risk to the large-scale power generation model, as in a distributed model could become more relevant with battery storage and automation. We are exploring use of small-scale battery storage at wind farms, have proposed large-scale pumped hydro storage at our Brazeau facility and we continue to market our ability to provide "behind the fence" or distributed cogeneration or combined heat and power from natural gas.
Legal	Relevant, always included	Example: We have increased our transparency on climate risks and opportunities over time through disclosure, i.e via CDP and through our alignment with the TCFD in our annual integrated report
Market	Relevant, always included	Example: All markets are exposed to the introduction of carbon markets or the price increases within carbon markets. As noted in section 11 we have an internal shadow price, which we apply across our business. Price is dependent upon the jurisdiction in which we operate.
Reputation	Relevant, sometimes included	Example: We have at times experienced negative reputational exposure due to our coal business. Our transition away from coal to a clean power company will help to mitigate this risk.
Acute physical	Relevant, always included	Example: Our new gas facility at South Hedland, Australia is built with climate adaption in mind. The facility will operate with a best in class emission intensity for the region, the facility uses less water than traditional gas plants as we use dry cooling towers as opposed to the normal wet cooling towers (wet cooling tower have heavy water consumption). The plant is designed to withstand a category 5 cyclone, which can frequent NW Western Australia. Category 5 is the highest cyclone rating. Floods, which can occur in the area, have been mitigated by construction above the normal flood levels.
Chronic physical	Relevant, always included	Example: as a Hydro operator we must be aware of variations in precipitation and temperature. As an example, our Hydro business has adapted in recent years to partner with the Alberta Government on water management in order to mitigate the risk of flooding.
Upstream	Relevant, sometimes included	Example: On all of our new renewable energy projects we seek to mitigate risk risk by only working with tier 1 suppliers.
Downstream	Relevant, sometimes included	Example: customer shift in preference to green has been a driver in our strategic shift to renewable energy power generation. As the largest hydro producer in Alberta and largest wind provider we can provide green solutions for customers and we are also well positioned to grow and provide low carbon solutions for customers.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

As noted above in C2.2b, on a regular basis (with each quarter) residual risk exposures are reported to key decision makers including the Board, senior management, and the Commodity Risk & Compliance Committee. Reporting to this committee includes analysis of new risks, monitoring of status to risk limits, review of events that can affect these risks, and discussion and review of the status of actions to minimize risks. This quarterly reporting provides for effective and timely risk management and oversight. Opportunities are also assessed within evaluation and on a separate tract, our investment committee reviews all climate related opportunities, i.e. investment in renewable energy. Having an overarching clean power strategy enforces and integrates discipline in regards to climate-related opportunities. Clean opportunities are generally climate-related opportunities, but all projects must meet our sustainability goals, standards and objectives.

Once again our coal to gas transition is an excellent example of how the process was applied. The risk of stranded capital from shutdowns and the impact to cash flow, employees, investors etc. was evaluated a number of different ways. Working cross collaboratively and with our sustainability objectives in mind (i.e. clean power transition), we were able to identify an opportunity to transition this infrastructure and extend its life, by way of conversion of coal facilities to natural gas. This is a fit for TransAlta, the Alberta government and electricity customers in Alberta as it helps ensure a reliable and affordable transition to lower-carbon grid in Alberta, which includes development of 5,000 MW of renewables in the province.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact driver

Policy and legal: Write-offs, asset impairment, and early retirement of existing assets due to policy changes

Company- specific description

Our conversion of our coal fleet in Alberta to natural gas is an example of a significant climate-related risk, which we also saw through the lens of an opportunity. The risk related to continued operation of our Alberta coal fleet up to the point of Provincial or Federal closure dates included, but is not limited to, increased compliance costs at our coal operations from carbon pricing.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

30

Explanation of financial impact

Carbon costs in the current \$30 carbon price environment, running coal, are approximately \$20/MWh. Carbon costs would rise to close to \$30/MWh in a \$50 carbon price scenario (by 2022), as per Canadian Federal guidance (number noted above in "Potential financial impact". Conversion of coal units to gas significantly reduces carbon costs/MWh. In the current \$30 carbon price environment carbon costs are approximately \$5/MWh and in \$50 carbon price environment carbon costs are approximately \$10/MWh.

Management method

As noted we have assessed continued operations of coal as an opportunity by way of converting useful and large-scale infrastructure to natural gas fired power generation facilities.

Cost of management

300

Comment

Cost of coal unit conversion is approximately \$50 million per coal unit. Our current plan is to convert 6 coal units to natural gas by 2022.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Changing customer behavior

Type of financial impact driver

Market: Reduced demand for goods and/or services due to shift in consumer preferences

Company- specific description

We recognize the shift in customer preference towards green or clean energy, while keeping in mind the need for reliable and affordable power.

Time horizon

Current

Likelihood

Very likely

Magnitude of impact

Medium-high

Potential financial impact

0

Explanation of financial impact

We have not evaluated financial impacts, but each time we lose customers we seek to replace customers. There is cost involved in sourcing and adding new customers.

Management method

Our strategic shift to clean energy, underway since 2000, supports increased clean energy available to provide customers. In 2017 we were the largest producer of hydro power in Alberta and largest producer of wind power in Canada. In early 2018 we launched new energy services for customers, which will help our customers reduce their carbon footprint. Our energy services include solar integration, energy efficiency audits, distributed generation and building automation. Our customer solutions team has partnered with best-in-class energy service providers to help businesses achieve their goals.

Cost of management

240

Comment

There is no cost to strategically shift our mentality, focus and vision to clean power and align with partners to reduce customer carbon footprints, other than internal costs (employee time). However, specific growth projects to ensure we have new clean

energy projects to provide for customers require capital, which will vary on a project by project basis. Recently we announced, through TransAlta Renewables, our arrangement to acquire two construction-ready projects in the Northeast United States. The wind development projects consist of: (i) a 90 MW project located in Pennsylvania which has a 15-year Power Purchase Agreement (“PPA”) and (ii) a 29 MW project located in New Hampshire with two 20-year PPAs. All three counterparties have S&P credit ratings of A+ or better. The acquisition aligns with TransAlta’s and TransAlta Renewables’ strategy of acquiring contracted renewable power generation assets that provide stable cash through long-term power purchase agreement

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

All of our facilities are exposed to the elements and the possibility of an extreme weather event. We continue to build in climate resilience and adaptation where applicable. Any interruption in business operations and our ability to run our plants will result in reduced revenue from decreased production.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium-high

Potential financial impact

12

Explanation of financial impact

As noted above, a 1 per cent increase or decrease in production (MWh) has an approximate impact on net earnings of (+/-) \$12 million. The analysis is based on business conditions and production volumes in 2017. 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.

Management method

Our new gas facility at South Hedland Power Station is a good example of our management method, which is built with adaptation in mind. The facility will operate with a low emission intensity for the region and the facility uses less water than traditional gas plants as we use dry cooling towers as opposed to the normal wet cooling towers (wet cooling tower have heavy water consumption). The plant is designed to withstand a category 5 cyclone, which can frequent the northwest region of Western Australia. Category 5 is the highest cyclone rating. Floods, which can occur in the area, have been mitigated by constructing the facility above the normal flood levels. We operate in fairly extreme regions, Canadian winters and Australia summers in the outback, hence we have experience with operating in extreme environments and are very adaptive to weather changes across our business (we can lend expertise and move it as required).

Cost of management

214

Comment

In 2017 we spent \$214 million related to sustaining and productivity capital to ensure our plants are operating and available to meet market demand and are ready for the elements. This total includes routine capital, planned major maintenance and productivity capital (projects to improve power production efficiency and corporate improvement initiatives).

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact driver

Returns on investment in low-emission technology

Company- specific description

We recently announced through TransAlta Renewables our arrangement to acquire two construction-ready projects in the Northeast United States. The wind development projects consist of: (i) a 90 MW project located in Pennsylvania which has a 15-year Power Purchase Agreement ("PPA") and (ii) a 29 MW project located in New Hampshire with two 20-year PPAs. All three counterparties have S&P credit ratings of A+ or better.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Potential financial impact

0

Explanation of financial impact

Until all the closing conditions of the acquisition are met financial impacts cannot be communicated externally. This acquisition aligns with TransAlta's and TransAlta Renewables' strategy of acquiring contracted renewable power generation assets that provide stable cash flow through long-term power purchase agreements with creditworthy counterparties. It also delivers growth that creates long-term shareholder value.

Strategy to realize opportunity

The acquisition of the projects is subject to a number of closing conditions, including customary regulatory approvals and, in the case of the New Hampshire project, the receipt of a favourable regulatory determination in relation to the permitting of the project.

Cost to realize opportunity

240

Comment

Total cost of the two projects is estimated to be US\$240 million, of which approximately 70% will be funded in 2018 and the remainder in 2019.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Type of financial impact driver

Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company- specific description

Our conversion of our coal plants to natural gas in Alberta is a more efficient use of the plants from both an economic and environmental standpoint.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Potential financial impact

15

Explanation of financial impact

Savings of \$15/MWh in a \$30 carbon price environment and savings of \$20/MWh in a \$50 carbon price environment are anticipated. Conversion of coal units to gas significantly reduces carbon costs/MWh. In the current \$30 carbon price environment carbon costs will be approximately \$5/MWh and in \$50 carbon price environment carbon costs are approximately \$10/MWh. Carbon costs in the current \$30 carbon price environment, running coal, are approximately \$20/MWh. Carbon costs would rise to close to \$30/MWh in a \$50 carbon price scenario (by 2022).

Strategy to realize opportunity

TransAlta intends to file amendment applications with the Alberta Utilities Commission and Alberta Environment and Parks in the summer of 2018. Once submitted, there will be a period of regulatory review of the project which includes public notification. If the applications are approved, TransAlta could begin preparatory installation work in 2019. The proposed conversions would be staged over a two to three-year period, starting as early as 2020 and ending in 2022.

Cost to realize opportunity

300

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company- specific description

In early 2018 we launched new energy services for customers, which will help our customers reduce their carbon footprint. Our energy services include solar integration, energy efficiency audits, distributed generation and building automation. Our customer solutions team has partnered with best-in-class energy service providers to help businesses achieve their goals.

Time horizon

Current

Likelihood

More likely than not

Magnitude of impact

Medium-high

Potential financial impact

0

Explanation of financial impact

We have no valuation on this currently, but many indicators are showing us that customers are shifting to greener and cleaner electricity to reduce their own carbon footprint and meet their sustainability objectives, i.e. RE100 etc. We measure retention and we believe that offering this type of service for customer helps in this area.

Strategy to realize opportunity

Continue to seek best-in-class energy service providers to partner with to help our customers lower their carbon footprint.

Cost to realize opportunity

0

Comment

We have not valued this publicly, but we will lose revenue from decreased electricity use. We believe there are other benefits, which are employee retention and competitive advantage from offering many and flexible solutions for our customers.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	As noted above we have shifted our focus to proving low carbon solutions for customers, through green energy as an example (renewable energy). In early 2018 we launched new energy services for customers, which will help our customers reduce their carbon footprint. Our energy services include solar integration, energy efficiency audits, distributed generation and building automation. Our customer solutions team has partnered with best-in-class energy service providers to help businesses achieve their goals. We believe the magnitude of our actions will be increased competitive advantage and employee retention.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	We have identified supply chain and value chain risks and opportunities. For example, to mitigate risk, for all new renewable energy projects we seek to work tier 1 suppliers and partners that are creditworthy. Our ability to provided behind the fence or distributed power for customers has benefited us with a new partnership with Bit City. We recently have agreed upon a five-year PPA that includes a further five-year extension with an industry-competitive behind-the-fence fixed power rate. The power purchase agreement immediately provides BitCity with up to 22 MW of power, scaling to 35 MW in Phase Two, with potential for additional power in the future. Lease agreements for existing building space and land for mobile mining are being finalized between the two parties. The magnitude is increased revenues for TransAlta and decreased power for our customer. We are pleased to welcome BitCity, a leader in the blockchain data processing and cryptocurrency mining environment, to our Sarnia, Ontario cogeneration location. Building on our expertise in cogeneration and the scale of our operations in Sarnia, this agreement represents a new opportunity for TransAlta in the financial technology space.
Adaptation and mitigation activities	Impacted	Our new gas facility at South Hedland Power Station was built with climate adaptation in mind. The facility will operate with a best-in-class emission intensity for the region, and the facility uses less water than traditional gas plants as we use dry cooling towers as opposed to the normal wet cooling towers (wet cooling tower have heavy water consumption). The plant is designed to withstand a category 5 cyclone, which can frequent the northwest region of Western Australia. Category 5 is the highest cyclone rating. Floods, which can occur in the area, have been mitigated by constructing the facility above the normal flood levels. These additions, from a magnitude perspective, added time and cost to construction.
Investment in R&D	Impacted	Our Brazeau Hydro Pumped Storage project in Alberta is an innovative way to generate and shape clean electricity. It will store water that can be used to both generate power when it is needed and store excess power supply when demand is low. When there is excess renewable generation in periods of low demand, water will be pumped from the lower reservoir and stored in the upper reservoir to be used later. When demand is high and generation from other renewables generation is not sufficient, water will flow back through a turbine using gravity to generate clean electricity. The Brazeau Hydro Pumped Storage project is a focus for us, as it has existing infrastructure that reduces the cost and environmental footprint of the project, is situated close to existing transmission infrastructure, and allows for increased renewables development by balancing intermittent generation from wind and solar. We are currently working to secure a path that will advance our investment in the project and secure a long-term contract for the project. The Brazeau Hydro Pumped Storage project is expected to have new capacity ranging between 600 MW to 900 MW, bringing the total Brazeau facility to 955 to 1,255 MW, post-completion. We estimate an investment in the range of \$1.8 billion to \$2.5 billion and expect construction to begin upon receipt of a long-term contract and regulatory approvals, between 2020 and 2021, with operations to commence in 2025. In 2017, we invested approximately \$6 million to advance the environmental study, work with stakeholders and execute geotechnical work to help further our design and construction phase.
Operations	Impacted	Carbon prices in Alberta have increased operating costs significantly. In a \$30 carbon price scenario (current) operating costs are \$20 MWh, a significant increase to operating costs. Conversion to natural gas will reduce the complexity of operations and lead to fixed OM&A and sustaining capital costs reductions of approximately 15 per cent.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Reduced revenue from coal closures in Alberta and increased carbon costs. Carbon costs from coal in Alberta in \$30 carbon price scenario (current) are \$20 MWh, which significantly increases operating costs and reduces revenue.
Operating costs	Impacted	Carbon prices in Alberta have increased operating costs significantly. In a \$30 carbon price scenario (current) operating costs are \$20 MWh, a significant increase to operating costs. Conversion to natural gas will reduce the complexity of operations and lead to fixed OM&A and sustaining capital costs reductions of approximately 15 per cent.
Capital expenditures / capital allocation	Impacted	Our clean power strategy and goal to shift to low-carbon solutions means allocation of capital will go to projects that reduce environmental impact. We will allocated \$300 million for conversion of coal plants to gas and we continue to target renewable investments. For example we recently announced, through TransAlta Renewables, our arrangement to acquire two construction-ready projects in the Northeast United States. The wind development projects consist of: (i) a 90 MW project located in Pennsylvania which has a 15-year Power Purchase Agreement ("PPA") and (ii) a 29 MW projected located in New Hampshire with two 20-year PPAs. All three counterparties have S&P credit ratings of A+ or better. We are yet disclose publicly the financial impact, but the acquisition aligns with TransAlta's and TransAlta Renewables' strategy of acquiring contracted renewable power generation assets that provide stable cash flow through long-term power purchase agreements with creditworthy counterparties. It also delivers growth that creates long-term shareholder value.
Acquisitions and divestments	Impacted	We have aligned our strategy with growth in clean power. Hence assets that do not fit we will require solutions for. For example, the conversion of our coal assets to gas currently fits within our strategy as it significantly reduces environmental impact and cost impact, while ensuring reliability and affordability for electricity consumers in Alberta. On the flip side, we continue to seek acquisitions that fir our strategy, for example we recently announced, through TransAlta Renewables, our arrangement to acquire two construction-ready projects in the Northeast United States. The wind development projects consist of: (i) a 90 MW project located in Pennsylvania which has a 15-year Power Purchase Agreement ("PPA") and (ii) a 29 MW projected located in New Hampshire with two 20-year PPAs. All three counterparties have S&P credit ratings of A+ or better. We are yet disclose publicly the financial impact, but the acquisition aligns with TransAlta's and TransAlta Renewables' strategy of acquiring contracted renewable power generation assets that provide stable cash flow through long-term power purchase agreements with creditworthy counterparties. It also delivers growth that creates long-term shareholder value.
Access to capital	Impacted	We are aware that credit rating agencies are considering sustainability impacts within their ratings. Our strategy has been to reduce debt, to move off coal and target clean power investments/acquisitions/developments. Hence our financial planning process is now aligned with also achieving reductions in GHG, which is reflected by our target to 2030 to reduce 19.7 million tonnes.
Assets	Impacted	Mandated coal closures in Alberta leave significant infrastructure impacted and "stranded". The magnitude of impact is revenue loss to TransAlta in the future. However this is being mitigated through our coal to gas conversions, which reduce the economic and environmental impact and extends the life of our coal assets in Alberta.
Liabilities	Not impacted	We continue to meet our financial obligations and liabilities. We significantly reduced liabilities in 2017 by reducing net debt by approximately \$500 million .
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)
Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

i. Business objectives and strategy: Our business strategy focuses on remaining a financially viable low cost, reliable, firm and clean producer of electricity to the communities we serve. Our ambition or vision is to be the leading clean power company in Canada by 2025. Climate-related issues have led to increased growth and integration of renewable energy and our shift to clean and low-carbon energy solutions. Aligned with our business strategy is our climate change strategy, which is implemented & managed on a corporate-wide business unit level, consisting of four main areas of focus (no particular order): 1) Energy efficiency improvements; 2) Development of emissions offsets portfolios to achieve emissions reductions at competitive costs; 3) Development of clean combustion technologies; 4) Growth of our renewable energy portfolio as an increasing component of our total generation portfolio.

ii. Business strategy and emission reductions target: Our goal to reduce emissions is embedded within our strategy, which is reflected and supported by our 2030 target to reduce annual emissions of 19.7 million tonnes of CO₂e over our 2015 baseline. This target is aligned with science based targets: Sectoral Decarbonization Approach and prevention of 2 degrees of global warming.

iii. Most substantial business decisions of 2017:

- continued work on acceleration of coal phase-out and conversion of the majority of Alberta coal facilities to natural gas
- continued work on hydro expansion, specifically 600-900 MW of pumped hydro, at our Brazeau facility in Alberta
- negotiation of full credit for our renewable assets under the carbon credit regime in Alberta. As a result, over time, our wind and hydro power assets in Alberta will deliver \$30 million to \$50 million in value annually
- completion of a combined cycle high efficiency natural gas facility in northern Western Australia, which is built with a focus on climate adaption to mitigate physical risks from climate change (lower water usage, built above flood plain, built to withstand a category 5 cyclone). The facility helps meet demand in this region and reducing the grid emissions intensity profile

iv. Related to climate change, regulatory risk/compliance (coal electricity generation), physical risks (hydro and drought/floods) and monetary opportunities (gas and renewable electricity generation) are the main influence of integration into business strategy.

Other significant aspects that have influenced strategy:

- Federal & state command/control & market-based regulatory frameworks, such as Alberta Specified Gas Emitters Regulation (SGER), Cdn Federal GHG reduction targets & fixed emissions caps for air pollutants, as well as more stringent performance standards for new and old coal facilities in the US.
- Offsets incentives: TA, through the SGER creates ~500,000 tonnes of emissions credits/year from our wind fleet. Also through SGER compliance obligations, TA contributes nearly 2 MT of purchased fund credits to Alberta projects focused on emissions reductions technology.
- Development of green business: a strong renewables portfolio will position us ahead of competitors when considering risk related to carbon regulations and caps, and the uncertainty of the price of carbon and its impact on coal-fired facilities (highlighted by our +1,050 MW wind capacity).
- Reputation management: transparency becomes paramount for public/customers/stakeholder/shareholder/investors, as sustainability & emissions reductions are of interest to investor groups. Modes of reputation management such as the CDP & Integrated Report are completed by the sustainability team.

v. Key aspects of TA's short-term strategy (2018): explore growth opportunities in renewable energy and natural gas, which fits with our low-carbon strategy. Our latest investor presentation identifies 10,000 MW of identified potential opportunities for growth. Early retirement of one unit and mothballing of another at our Sundance coal facility, driven by climate change regulation and low power

prices. Planning for conversion of the majority of our coal facilities to gas in Alberta - accelerate emission reductions from our coal phase out and continue to support the Alberta transition to 30 per cent renewable energy. Retirement or conversion of 50% of our Centralia coal plant by 2020 end, driven by climate related policy.

vi. Long-term strategy (2019+): We will convert the majority of our coal units in Alberta by 2022 to natural gas, accelerating emission reductions. Hence by 2025, our business will be completely off coal power generation. We will continue to grow our renewable and gas fleet annually through brownfield and greenfield opportunities, while working to advance projects that have been announced as potential development or in-development projects.

vii. Operating Canada's largest wind fleet and growing our renewable energy fleet gives us a competitive edge in terms of not just clean generation supply, but also the ability to leverage a renewables-heavy brand, highlighted by the launch of TA Renewables in 2013. TA has 100 years of experience, & our longevity translates into our ability to plan a strategic, long-term sustainability framework. Moving forward, we will utilize our renewable energy portfolio as a hedge against future regulatory uncertainty. Over time, TA will incur less & less of a financial burden from GHG emissions. We recognize that renewable & clean energy is a responsible & viable business decision.

viii. The Paris Agreement has had direct impacts on our business, but the Paris Agreement has not been the only driven. Our customer base is increasingly seeking cleaner or greener power, perhaps indirectly driven by the Paris Agreement and following trickle effects, but also to meet their own sustainability goals and reduce cost. We are well positioned to provide clean or green power as a large producer of renewable energy. We also aligned our baseline for CO2e emissions reductions with 2015, as per Paris Agreement and UN Sustainable Development Goals developments.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
Other, please specify (Sectoral Decarbonization Approach)	The science based target sectoral decarbonization approach has informed the climate resiliency of our goal to reduce emissions by 2030 (in respect to prevention of 2 degrees of global warming). Our goal is to reduce 19.7 million tonnes of CO2e by 2030, over a 2015 baseline (in line with Paris Agreement). The year 2030 is aligned with the ambition of Climate Action as per UN SDG goal 13. This scenario and associated target encompasses company-wide scope 1 and scope 2 emissions, as per an operational control boundary as per the GHG Protocol Corporate Accounting and Reporting Standard. Our 2015 baseline is 32,227,815 tonnes CO2e (company-wide operational control scope 1 and 2 emissions). Hence, we anticipate in 2030 annual CO2e scope 1 and scope 2 emissions to be approximately 12,340,298 tonnes CO2e (19.7 million tonne reduction), a 62 per cent reduction over 2015. This scenario, supported by our target, holds our business accountable to reduce GHG emissions across our existing fleet, while advancing low-carbon growth opportunities. Essentially it proves us a carbon budget. The phase-out and conversion of the majority of our coal fleet to gas supports achieving this target. We anticipate annual emission reductions from coal to gas conversions to be approximately 50 per cent by 2022.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e)
Disclose details of your organization's low-carbon transition plan.

Reduce GHG emissions and grow clean and low-carbon power generation: By 2025 we will deliver 100 per cent clean power and be the energy provider of choice. To achieve this, we are accelerating the conversion of our coal plants to natural gas, strengthening our balance sheet and advancing our growth projects. We will combine natural gas with renewable power to deliver the reliability the market demands.

Emissions reduction target: We have set ourselves a goal to reduce 19.7 million tonnes of CO₂e by 2030, which is aligned with science based target setting, specifically the sectoral decarbonization approach.

Customers: In early 2018 we launched new energy services for customers, which will help our customers reduce their carbon footprint. Our energy services include solar integration, energy efficiency audits, distributed generation and building automation. Our customer solutions team has partnered with best-in-class energy service providers to help businesses achieve their goals

Community investment:

In 2015, we announced a US\$55 million community investment over 10 years to support energy efficiency, economic and community development, and education and retraining initiatives in Washington State. The US\$55 million community investment is part of the TransAlta Energy Transition Bill, passed in 2011. This bill was a historic agreement between policymakers, environmentalists, labour leaders, and TransAlta to transition away from coal in Washington State, closing the Centralia facility's two units, one in 2020 and the other in 2025.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

% reduction from base year

22

Base year

2015

Start year

2015

Base year emissions covered by target (metric tons CO₂e)

32227815

Target year

2021

Is this a science-based target?

No, but we are reporting another target that is science-based

% achieved (emissions)

33

Target status

Underway

Please explain

Target is on track

Target reference number

Abs 2

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

% reduction from base year

61

Base year

2015

Start year

2015

Base year emissions covered by target (metric tons CO2e)

32227815

Target year

2030

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% achieved (emissions)

12

Target status

Underway

Please explain

Abs2 is aligned with Goal 13, Climate Action: UN Sustainable Development Goals. Abs2 is also aligned with science based target setting, specifically using the sectoral decarbonization approach - we completed unofficial validation of this target with SBTi.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Energy productivity

KPI – Metric numerator

2700 MW of coal capacity

KPI – Metric denominator (intensity targets only)

Base year

2017

Start year

2017

Target year

2022

KPI in baseline year

0

KPI in target year

2700

% achieved in reporting year

0

Target Status

New

Please explain

We are planning to convert 2700 MW of coal power generation capacity to natural power generation capacity by 2022.

Part of emissions target

This is a natural fit with GHG target to 2030 and reduction of 19.7 million tonnes.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	7	3653003
To be implemented*	3	8645390
Implementation commenced*	1	14809
Implemented*	2	180007
Not to be implemented	1	2199636

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Activity type

Process emissions reductions

Description of activity

Changes in operations

Estimated annual CO2e savings (metric tonnes CO2e)

169743

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

25

Investment required (unit currency – as specified in CC0.4)

0

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

We switched operations of our Windsor, Ontario gas plant to a natural gas peaking plant as per negotiated terms of a 15 year contract with IESO. Under this new contract, the Windsor plant is dispatchable for up to 72 MW of capacity. Peaking power plant operations significantly reduces annual emissions, while maintaining contracted and reliable cash flow for TransAlta.

Activity type

Low-carbon energy installation

Description of activity

Natural Gas

Estimated annual CO2e savings (metric tonnes CO2e)

10263

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

570

Payback period

4 - 10 years

Estimated lifetime of the initiative

21-30 years

Comment

We completed construction of South Hedland in 2017. This is a new facility, hence there are no monetary savings per year.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Internal price on carbon	\$30 to \$50 carbon price and MWh costs

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Product

Description of product/Group of products

Low-carbon or green electricity

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (EcoLogo)

% revenue from low carbon product(s) in the reporting year

18

Comment

There is a strict qualification process and retirement / audit process to ensure EcoLogo RECs are not double sold.

C-EU4.6

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your electricity generation activities.

Our clean power strategy supports our GHG reductions and specifically methane or CH₄ emissions. Operation of renewable energy facilities has limited and fairly negligible associated emissions. Our Alberta coal to gas conversion will reduce GHG emissions from these facilities by close to 60 per cent. Although methane emissions may increase or hold steady at these facilities, the benefit of reduced CO₂ is substantial. Conversion of our Windsor and Ottawa plants in Ontario to peaking power plant facilities is a good example of TransAlta reducing methane emissions. Methane emission reductions at Windsor in 2017 were approximately 280 tonnes CO₂e equivalent.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

32041425

Comment

Scope 2 (location-based)

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

186390

Comment

Scope 2 (market-based)

Base year start

January 1 2015

Base year end

January 1 2015

Base year emissions (metric tons CO2e)

0

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

Australia - National Greenhouse and Energy Reporting Act

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

Other, please specify (Government of Alberta, SGER & ON. 143/16)

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

Our corporate-wide GHG inventory and calculation of scope 1 and 2 emission is guided by the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. Calculations and reporting are carried out using an Operational Control boundary. At our business unit or operations level calculation of emissions defaults to carbon standards or protocols (and associated methodologies) if these are in place and aligned with the operational control boundary. All protocols or regulations have historically aligned with operational control boundaries, but in 2017 Ontario changed reporting boundaries for our Sarnia, Ontario gas facility. For this facility we calculate emissions as per O. Reg 143/16 for regulatory purposes, but continue to calculate corporate emissions on an Operational Control boundary guided by the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. Other gas facilities in Ontario are in line with Operational Control, but calculations are guided by O. Reg. 143/16. In Alberta, in 2017, emission calculations for our coal facilities and one gas facility were guided the Specified Gas Emitters Regulation (SGER), now the Carbon Competitiveness Incentive Regulation (CCIR) for 2018. Our gas facilities emissions in Australia are calculated in accordance with NGER. Our coal facility emissions in Washington State are calculated in line with the EPA Greenhouse Gas Reporting Program (GHGRP) or eGGRT. Emissions in Alberta and Ontario, under both SGER and O. Reg 143/16 are verified to reasonable assurance as per regulation. in addition our entire corporate inventory is verified to a level of limited assurance.

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

29736975

End-year of reporting period

<Not Applicable>

Comment

This is a 2 per cent reduction over 2016 gross global scope 1 emissions.

Row 2

Gross global Scope 1 emissions (metric tons CO2e)

30466828

End-year of reporting period

2016

Comment

Our 2016 gross global scope 1 emissions data was revised in 2017, due to changes in our 2016 diesel combustion at our Centralia facility and 2016 natural gas combustion and diesel combustion at our Sarnia facility. Our 2016 energy data was revised in 2017, due to changes in our 2016 diesel combustion at our Centralia facility and 2016 natural gas combustion and diesel combustion at our Sarnia facility. Centralia 2016 diesel combustion was misreported in 2016. Sarnia 2016 energy data was misreported due to IT system-related errors. Sarnia 2016 vehicle diesel usage was applied incorrectly. Diesel usage was for a diesel backup generator and volumes were applied to diesel combustion and not diesel consumption from vehicles

Row 3

Gross global Scope 1 emissions (metric tons CO2e)

32041425

End-year of reporting period

2015

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Row 1

Scope 2, location-based

188628

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

<Not Applicable>

Comment

Row 2

Scope 2, location-based

253313

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

2016

Comment

Row 3

Scope 2, location-based

186390

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

2015

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

672318

Emissions calculation methodology

GHG Protocol Quantis Scope 3 Evaluator

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Our accounting group provides our annual spend analysis annually for sustainability to further categorize and add to the Quantis Scope 3 Evaluator. Our evaluation of supply chain spend was much more detailed in 2017, which resulted in 1. higher goods and services emissions; 2. lower capital goods emissions; 3. increased overall emissions from our supply chain spend compared with 2017 (638,040 tonnes CO2e in 2016 versus 717,060 tonnes CO2e in 2017), but \$ spend evaluated was approximately \$1.2 billion in 2017 versus \$700k in 2016.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

44742

Emissions calculation methodology

Our accounting group provides our annual spend analysis annually for sustainability to further categorize and add to the Quantis Scope 3 Evaluator. Our evaluation of supply chain spend was much more detailed in 2017, which resulted in 1. higher goods and services emissions; 2. lower capital goods emissions; 3. increased overall emissions from our supply chain spend compared with 2017 (638,040 tonnes CO2e in 2016 versus 717,060 tonnes CO2e in 2017), but \$ spend evaluated was approximately \$1.2 billion in 2017 versus \$700k in 2016.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Capital expenditures are split out from annual spend data and to the GHG Protocol and Quantis Scope 3 calculator.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

305741

Emissions calculation methodology

Used Alberta Environment emissions factors for extraction and production of gasoline, diesel, natural gas, propane and kerosene. Applied emission intensity (mining emissions/coal combustion) from our own coal mine in Alberta to derive coal extraction emissions for our US coal operations.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

TransAlta purchases natural gas for its gas power generation facilities. Gas extraction and production is included in this calculation. Emissions from coal extraction in AB are accounted for in scope 1, as we operate the mine adjacent to our coal facilities. The extraction of coal combustion at our Centralia plant is also included in this calculation as we rely on coal deliveries at this plant. This calculation also includes diesel extraction and production. Diesel is occasionally used for combustion in our plants. We also use diesel, gasoline for transportation requirements and propane and kerosene for heating. These have also been included.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

106526

Emissions calculation methodology

Diesel usage from locomotives (delivering coal) multiplied by mobile combustion source diesel rail emission factors (taken from Environment Canada National Inventory Report – EPA emission factors not clear)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Coal is transported in diesel locomotive freight trains from Montana and Wyoming to our Centralia coal power plant in Washington. CO2e is calculated using a calculator: <http://www.railcan.ca/environment/calculator> per trip. We track the distance, number of train cars and weight in order to help determine CO2e. Different weights are applied for the return journey, empty cars, hence the weight of the car only. Natural gas is distributed in pipelines. We have tie-in points at all of our operations. Some fugitive emissions are associated with natural gas transportation. We consider these to be negligible. Emissions from extraction and production of natural gas are calculated in 'Fuel and energy related activities'

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2726

Emissions calculation methodology

GHG Protocol Quantis Scope 3 Evaluator

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

As part of our annual sustainability reporting we track all environmental expenditures, including waste management expenditures. The total was applied in the Scope 3 evaluator to derive at an estimate of our waste emissions

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

767

Emissions calculation methodology

Travel provider methodology. Sourced from GRASP Reporting. 17. GREEN PORTFOLIO FRAMEWORK ADDITIONAL RESOURCES - GHG FACTORS Common GHG conversion factors for determining GHG emissions performance based on energy use and travel. Air travel - Short haul (under 281 miles): 0.2897 kg CO2/passenger mile Medium haul (281-994 miles): 0.2028 kg CO2/passenger mile Long haul (over 994 miles): 0.1770 kg CO2/passenger mile

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

Travel provider provided this data and in addition we conservatively double this figure to account for internally booked flights (outside of our travel provider)

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2975

Emissions calculation methodology

GHG Protocol Quantis Scope 3 Evaluator

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

GHG Protocol Quantis Scope 3 tool takes total employee numbers and applies a methodology. Company size 1000-2500 employees.

Upstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO2e

0

Emissions calculation methodology

TransAlta accounts for emissions from leased assets in its scope 2 emissions, hence this calculation is 0.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

See comment above.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

795

Emissions calculation methodology

Downstream electricity use, after generation, is transmission and distribution (T&D) of electricity. There are typical losses from T&D. Given our small share of overall power generation these emissions are relatively small. As an example line losses in Alberta for 2018 are anticipated to be 3.61% (as per guidance from the Alberta Electricity System Operator). Hence, multiplying line losses by our overall generation (conservative as we also provide at the source power for customers) is $34,419,600 \text{ MWh} \times 0.0000361 = 1,242 \text{ MWh}$ of electricity lost. Emissions, using a grid average of approximately 0.64, would be 795 tonnes. Again, this is a conservative estimate as a significant amount of our electricity is used close to its source.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Electricity is not processed, hence this is not relevant and the calculation is 0.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Our customers, which includes industrial, commercial and residential (indirectly) use our product (electricity). We encourage the use of smarter energy. In early 2018 we launched new energy services for customers, which will help our customers reduce their carbon footprint. Our energy services include solar integration, energy efficiency audits, distributed generation and building automation. Our customer solutions team has partnered with best-in-class energy service providers to help businesses achieve their goals.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

There is no end of life treatment required for our primary product, which is electricity. As per the laws of thermodynamics, energy changes form or is transferred, i.e. electricity powers a light bulb and the energy changes form to radiant energy (light).

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

TransAlta does not lease any assets downstream of its business, hence this calculation is 0.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

N/A

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

TransAlta has no franchises, hence this calculation is 0.

Investments

Evaluation status

Relevant, calculated

Metric tonnes CO2e

5460580

Emissions calculation methodology

Specified Gas Emitters Regulation methodology (AB carbon markets), now Carbon Competitiveness Incentive Regulation (CCIR)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

84

Explanation

GHG emissions from sites that we have a financial or equity ownership percentage, but are not the operator.

Other (upstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Other (downstream)

Evaluation status

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.09

Metric numerator (Gross global combined Scope 1 and 2 emissions)

29925603

Metric denominator

Other, please specify (Free cash flow)

Metric denominator: Unit total

328000000

Scope 2 figure used

Location-based

% change from previous year

24

Direction of change

Decreased

Reason for change

We increased free cash flow from operations by \$71 million in 2017 over 2016, while also reducing scope 1 and scope 2 emissions. Emission reduction activities included: in 2017 our Mississauga gas plant was no longer operational and our Windsor plant transitioned to a peaking facility. In Australia, our diesel burn at Parkeston and Solomon Power Station significantly declined.

Intensity figure

0.87

Metric numerator (Gross global combined Scope 1 and 2 emissions)

29925603

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

34419600

Scope 2 figure used

Location-based

% change from previous year

3

Direction of change

Increased

Reason for change

Production (MWh) decreased in 2017 in greater capacity than emission reductions.

Intensity figure

0.013

Metric numerator (Gross global combined Scope 1 and 2 emissions)

29925603

Metric denominator

unit total revenue

Metric denominator: Unit total

2307000000

Scope 2 figure used

Location-based

% change from previous year

1

Direction of change

Increased

Reason for change

Revenue was down slightly in 2017, compared with 2016.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	29439075	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	107057	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	190843	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	0	IPCC Fourth Assessment Report (AR4 - 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	3077.96	0	76949	From mining activities. CH4 is multiplied by 25 to calculate CO2e.
Combustion (Electric utilities)	26847039	818.7	0	27036183	Coal combustion to generate electricity. CH4 is multiplied by 25 to calculate CO2e.
Combustion (Gas utilities)	2471818	379.5	0	2492730	Natural gas combustion to generate electricity. CH4 is multiplied by 25 to calculate CO2e.
Combustion (Other)	123721	6.12	0	131113	Vehicle emissions (both fleet and mining) and stationary combustion at the mine (propane, kerosene, gas combustion). CH4 is multiplied by 25 to calculate CO2e.
Emissions not elsewhere classified	0	0	0	0	All scope 1 emissions, totaling 29,736,975, reported above

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Australia	1066217
Canada	22663304
United States of America	6007454

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Coal power generation and Mining	27243080
Natural Gas power generation	2492905
Hydro power generation	478
Wind and solar power generation	511
Corporate	0

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility generation activities	29528913	<Not Applicable>	Minus coal mining activities
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Australia	80	0	96	0
Canada	147396	0	252439	0
United States of America	41152	0	58528	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Coal power generation and Mining	167951	0
Natural Gas power generation	283	0
Hydro power generation	10873	0
Wind and solar power generation	821	0
Corporate	8701	0

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption		<Not Applicable>		
Other emissions reduction activities	346800	Decreased	58	We reduced diesel burn at our Parkeston and Solomon facilities in 2017 (both in Western Australia). We also changed operation of our Windsor gas plant to a peaking power plant in 2017. Scope 1 and 2 emissions from Parkeston, Solomon and Windsor in 2016 were 596,460 and in 2017 emissions were 249,659. Hence, the reduction is equivalent to a 58 per cent decrease. Calculation: (249659/596460)-1=-0.58 or a reduction of 58%.
Divestment		<Not Applicable>		
Acquisitions	139182	Increased	100	Development of our South Hedland gas facility in Western Australia was completed in 2017 and operations commenced. Emissions from South Hedland were 0 in 2016 as these were reported outside our scope 1 and 2 boundary.
Mergers		<Not Applicable>		
Change in output	230572	Decreased	1	We reduced our AB coal emissions by approximately 1.64 million tonnes CO2e due to lower production volumes in 2017 (shifting to merchant versus long-term PPAs). This was offset by higher production and increased emissions of approximately 1.40 million tonnes CO2e from our Centralia coal plant (Washington, US), which experienced increased demand in 2017. Overall our coal fleet emissions decreased by approximately 230,500 tonnes CO2e. Total scope 1 and 2 emissions from coal were 27,668,84 in 2016 versus 27,411,031 in 2017. The reduction is equivalent to a 1 per cent decrease.
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions	351741	Decreased	100	We signed a new Contract, which provides TransAlta a fixed monthly payment until December 31, 2018, with no delivery obligations and maintains TransAlta's operational flexibility to pursue opportunities for the Facility to meet power market needs in the Northeast, including Ontario. Additionally, the New Contract provided an immediate reduction in the Greenhouse Gas emissions in Ontario, and will reduced power costs for Ontario ratepayers. 2016 Mississauga emissions were 352,017 tonnes CO2e and in 2017 emissions were 276 tonnes CO2e. The reduction is equivalent to a 100 per cent decrease (rounding).
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 60% but less than or equal to 65%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	137719700	137719700
Consumption of purchased or acquired electricity	<Not Applicable>	0	290083	290083
Consumption of purchased or acquired heat	<Not Applicable>	0	20981	20981
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	0	138030764	138030764

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Subbituminous Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

121760058

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

15422464

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

520494

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Propane Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1671

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Kerosene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

978

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Lubricants

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

7

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

14028

MWh fuel consumed for the self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Diesel

Emission factor

0.00266

Unit

metric tons CO2 per liter

Emission factor source

Canada's GHG Inventory 1990-2010 (Table A8-11: Emission Factors for Energy Mobile Combustion Sources) Actual emission factor: 0.002663000 tonnes / L (does not fit in box above)

Comment

The emission factor above is used for mobile diesel combustion across our Canadian operations. Diesel use at Highvale represents the majority of our diesel use, totaling 41,637,571 litres or 86% of our diesel combustion and Canadian mobile diesel use represents 87% of diesel combustion. In 2017 our diesel combustion totaled 48,429,859 litres.

Kerosene

Emission factor

0.00253

Unit

metric tons CO2 per liter

Emission factor source

Canada's GHG Inventory 1990-2010 (Table A8-4 Emission Factors for Refined Petroleum Products --> applicable to kerosene) Actual emission factor: 0.002534000 tonnes / L (does not fit in box above)

Comment

Lubricants

Emission factor

13.9

Unit

kg CO2e per GJ

Emission factor source

Fuel combustion - Stationary and Transport energy purposes (excluding power generation). NGER Determination - Schedule 1, Part 3

Comment

Motor Gasoline

Emission factor

0.00028

Unit

kg CO2 per liter

Emission factor source

Canada's GHG Inventory 1990-2010 (Table A8-11: Emission Factors for Energy Mobile Combustion Sources --> applicable to heavy duty vehicles and light duty trucks)

Comment

Actual emission factor: 0.000000283 tonnes / L. This will not fit in the emission factor box above.

Natural Gas

Emission factor

0.05151

Unit

metric tons CO2 per GJ

Emission factor source

Canada's GHG Inventory 1990-2011 (2013) Table A8-1 CO2 Emission Factors for Natural Gas --> assumes 99.5 combustion efficiency

Comment

We use a number of emission factors for natural gas. Emission factor use is dependent on geographic location, operations or regulations in place. For example at Alberta coal for stationary combustion of natural gas in boilers we use the following emission factor for CO2 tonnes/GJ: 0.050576750. Source: USEPA AP-42 Chapter 1.4 (TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION) In Canada at our natural gas power generation facilities for stationary combustion of natural gas in boilers we use the following emission factors, source noted above: Electric Utility Natural Gas Combustion - CO2: 0.05151759 tonnes CO2/GJ Electric Utility Natural Gas Combustion - CH4: 0.00001316 tonnes CH4/GJ Electric Utility Natural Gas Combustion - N2O: 0.00000132 tonnes N2O/GJ In Australia, as per NGER regulations, the emission factor for natural gas combustion in boilers is 51.53 kgCO2-e/GJ.

Propane Gas

Emission factor

0.0015

Unit

metric tons CO2 per liter

Emission factor source

Canada's GHG Inventory 1990-2011 (2013) Table A8-11: Emission Factors for Energy Mobile Combustion Sources--> Propane vehicles (i.e. - forklifts)

Comment

Across our operations propane is used for both space heating at remote locations and for operational vehicle use. Emission factors are similar for both uses for CO2, but there is some variance for CH4 and N2O. Stationary Combustion Source - SpaceHeater Propane - CO2: 0.00150700 tonnes/L Mobile Combustion Source - Propane (light&heavy duty) - CO2: 0.00150700 tonnes/L Stationary Combustion Source - SpaceHeater Propane - CH4: 0.000000024 tonnes L Mobile Combustion Source - Propane (light & heavy duty) - CH4: 0.00000064 tonnes/L Stationary Combustion Source - SpaceHeater Propane - N2O: 0.000000108 tonnes/L Mobile Combustion Source - Propane (light&heavy duty) - N2O: 0.00000003 tonnes/L

Subbituminous Coal

Emission factor

1.75

Unit

metric tons CO2 per toe

Emission factor source

This is an average of our emission factor from our Sundance coal operations in Alberta. Coal emission factors vary from location to location. For CO2 at our Alberta coal facilities we use laboratory tested results of the carbon content in our coal and ash, from three different labs, to average an emission factor for CO2. To calculate CO2 we use the assumed CO2 to C ratio of 3.66417 multiplied by the total carbon in coal minus any carbon in the ash. For CH4 and N2O we use USEPA guidance: USEPA AP 42, Chapter 1.1 (Table 1.1-19. EMISSION FACTORS FOR CH4, TNMOC, AND N2O FROM BITUMINOUS AND SUBBITUMINOUS COAL COMBUSTION). USEPA emission factors are also used for coal combustion at our Washington State coal facility.

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	38997119	0	5615747	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-EU8.2e

(C-EU8.2e) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Lignite

Nameplate capacity (MW)

4653

Gross electricity generation (GWh)

24870

Net electricity generation (GWh)

24870

Absolute scope 1 emissions (metric tons CO2e)

27243080

Scope 1 emissions intensity (metric tons CO2e per GWh)

1095.41

Comment

Nameplate capacity is owned capacity. Generation is reported using an operational control boundary, as per GHG reporting boundaries.

Oil

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Gas

Nameplate capacity (MW)

1348

Gross electricity generation (GWh)

3933.5

Net electricity generation (GWh)

3933.5

Absolute scope 1 emissions (metric tons CO2e)

2492905

Scope 1 emissions intensity (metric tons CO2e per GWh)

633.7

Comment

Nameplate capacity is owned capacity. Generation is reported using an operational control boundary, as per GHG reporting boundaries.

Biomass

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Nuclear

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Hydroelectric

Nameplate capacity (MW)

926

Gross electricity generation (GWh)

2021.05

Net electricity generation (GWh)

2021.05

Absolute scope 1 emissions (metric tons CO2e)

478

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.24

Comment

Nameplate capacity is owned capacity. Generation is reported using an operational control boundary, as per GHG reporting boundaries.

Wind

Nameplate capacity (MW)

1318

Gross electricity generation (GWh)

3569.57

Net electricity generation (GWh)

3569.57

Absolute scope 1 emissions (metric tons CO2e)

511

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.14

Comment

Nameplate capacity is owned capacity. Generation is reported using an operational control boundary, as per GHG reporting boundaries.

Solar

Nameplate capacity (MW)

21

Gross electricity generation (GWh)

25.12

Net electricity generation (GWh)

25.12

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Nameplate capacity is owned capacity. Generation is reported using an operational control boundary, as per GHG reporting boundaries.

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other non-renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Total

Nameplate capacity (MW)

8266

Gross electricity generation (GWh)

34419.6

Net electricity generation (GWh)

34419.6

Absolute scope 1 emissions (metric tons CO2e)

29736975

Scope 1 emissions intensity (metric tons CO2e per GWh)

863.95

Comment

Nameplate capacity is owned capacity. Generation is reported using an operational control boundary, as per GHG reporting boundaries.

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

Other, please specify (Renewable energy generation)

Low-carbon technology type

Solar PV

Wind

Hydropower

MWh consumed associated with low-carbon electricity, heat, steam or cooling

0

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

We did not provide a market-based scope 2 figure for question C6.3. However, we do generate renewable energy for customers, it is not consumed internally, and the emission factor for customers is 0.

C-EU8.4

(C-EU8.4) Does your electric utility organization have a global transmission and distribution business?

No

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Energy use

Metric value

496910707

Metric numerator

GJ

Metric denominator (intensity metric only)

% change from previous year

6

Direction of change

Decreased

Please explain

We reduced both our consumption of coal and gas in 2017.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Lignite	145	65	2018	Planned CAPEX to coal is an approximate. We anticipate a range between 130-160 million

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Other, please specify (Typically energy efficiency)	We have allocated 20-30 million in productivity capital across our fleet, which is typically allocated to optimize energy use. For example in 2017 Productivity capital was invested in the installation of inspection equipment to optimize heat rates on coal and improve air distribution systems. We define productivity capital as "Projects to improve power production efficiency and corporate improvement initiatives".	25000000	11	2018

C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date

January 1 2017

Investment end date

December 31 2019

Investment area

Equipment

Technology area

Renewable energy

Investment maturity

Large scale commercial deployment

Investment figure

41

Low-carbon investment percentage

100

Please explain

This investment is the expansion of our Kent Hills wind farm in New Brunswick, Canada. The additional 17.25 MW at Kent Hills is an expansion of our existing Kent Hills wind farms, increasing the total operating capacity of the Kent Hills wind farms to approximately 167 MW. We expect to begin the construction phase in the spring of 2018. During the second quarter, TransAlta Renewables entered into a long-term contract with the New Brunswick Power Corporation ("NB Power") for the sale of all power generated by an additional 17.25 MW of capacity from the Kent Hills wind project.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Sustainability_Performance_Table.pdf

Page/ section reference

206 and 207, after the performance table and notes. Also re Scope 1 and 2, please refer to Note 6: "Gross GHG emissions or gross carbon dioxide equivalent (CO2e) emissions is the sum of carbon dioxide, methane, nitrous oxide and sulfur hexafluoride. Coincidentally the sum of scope 1 and 2 emissions will equate to gross CO2e emissions or gross GHG emissions".

Relevant standard

ASAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Sustainability_Performance_Table.pdf

Page/ section reference

206 and 207, after the performance table and notes. Also re Scope 1 and 2, please refer to Note 6: "Gross GHG emissions or gross carbon dioxide equivalent (CO2e) emissions is the sum of carbon dioxide, methane, nitrous oxide and sulfur hexafluoride. Coincidentally the sum of scope 1 and 2 emissions will equate to gross CO2e emissions or gross GHG emissions".

Relevant standard

ASAE3000

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 1)	International Standard on Assurance Engagements 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information"	Part of annual assurance with E&Y
C6. Emissions data	Year on year change in emissions (Scope 2)	International Standard on Assurance Engagements 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information"	Part of annual assurance with E&Y
C6. Emissions data	Year on year emissions intensity figure	International Standard on Assurance Engagements 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information"	Part of annual assurance with E&Y
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	International Standard on Assurance Engagements 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information"	Part of annual assurance with E&Y
C6. Emissions data	Financial or other base year data points used to set a science-based target	International Standard on Assurance Engagements 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information"	Our base year emissions were verified by E&Y in 2015. Assurance in 2016 and 2017 also included 2015

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

- Alberta carbon tax
- Alberta SGER
- Ontario CaT

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

Alberta SGER

% of Scope 1 emissions covered by the ETS

73

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

0

Allowances purchased

0

Verified emissions in metric tons CO₂e

21747592

Details of ownership

Facilities we own and operate

Comment

Some of our scope 3 emissions, JVs, are also verified under AB SGER. Emissions are verified to a level of reasonable assurance under AB SGER.

Ontario CaT

% of Scope 1 emissions covered by the ETS

3

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

0

Allowances purchased

0

Verified emissions in metric tons CO₂e

1041791

Details of ownership

Facilities we own and operate

Comment

Emissions are verified to a level of reasonable assurance under Ontario CaT.

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

Alberta carbon tax

Period start date

January 1 2017

Period end date

December 31 2017

% of emissions covered by tax

1

Total cost of tax paid

0

Comment

We did not track a value in 2017. Alberta carbon tax prices are marginal as the majority of our associated carbon prices are built in to the Alberta Specified Gas Emitters Regulation, now the Carbon Competitiveness Incentive Regulation

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

TransAlta has employment positions dedicated to deal with all the carbon programs we have to comply with. The numerous individuals that compose that team work to make sure that we respect the prerequisite and compliance rules of each market and comment and participate in the implementation of new markets and/or new instruments. From the trader to the compliance analyst, to the emission engineer we make sure that the company has the knowledge to understand and thrive under these different carbon programs. Our recent contributions to policy design of new carbon regulations in Alberta helped secure opt in for origination of carbon offset credits from our hydro and a number of wind facilities in the province. Carbon offsets are valued at \$30/tonne in Alberta and we expect to generate \$30 to \$50 million in revenue from new offsets, significantly adding value to these renewable facilities and to shareholders.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit purchase

Project type

Forests

Project identification

Forestry project under California cap-and-trade

Verified to which standard

CAR (The Climate Action Reserve)

Number of credits (metric tonnes CO2e)

50000

Number of credits (metric tonnes CO2e): Risk adjusted volume

50000

Credits cancelled

No

Purpose, e.g. compliance

Other, please specify (Trading)

Credit origination or credit purchase

Credit purchase

Project type

Forests

Project identification

Forestry project under the California cap-and-trade (separate project to the credits purchased above)

Verified to which standard

CAR (The Climate Action Reserve)

Number of credits (metric tonnes CO2e)

25000

Number of credits (metric tonnes CO2e): Risk adjusted volume

25000

Credits cancelled

No

Purpose, e.g. compliance

Other, please specify (Trading)

Credit origination or credit purchase

Credit purchase

Project type

Methane avoidance

Project identification

Baker Mine AMM: CAMM5342-A

Verified to which standard

CAR (The Climate Action Reserve)

Number of credits (metric tonnes CO2e)

2000

Number of credits (metric tonnes CO2e): Risk adjusted volume

2000

Credits cancelled

No

Purpose, e.g. compliance

Other, please specify (Trading)

Credit origination or credit purchase

Credit origination

Project type

Wind

Project identification

We generate wind offsets under the Alberta SGER carbon program, now the Alberta Carbon Competitiveness Incentive regulation (CCIR) program. We are also a net buyer for our compliance to Alberta SGER, now the CCIR program

Verified to which standard

Other, please specify (Alberta SGER, now CCIR)

Number of credits (metric tonnes CO2e)

300000

Number of credits (metric tonnes CO2e): Risk adjusted volume

300000

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

C11.3**(C11.3) Does your organization use an internal price on carbon?**

Yes

C11.3a**(C11.3a) Provide details of how your organization uses an internal price on carbon.****Objective for implementing an internal carbon price**

Navigate GHG regulations

Stakeholder expectations

Drive low-carbon investment

Stress test investments

Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Scope 2

Application

TransAlta evaluates all internal business decisions specific to the jurisdictions in which we operate • Where a jurisdiction has a clear carbon regulatory framework in place, or a clearly stated policy plan, we use that as the planning tool, • In other jurisdictions where there is less clarity, we apply scenario analysis to an effective carbon price to guide decisions. • We currently pay \$30 a tonne for emissions over and above our baseline in Alberta as part of the SGER regulation. • In Alberta we model carbon price estimates at approximately \$30 a tonne for facilities where we have obligations to 2022 at which time we anticipate the carbon price rising to \$50 in line with Canadian federal guidance. • While we do produce offset credits from our wind facilities, we do not include full-price modeling in budget calculations as the primary driver for wind facilities is their electrical generation, not their offset generating potential.

Actual price(s) used (Currency /metric ton)

30

Variance of price(s) used

Approximately 70 per cent

Type of internal carbon price

Shadow price

Impact & implication

Our coal to gas transition in Alberta has influenced by carbon pricing. among other factors, which include electricity prices, industry trends towards cleaner power solutions, customer preference towards green and external market forces. Carbon costs in the current \$30 carbon price environment, running coal, are approximately \$20/MWh. Carbon costs would rise to close to \$30/MWh in a \$50 carbon price scenario, as per Canadian Federal guidance. Conversion of coal units to gas significantly reduces carbon costs/MWh. In the current \$30 carbon price environment carbon costs are approximately \$5/MWh and in \$50 carbon price environment carbon costs are approximately \$10/MWh.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our customers

Yes, other partners in the value chain

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Other – please provide information in column 5

Size of engagement

72

% Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

In early 2018 we launched new energy services for customers, which will help our customers reduce their carbon footprint. Our energy services include solar integration, energy efficiency audits, distributed generation and building automation. Our customer solutions team has partnered with best-in-class energy service providers to help businesses achieve their goals. This service covers our Alberta business, which on a generation basis, covers 72 per cent of our business. Our head office and majority of our business is currently in Alberta, hence this is a natural fit. There has also been recent developments through Energy Efficiency Alberta that encourages integration of energy efficiency.

Impact of engagement, including measures of success

This a relatively new program, but has been well received by our customers. Measure of success will be customer application of energy efficiency services, customer reduction of consumption on a kWh or MWh basis, and customer reduction in carbon footprint.

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

In 2015, we announced a US\$55 million community investment over 10 years to support energy efficiency, economic and community development, and education and retraining initiatives in Washington State. The US\$55 million community investment is part of the TransAlta Energy Transition Bill, passed in 2011. This bill was a historic agreement between policymakers, environmentalists, labour leaders, and TransAlta to transition away from coal in Washington State, closing the Centralia facility's two units, one in 2020 and the other in 2025.

In 2017, some highlights from grant investment included construction of an 86 kW solar project at the Tenino High School and construction of a 56 kW solar photovoltaic project for the library at Centralia College (both projects reducing power bills and CO2 emissions). Projects that promote a clean economy transition in Washington State will be ongoing until 2025.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Capacity market (electricity))	Support with minor exceptions	Directly engaged with policy-makers on redesign of Alberta electricity market. Encouraging design that supports industry, allows for integration and growth in renewable energy and protects consumer prices (does not cause price spikes)	"The government will work closely with the province's various electricity agencies, electricity generators, consumer groups, industry, and other stakeholders to implement a capacity market that will best serve Albertans. The new framework will be in place by 2021". https://www.alberta.ca/electricity-capacity-market.aspx
Cap and trade	Support	Directly engaged with policy-makers, industry, NGOs on new carbon market design for Alberta, which became effective Jan 1, 2018 as the Carbon Competitiveness Incentive Regulation	We supported consultation on redesign and advocated that design ensures competitiveness, growth and job creation in Alberta, while succeeding at reducing emissions. A large majority of our Alberta hydro facilities and wind farms were qualified to generate carbon offset credits as per the new market design, which will result in additional revenue for TransAlta at \$30/tonne CO ₂ e offset

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Independent Power Producers Society of Alberta

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

IPPSA offers a forum for Alberta's power producers to generate policy positions representing the interests of membership with government and stakeholders. IPPSA is a strong proponent of competitive market principles, allowing the market to determine the most appropriate types of energy generation. As Alberta shifts from coal to natural gas and renewable energy, IPPSA advises government on policy changes while representing the interests of its members.

How have you, or are you attempting to, influence the position?

We are aligned with IPPSA on our views for competitive market principles that lead to the appropriate type of electricity generation mix. At TransAlta we support smart carbon pricing policies that support competitiveness, while reducing carbon emissions.

Trade association

Canadian Electricity Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The CEA advocates for rational climate change policy with the Canadian federal government as it relates to the electricity sector.

How have you, or are you attempting to, influence the position?

We support this position.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our clean power strategy, responsible growth in gas and renewable energy, accompanied with an internal road map provided to all leaders within the company and employees helps ensure consistency and alignment with our strategy. As a result direct and indirect activities are expected to be aligned with our strategy, which is low-carbon power generation from gas and renewable energy. Leadership has oversight in conjunction with our board and we believe that in order to achieve this we need cross-functional buy-in. Deeper integration of sustainability, specifically via integrated reporting and our ongoing transformation process to a bottom up innovation employee driven company, has allowed for employees to not work in silos and helped them to think outside traditional boxes (i.e. through a triple bottom line lens). This shift will continue to take shape, but we believe these processes are already helping employees with consistency around messaging, strategy and management in line with our climate change strategy and clean power strategy. Employees are expected to represent this corporate position when engaging with policy makers or trade associations. As previously noted, we support smart carbon pricing that ensures competitiveness for the electricity sector, while reducing carbon emissions.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports in accordance with TCFD recommendations

Status

Complete

Attach the document

TAC2017_AnnualReport.pdf

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Dawn Farrell, CEO	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

Please confirm below

I have read and accept the applicable Terms