

C0. Introduction

C0.1

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

BTS Group Holdings PCL is a privately owned, multi-industry conglomerate that operates across 3 business platforms; MOVE, MIX and MATCH. Listed on the Stock Exchange of Thailand (SET), BTS Group is a constituent member of the SET50 'Blue Chip' index, MSCI Asia Pacific Index, FTSE4Good Index and Dow Jones Sustainability Index and among the largest companies in Thailand.

In FY 2022/23, majority of operating revenue came from the MOVE business (Operating and Maintenance (O&M) revenue of rail business including Green Line Core Network, Green Line's extensions to Silom Line, Sukhumvit Line, Southern and Northern Green Lines, and Gold Line Phase 1; fare box revenue from BRT; constru

ction revenue for Pink Line and Yellow Line) accounting for 68% of the total operating revenue. The rest are from MIX business (Rental and advertising service revenue on Sky Train, BTS stations, outdoor media, office buildings; revenue from digital services, Rabbit Rewards; and others) and MATCH business (Revenue from sales of real estate, rental and service; revenue from residential buildings and Thana City golf and sports club; revenue from restaurant business, construction services; and others) which accounted for 28.4% and 3.6% of the total operating revenue, respectively.

In terms of emissions-generating activities, our subsidiary, Bangkok Mass Transit System Public Company Limited (BTSC) which is the mass transit operator is the key consumer of electricity. Therefore, this is our key source of GHG emissions.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date

April 1 2022

End date

March 31 2023

Indicate if you are providing emissions data for past reporting years

Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for

4 years

Select the number of past reporting years you will be providing Scope 2 emissions data for

4 years

Select the number of past reporting years you will be providing Scope 3 emissions data for

1 year

C0.3

(C0.3) Select the countries/areas in which you operate.

Thailand

C0.4

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

THB

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 chosen approach for consolidating your GHG inventory.

Operational control

(C-TO0.7/C-TS0.7) For which transport modes will you be providing data?

Rail

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	TH0221B10Z05 (Local)
Yes, an ISIN code	TH0221B10Z13 (Foreign)
Yes, an ISIN code	TH0221010R10 (NVDR)

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) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Board Chair	<p>The Board Chair guides the Board's decisions and holds authority on the board of directors in relation to the formulation and implementation of sustainability strategies and practices and approval of BTS Group climate strategy and public policy position relating to climate change to ensure alignment with the Paris Agreement.</p> <p>The Board Chair oversee implementation and progress of climate strategy. Incorporate climate-related agendas and matters into corporate decision-making process and executive compensation at least twice per year in order to ensure that the Company has a clear oversight on climate-related issues and risks at the strategic level. The Board Chair ensures and responsible for sufficient resources are allocated for climate-related risk issues.</p>
Director on board	<p>The 3 Directors on board have responsibility for providing top-down oversight and supervision of climate-related issues and risks. They are responsible for approving BTS Group's Climate Strategy as well as the oversight of the implementation and progress. They also incorporate climate-related matters into corporate decision-making process and executive compensation. They report to the Board Chair and oversee the Sustainability Committee, as well as being responsible for setting out the risk management policy and framework, reviewing the appropriateness of the policy and framework on an ongoing basis, and ensuring and responsible for that enterprise risk management and internal control are implemented.</p>
Other C-Suite Officer	<p>The Chief Investment Officer (CIO) is responsible for sustainability and climate change issues throughout BTS Group. The CIO is a member of the Sustainability Committee, appointed by the Board of Directors or the members of the Sustainability Committee. The CIO is directly responsible for the integration of sustainability and climate-related issues into the strategy of the Company. This includes day to day oversight of BTS Group Climate Strategy, and incorporating climate-related issues into investor relations, business development and sustainability priorities and decision-making.</p>
Board-level committee	<p>The Sustainability Committee is a subcommittee of the Board of Directors of the Company. The Sustainability Committee reports on relevant climate-related developments to the board to ensure climate strategy is in line with international standards and is responsible for establishing, reviewing and updating the Sustainability Vision, Mission and Strategy as well as overseeing climate-related issues of the Company and to propose any such recommendations to the Board of the Directors. They are responsible for developing and increasing both internal and external stakeholder awareness of sustainable practices whether public policy engagement through trade associations aligns with the Paris Agreement, and review the Company's Sustainability Report. The Sustainability Committee monitors alignment between our climate position and climate policy positions of trade associations to which we belong, and monitors implementation of the Climate Strategy, and collaborates with the Risk Management Committee on assessment of risk management and mitigation in relation to sustainability matters.</p>
Board-level committee	<p>The Risk Management Committee works with the Sustainability Committee on assessment of risk management and mitigation in relation to sustainability matters. The Enterprise Risk Management Process consists of 5 key activities, namely, 1) Governance and Risk Culture 2) Strategy and Objective Setting 3) Performance 4) Review and Revision and 5) Information Communication, and Reporting. The Risk management Committee reviews and responsible for risk management policies, which include climate-related risks. The Risk Management Committee report on climate-related risks to the BoD on an annual basis.</p>

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	Scope of board-level oversight	Please explain
Scheduled – all meetings	<p>Reviewing and guiding annual budgets</p> <p>Overseeing major capital expenditures</p> <p>Overseeing acquisitions, mergers, and divestitures</p> <p>Overseeing and guiding employee incentives</p> <p>Reviewing and guiding strategy</p> <p>Overseeing the setting of corporate targets</p> <p>Monitoring progress towards corporate targets</p> <p>Reviewing and guiding the risk management process</p> <p>Other, please specify (Reviewing and guiding major plans of action, Reviewing and guiding business plans, Monitoring and overseeing progress against goals and targets for climate-related issues)</p>	<Not Applicable>	<p>The Sustainability Committee is a subcommittee of the Board of Directors of the Company. The Sustainability Committee reports on relevant climate-related developments to the board to ensure climate strategy is in line with international standards and is responsible for establishing, reviewing and updating the Sustainability Vision, Mission and Strategy as well as overseeing climate-related issues of the Company and to propose any such recommendations to the Board of the Directors. They are responsible for developing and increasing both internal and external stakeholder awareness of sustainable practices whether public policy engagement through trade associations aligns with the Paris Agreement, and review the Company’s Sustainability Report. The Sustainability Committee monitors alignment between our climate position and climate policy positions of trade associations to which we belong, and monitors implementation of the Climate Strategy, and collaborates with the Risk Management Committee on assessment of risk management and mitigation in relation to sustainability matters.</p> <p>//Sustainability Committee’s Charter: 20210625-bts-sustainability-committee-charter-en-2021.pdf (btsgroup.co.th)</p> <p>The Risk Management Committee updates and reviews the enterprise risk management policy and framework, and the potential positive and negative effects of the risks, at least once a year. The Risk Management Committee considers new or emerging risks which may have a long-term impact on the Company, as well as determining the mitigation plans and measures to manage such risks. Meetings are held at least twice a year and an evaluation of the performance of the Risk Management Committee is conducted on an annual basis and results are reported to the Board of Directors.</p> <p>//Risk Management Committee’s Charter https://www.btsgroup.co.th/storage/download/cg/charter/20210610-bts-risk-management-committee-charter-en-2021.pdf</p> <p>Chief Investment Officer (CIO) has responsible on Day-to-day implementation of BTS Group climate strategy and Incorporate climate-related issues into business development and project feasibilities, sustainability priorities and decision-making, investor relations and corporate culture.</p>

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1 Yes	To enhance the capabilities of our board members, we provide training courses equipping them with knowledge and skill relevant to the understanding and responding to risks, opportunities, and impacts of Climate related issues. This is provided through the UN Global Compact Academy’s online courses in Climate Change & Environment. BTS Group is a member of the UN Global Compact since 2022. Another course provided is the Climate Governance course hosted by the Stock Exchange of Thailand and the Thai Institute of Directors. Completion of and graduation from these training courses forms the assessment criteria of our board members on climate-related issues.	<Not Applicable>	<Not Applicable>

C1.2

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

Position or committee

Sustainability committee

Climate-related responsibilities of this position

Developing a climate transition plan
 Managing public policy engagement that may impact the climate
 Managing value chain engagement on climate-related issues
 Assessing climate-related risks and opportunities
 Managing climate-related risks and opportunities

Coverage of responsibilities

<Not Applicable>

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Quarterly

Please explain

The Sustainability Committee, lying directly under the Board of Directors, is responsible for establishing, reviewing, and updating the Sustainability Vision, Mission and Strategy of the Company and to propose any such recommendations to the Board of the Directors. The committee is responsible for developing and increasing both internal and external stakeholder awareness of sustainable practices and to review the Company’s Sustainability Report. Similarly, the committee is determines the Company’s climate strategy and ensures that there are relevant policies and practices in place that are in line with international standards. Climate-related issues are monitored through its electricity and energy consumption, waste disposal, and GHG emissions performance on a regular basis. The committee also collaborates with the Risk Management Committee on assessment of risk management and mitigation in relation to the sustainability matters and development of materiality maps.

Position or committee

Risk committee

Climate-related responsibilities of this position

Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

<Not Applicable>

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Half-yearly

Please explain

The Risk Management committee lies directly under Board of Directors, updates and reviews the enterprise risk management policy and framework, as well as the potential positive and negative effects of the risks. The Risk Management committee considers new or emerging risks which may have a long-term impact on the Company, as well as determining the mitigation plans and measures to manage such risks, which includes climate-related risks. Climate-related risks are being increasingly integrated into enterprise risk management as a core focus area. Climate-related issues are monitored and controlled on a regular basis, as well as to assess the probability of occurrence of the risks from the operations of the Group. The Risk Management Committee reports on climate-related risks to the BoD on an annual basis.

Position or committee

Other C-Suite Officer, please specify (Chief Investment Officer (CIO))

Climate-related responsibilities of this position

Integrating climate-related issues into the strategy
Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

Half-yearly

Please explain

The Chief Investment Officer (CIO) lies under directly the Deputy CEO, is responsible for sustainability and climate change issues throughout BTSG and its implementation and integration into the Company's strategy. The CIO incorporates climate-related issues into investor relations, business development and sustainability priorities and decision-making. The CIO is also a member of the Sustainability Committee, appointed by the Board of Directors or the members of the Sustainability Committee. Climate-related issues are monitored on a regular basis based on corporate's sustainability performance.

Position or committee

Chief Operating Officer (COO)

Climate-related responsibilities of this position

Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

Half-yearly

Please explain

Chief Operating Officer (COO) is a member of the sustainability committee lies directly under the Deputy CEO, is also a member of the Board of Directors (BoD), and a member of the sub-committee. COO has responsibility for providing top-down oversight and supervision of climate-related issues and risks. COO reports to the Board of Directors and oversee the Sustainability Committee, as well as being responsible for setting out the risk management policy and framework, reviewing the appropriateness of the policy and framework on an ongoing basis, and ensuring and responsible for that enterprise risk management and internal control are implemented.

Position or committee

Chief Financial Officer (CFO)

Climate-related responsibilities of this position

Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

Half-yearly

Please explain

Chief Financial Officer (CFO) is a member of the risk committee and lies directly under the Deputy CEO. CFO has responsibility for providing top-down oversight and supervision of climate-related issues and risks. CFO reports to the Board of Directors and oversees the Risk Committee, as well as being responsible for setting out the risk management policy and framework, reviewing the appropriateness of the policy and framework on an ongoing basis, and ensuring and responsible for that enterprise risk management and internal control are implemented.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive

Chief Executive Officer (CEO)

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary

Salary increase

Other, please specify (Cash reward through points system)

Performance indicator(s)

Achievement of a climate-related target

Energy efficiency improvement

Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

Short-Term Incentive Plan

Further details of incentive(s)

The CEO of BTS Group has a target related to the achievement of BTS's GHG target. KPI accounts for 5% weight of total performance rating of CEO.

The BTS Spirit Club Programme (Nu Duan Chuan Ka Yan) is a project intended to reward all employees at BTS Group and its subsidiaries for good corporate behaviour such as energy savings. All full time employees which includes CEO, Other name executives, Business Unit Managers, Employees are eligible. The Spirit Club Programme awards employees 100 points per year for showing good behaviour in reducing electricity consumption contributing to the overall Energy Reduction. Points earned may be used in exchange, according to the level of points, for rewards of monetary value or educational funding for their children, with a maximum exchange limit of 3 times per person. One of the options in which employees can exchange for rewards is exchanging points for cash in which employees that have accumulated points from various criteria to at least 3000 points can exchange for cash at THB 500. Points may also be exchanged for 1-year fitness memberships or products and services offered by BTS Group Holdings PCL and its subsidiary companies.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

By having our employees reduce electricity consumption, this contributes to the Company reducing its greenhouse gas emissions from the source. This will make BTS Group's climate commitments and transition plan easier to implement, as the amount of emissions to be reduced are smaller.

Entitled to incentive

Other C-Suite Officer

Type of incentive

Monetary reward

Incentive(s)

Other, please specify (Cash through points system)

Performance indicator(s)

Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

Short-Term Incentive Plan

Further details of incentive(s)

The BTS Spirit Club Programme (Nu Duan Chuan Ka Yan) is a project intended to reward all employees at BTS Group and its subsidiaries for good corporate behaviour such as energy savings. All full time employees which includes CEO, Other name executives, Business Unit Managers, Employees are eligible. The Spirit Club Programme awards employees 100 points per year for showing good behaviour in reducing electricity consumption contributing to the overall Energy Reduction. Points earned may be used in exchange, according to the level of points, for rewards of monetary value or educational funding for their children, with a maximum exchange limit of 3 times per person. One of the options in which employees can exchange for rewards is exchanging points for cash in which employees that have accumulated points from various criteria to at least 3000 points can exchange for cash at THB 500. Points may also be exchanged for 1-year fitness memberships or products and services offered by BTS Group Holdings PCL and its subsidiary companies.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

By having our employees reduce electricity consumption, this contributes to the Company reducing its greenhouse gas emissions from the source. This will make BTS Group's climate commitments and transition plan easier to implement, as the amount of emissions to be reduced are smaller.

Entitled to incentive

Business unit manager

Type of incentive

Monetary reward

Incentive(s)

Other, please specify (Cash through points system)

Performance indicator(s)

Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

Short-Term Incentive Plan

Further details of incentive(s)

The BTS Spirit Club Programme (Nu Duan Chuan Ka Yan) is a project intended to reward all employees at BTS Group and its subsidiaries for good corporate behaviour such as energy savings. All full time employees which includes CEO, Other name executives, Business Unit Managers, Employees are eligible. The Spirit Club Programme awards employees 100 points per year for showing good behaviour in reducing electricity consumption contributing to the overall Energy Reduction. Points earned may be used in exchange, according to the level of points, for rewards of monetary value or educational funding for their children, with a maximum exchange limit of 3 times per person. One of the options in which employees can exchange for rewards is exchanging points for cash in which employees that have accumulated points from various criteria to at least 3000 points can exchange for cash at THB 500. Points may also be exchanged for 1-year fitness memberships or products and services offered by BTS Group Holdings PCL and its subsidiary companies.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

By having our employees reduce electricity consumption, this contributes to the Company reducing its greenhouse gas emissions from the source. This will make BTS Group's climate commitments and transition plan easier to implement, as the amount of emissions to be reduced are smaller.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	
Medium-term	1	5	
Long-term	5		Long-term horizon is considered to be more than 5 years.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

BTS Group uses a risk matrix that measures likelihood on its y-axis and impact on its x-axis (risk score in parentheses). Likelihood is divided into five categories including: rare (1), unlikely (2), moderate (3), likely (4), and almost certain (5). Similarly, impact is also divided into five categories including: low (1), minor (2), moderate (3), major (4), and critical (5). The combination of the two, which is the overall level of risk (likelihood multiplied by impact), can be categorized from 'very low (1-2)', 'low' (3-4), 'moderate' (5-10), 'high' (12-15), to 'very high' (20-25). BTS Group considers a substantive financial or strategic impact to be a score of 20-25 in our risk matrix, as well as taking into consideration the percentage of Earnings Before Tax (EBT). Our risk parameter indicates that a financial loss (on EBT) of less than 2% has a low impact, a loss of 2-10% has a minor impact, a loss of 10-30% has a moderate impact, a loss of 30-50% has a high impact, and a loss of more than 50% has a critical impact on the organization. Therefore, a risk score of 20-25 would translate to 30-50%+ of EBT loss as to receive a risk score of 20-25, the impact and likelihood would need to be critical (5) and certain (5), respectively, giving a score of 25, or either one between likelihood and impact is a score of 4 (likelihood = likely/impact = major) while the other is a score of 5 (likelihood = certain/impact = critical), giving a score of 20. The same can be applied to cash flow impact.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term

Medium-term

Long-term

Description of process

The Enterprise Risk Management Process ensures that proper governance and risk culture are in place; significant risks are identified, assessed and managed to be within an acceptable level; and risk monitoring and reporting are effectively implemented.

Climate-related risks and opportunities are identified, assessed and managed through BTS Group Risk Assessment which is conducted annually. The assessment was conducted by engaging BTS Group business units (sustainability, business development, risk working team) to score materiality of various risks on the BTS Group business.

BTS Group also conducted a qualitative climate-related risk 'hotspot' analysis to understand key physical and transition risks and opportunities for the company.

Case study:

For physical risks, BTS Group undertook a qualitative assessment of threats from different natural hazards and extreme events, and climate change, based on the location of the BTS Group assets. Assessment used reliable international and national open source data for baseline natural hazards and the 'worst case' climate change IPCC scenario of RCP 8.5 that envisaged the highest physical climate risks. The hazard assessment was undertaken for timelines including Baseline, 2030, and 2050. Seven hazard categories considered were water stress, inland flood, extreme heat, cyclone, wind speed, coastal flood and lightning.

Case study:

For transition risks, BTS Group conducted analysis of risks from drivers related to the low-carbon economy, according to the IEA Stated Policies Scenario (STEPS) and Sustainable Development Scenario (SDS), considering 2030 and 2040 timescales. Risks were scored according to BTS Group company-wide risk assessment criteria.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Current regulation is monitored as a physical risk driver as climate-related events such as water stress, flooding, and extreme heat have the potential to negatively impact BTS Group's infrastructure and operations. Currently, there is no regulation that impacts BTS in terms of physical risk and transition risk.
Emerging regulation	Relevant, always included	We have evaluated financial risks related to regulatory carbon price around our BRT (bus rapid transit) that operates on natural gas for vehicles (NGV). In 2030 we estimate a carbon price of USD 90. We manage this risk through improving fuel efficiency of our fleet. There could be new regulations and norms pertaining to urban flooding which may lead to implications for projects, restrictions on fresh water use in times of water stress, and the imposition of more stringent norms towards employee and passenger health and safety during extreme heat. To mitigate and manage this risk, BTS Group has established the Risk Management Committee to continuously monitor new or emerging regulations which may have a long-term impact on the Company.
Technology	Relevant, always included	Technology is monitored as a transition risk driver as the development of new technologies and reduction in the cost of renewable energy sources continue. This poses potential opportunities as well as risks. Through our assessments, BTS Group anticipates to shift some parts of our operation to green technology, such as shifting NGV buses to EV buses. Additionally, our train operation system (including offices and depots) will input renewable energy electricity. BTS Sky Train will increase the share of renewable energy electricity. This can also be a risk as alternative transportation become low carbon, which may lessen the role of mass transportation as the sole form of low carbon transportation.
Legal	Relevant, always included	Even though BTS Group does not have a large direct carbon footprint, BTS Group will always prepare and consider litigation risks by ensuring that our actions comply with regulations and are in line with or ahead of stakeholder expectations.
Market	Relevant, always included	Through our climate-related risk assessments, we always consider market risks in our assessments. For example, we consider the emerging demand for low-carbon transportation services that are more energy efficient, such as other transportation companies that have launched buses and ferries as alternative green travelling options.
Reputation	Relevant, always included	Climate-related events have the potential to negatively impact BTS Group's reputation amongst shareholders and stakeholders as there is increasing concern and expectation towards corporate climate action. An example of a reputational risk derived from climate stressors or physical hazards could be delays in service from extreme heat which may potentially lead to negative media coverage and reputational loss. However, BTS Group's selection as a 'DJSI Industry Leader' demonstrates to shareholders and stakeholders its commitment to addressing climate change challenges.
Acute physical	Relevant, always included	Through our climate-related risk assessments, we consider inland flooding, and wind speed to be acute physical risks that will highly affect our infrastructure and train operations in the short term. After flooding in 2011 (during which our operations continued uninterrupted), there has been investments on barriers and training with regards to flood responses have been undertaken to relevant employees. We have identified a flooding risk as high level flooding which causes water breaching inside the workshop in the depot, which can halt all maintenance of trains. Trains will not be able to undergo maintenance in the case of train malfunction or engine failure etc. and therefore concrete walls must be set up as well as stop log distributed at important locations.
Chronic physical	Relevant, always included	Through our climate-related risk assessments, we consider water stress and extreme heat to highly affect our infrastructure and train operations in the long term. An example of a chronic physical change resulting from climate-related impacts is water stress. With increased water stress it will become more difficult to source water for our WASH (Water, sanitation and hygiene) related activities.

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 & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

BTS Group has identified the potential long and medium terms climate related risks that could financially have impact on the Group's operation in two aspects, namely; risk driven by changes in regulation and risk driven by change in physical climate parameters. For regulatory related, even though Thailand's has not yet implemented carbon tax scheme, we have evaluated financial risks related to regulatory carbon price around our BRT (bus rapid transit) that operates on natural gas for vehicles (NGV) in Bangkok. Emissions from BRT NGV in fiscal year 2022/2023 were 1,875.07 tCO₂e (which is accounted for 2.42% of total BTS Scope 1 and 2 emissions). In 2030 we estimate a carbon price of USD 90. This carbon price figure was estimated by using IEA World Energy Outlook 2022 Net Zero Emission by 2050 Scenario for emerging market and developing economies with Net Zero Emissions pledges. We manage this risk through improving fuel efficiency of our fleet through identification of different measures and means. Given this assessment on the potential regulatory risk, we identified that the estimated financial implications of the risk in 2030.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

5781591

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

We have evaluated financial risks related to regulatory carbon price around our BRT (bus rapid transit) that operates on natural gas for vehicles (NGV). Emissions from BRT NGV and other vehicles in fiscal year 2022/2023 were 1,875.07 tCO₂e. In 2030 we estimate a carbon price of USD 90 per tonne. We manage this risk through improving fuel efficiency of our fleet. As of 31 March 2023 or the end of the FY, USD conversion to THB was at approximately THB 34.26 per USD 1 therefore financial implications for cost of carbon tax in 2030 is approximately THB 5,781,591 per year (1,875.07 tCO₂e x USD 90/tCO₂e x THB 34.26/USD).

Cost of response to risk

396414.88

Description of response and explanation of cost calculation

Even though our major revenue from MOVE business – BTS's Electric Sky Train (68%) is low-carbon products. We have closely monitored and estimated impacts to climate-related issues i.e. GHG emissions from our BRT's operation which has been using gas as fuel. Emissions from BRT NGV in fiscal year 2022/2023 were 1,875.07 tCO₂e (which is accounted for 2.42% of total BTS Scope 1 and 2 emissions). We have a team of 2 people in charge of energy related matters to mitigate potential risk from carbon pricing. For example, the team responsible for renewable energy expansion plan and feasibility study. Cost of response to risk was estimated with salary of THB 198,207.44 per year per person, making a total of THB 396,414.88 per year. For example, our team has implemented measures to reduce emissions from BRT.

BTS Group continued to preserve its carbon neutral status through the continuance of our environmental-focused initiatives including operational energy efficiency solutions and having at least 10% of electricity consumption from renewable sources. Our efforts to decarbonise our operations has led the Company to register a reduction of 10,300 tonnes of carbon dioxide equivalent, representing a 13% reduction in Scope 2 emissions within this year. Going further, a feasibility study is currently underway for the installation of solar rooftops for the Yellow and Pink line depots. Regardless, the openings of our Yellow and Pink lines, set to open within 2023 and the first half of 2024 respectively, are expected to be catalysts behind the expansion of the country's urban mobility and accessibility for sustainable socio-economic development via this kind of low-carbon services (BTS's Electric Skytrain of Pink and Yellow Lines).

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Other, please specify (Increased severity and frequency of extreme weather events such as cyclones and floods)
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

After flooding in 2011, there has been investments on barriers and training with regards to flood responses have been undertaken to relevant employees. We have identified a flooding risk as high level flooding which causes water breaching inside the workshop in depot at Mo Chit and other depots can halt all maintenance of trains. Trains will not be able to undergo maintenance in the case of train malfunction or engine failure etc. and therefore concrete walls must be set up as well as stop log distributed at important locations.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

101038356

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

We have evaluated financial risks related to climate-related physical risks around our rail systems (sky train) that operates in Thailand. The risks from delay service and service disruption was estimated to be around THB 101,038,356 (according to FY2022/2023 BTS's Skytrain revenue).

We assumed disruption from climate-related physical impacts would be around 3 days per year. As of 31 March 2023 end of the fiscal year, total revenue of BTS's Skytrain is equal to THB 12,293mn per year which equal to THB 33,679,452 per day financial implications for cost of disruption is approximately THB 101,038,356 (days x revenue loss per day).

Cost of response to risk

792829.76

Description of response and explanation of cost calculation

To help prevent this risk, flood in particular, we review development planning near railway lines to make sure the drainage systems proposed are adequate and proactively monitoring weather forecast on a regular basis. BTSC has already installed flood barriers at Mo Chit headquarters and Mo Chit depot. Pump rooms are 0.9-2.6 metres above sea level, except Mo Chit – Khu Khot extension (16 stations). These are underground, and are protected (covered) from street level, with water pumping facilities as needed. BTSC's depot at Khu Khot and Samut Prakarn are elevated at 4.5-5 metres above sea level.

We have a team of 4 people in charge of business continuity related matters to mitigate potential risk from natural hazards. For example, the team responsible for monitor flood risk, continuity plan and adaptation plan. Cost of response the risk was estimated with salary of THB 198,207.44 per year per person, making a total of THB 792,829.76 per year.

Comment**Identifier**

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms
---------------------	---------------------------

Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

The majority of our energy (93%) comes from the use of electricity. With this, we cannot avoid any changes in pricing of electricity. The enforcement of carbon pricing in Thailand (cap and trade or tax) is likely to cause electricity prices to increase, as the majority of Thailand's power generation is fossil fuel based (natural gas).

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

103000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

We estimated the increase in carbon price based on projected grid emission factor multiplied by carbon cost. We expect carbon price to be implemented in Thailand around 2025. Since there are no references for Thailand regulatory carbon price, we used IEA WEO 2020 price for China as a proxy, at USD 17/tCO₂e (THB 582.42/tCO₂e). Converting this price using Thailand's current grid emission factor, 0.4999 tCO₂e/MWh. With business expansions, we estimate total electricity consumption at 353,949 MWh in 2025, multiplied by emission factors and carbon price, leading to THB 103 mn.

Cost of response to risk

594622.32

Description of response and explanation of cost calculation

We are looking to source from renewable sources. In future, REC instruments may become cheaper than traditional sources due to carbon price. We have a dedicated team that liaises with authorities with EGAT to get up to date on the latest instruments regarding renewable energy.

We have a team of 3 people in charge of energy related matters to mitigate potential risk from electricity price volatility. For example, the team responsible for renewable energy sourcing and REC purchasing administration. Cost of response the risk was estimated with salary of THB 198,207.44 per year per person, making a total of THB 594,622.32 per year.

Comment**C2.4****(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?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Currently BTS Sky Train has a total 63 stations with an approximately 70 kilometres in length for public service (Green and Gold Lines). Government initiative helps drive low carbon transport higher demand for public transport service as commuters will be optional to use mass transit systems more than private vehicles. This is in lined with Thailand's aspiration to achieve its long-term targets on Carbon Neutrality by 2050 and Net Zero Emissions by 2050.

Most significant opportunity results from climate change-related developments is BTS Sky Train extensions lines. Government initiative to drive low carbon transport (Electric vehicles) such as new Pink line and new Yellow line, total addition of 55 stations. The openings of our Yellow and Pink lines, set to open within 2023 and the first half of 2024 respectively.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

300000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Most significant opportunity results from climate change-related developments is BTS Sky Train extensions lines. Government initiative to drive low carbon transport (Electric vehicles) such as new Pink line and new Yellow line, total addition of 55 stations. The openings of our Yellow and Pink lines, set to open within 2023 and the first half of 2024 respectively.

BTS Group estimates potential financial impact from forecasted ridership multiplied by average fare from 2021 to 2050 in Pink and Yellow lines. For example, in 2022/2023 ridership is 100 million and average fare is THB 30, thus estimated revenue from new lines is THB 3,000mn.

Cost to realize opportunity

9600000000

Strategy to realize opportunity and explanation of cost calculation

To ensure this opportunity is realised, the BTS Group is expected to invest in developing climate-related initiatives related to transportation. The new BTS Sky Train Pink and Yellow lines that aligns with the expectation of the government to drive low carbon transport. The cost incurred is the cost of bidding for concession which estimated from the civil engineering, evaluation and management, and rolling stock costs. Therefore, cost of response equal to civil engineering + evaluation and management + rolling stock = THB 96,000mn.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased access to capital

Company-specific description

Currently, BTS Group and BTSC have raised funds THB 62,800mn through sustainable finance practices.

BTS Group issued three Green bonds total amount of THB 31,800mn in the past four years. The first bond, amounting THB 13,000mn, was issued in May 2019 and the second bond, amounting THB 8,600mn, was issued in November 2020. Our third and most recent bond, amounting THB 10,200mn, was issued in November 2021. These bonds have been certified that the company comply with the Climate Bonds Standard by Climate Bonds Initiative which is an international and non-profit organisation working solely to mobilise the largest capital market for Climate change solutions. In 2022, BTS also issued two Sustainability Linked Bonds (SLB) covering BTSG's train fleet and amounting to THB 31,000mn.

The Bonds issued in May 2019 were the first Thai Green Bond issued under the new Thai Securities & Exchange Commission's Green Bond and the first Thai Green Bond offering to Thai institutional and high-net-worth investors. The benefit from this opportunity is the lower interest cost from Green Bond that the investors who are looking for ESG investments are willing to have a lower return for investments that have a higher ESG benefit, and by issuing this we are helping satisfy the demand of this investor group.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

62800000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

BTS Group issued three Green bonds total amount of THB 31,800mn in the past four years. The first bond, amounting THB 13,000mn, was issued in May 2019 and the second bond, amounting THB 8,600mn, was issued in November 2020. Our third and most recent bond, amounting THB 10,200mn, was issued in November 2021. The first two bonds are separated into 4 debentures each at 2, 3, 5, 7 and 10 years. The third bond (FY2021/2022) is separated into 3 debentures at 3, 5, 7, and 10 years. Green bonds, in addition, would lower interest cost compared to conventional bonds. An estimated quantifiable benefit from the lower interest cost was around 26 bps which means that rates have reduced by 0.16-0.26% percentage points. If rates were at 0.75%, and the Green bonds lowered them by 0.16-0.26%, or 16-26 basis points. In 2022, BTS also issued two Sustainability Linked Bonds (SLB) covering BTSG's train fleet and amounting to THB 31,000mn. Total of financial impact (access to green bonds and SLBs) = THB 31,800mn + THB 31,000mn = THB 62,800mn.

In summary, BTS Group estimated the cost saving throughout debenture term of around THB 596mn.

For more detail, please see BTS Group's Green Bond Report 2023. (<https://www.btsgroup.co.th/storage/download/sustainability/green-bond/bts-green-bond-report-2023-en.pdf>)

Cost to realize opportunity

1094622.32

Strategy to realize opportunity and explanation of cost calculation

We actively participated in Thai green bonds market in Thailand. The BTS Group have developed Green Bond Framework under which the Company intends to issue Green Bonds to finance or refinance projects which provide clear environmental benefits, specifically related to clean transportation. When issued, these Bonds were the first Thai Green Bond issued under the new Thai SEC's Green Bond. In 2022, BTS also issued two Sustainability Linked Bonds (SLB) covering BTSG's train fleet and amounting to THB 31,000mn. The two main KPIs for these SLBs are energy efficiency improvement and renewable energy use for Green Line.

We have a team of 3 people in charge of Green bonds related matters. For example, the team responsible for developing Green bond and administration. Cost of response the risk was estimated with salary of THB 198,207.44 per year per person, making a total of THB 594,622.32 per year. An additional THB 500,000 was paid for a Second Party Opinion by DNV and SLB KPI assurance by LRQA.

Comment**Identifier**

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient modes of transport

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

The Thailand Greenhouse Gas Management Organisation (TGO) has developed a methodology for Thailand Voluntary Emissions Reduction (T-VER) for mass transit railways. This T-VER can generate revenues through voluntary sale of T-VER credits for companies in Thailand that wish to go carbon neutral. The methodology is based on emissions avoided by passengers using BTS Group instead of other forms of transport.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

1687061.66

Potential financial impact figure – maximum (currency)

3374123.32

Explanation of financial impact figure

The T-VER methodology has been finalised. In addition, calculating amount of T-VER credits in tCO₂e would require surveying our customers regarding their travel habits. Therefore, the estimated revenue from T-VER has a wide range depending on the assumed avoided emissions. We estimated the maximum amount of avoided emissions by multiplying all of our passenger-km travelled 1,836,733,716.92 passenger-km in the reporting year multiplied by emission factor for private car (127 gCO₂/pkm based on methodology on "Modal Shift in Passenger Transportation by Rail-based Mass Rapid Transit" under TGO's T-VER (Thailand Voluntary Emission Reduction Programme). This gives an avoided emissions number of 233,449 tCO₂e. Out of this total number, the actual amount of avoided emissions is less as the avoided emissions number must be based only on passengers that have changed their transportation mode. This number is difficult to estimate; therefore, we estimate the range of valid avoided emissions for the T-VER out of the total to be 10-20%. Then, the average price of T-VER's carbon credits was estimated at 108.22 THB/tCO₂e in 2022 (reference: <http://carbonmarket.tgo.or.th/>).

Given this range, the estimated revenue is assumed using 100% sale rate of T-VER. The equation for revenue = Avoided emissions total (tCO₂e) x Percentage of valid avoided emissions (%) x T-VER price (THB).

We will use these revenues to fund our own carbon credit purchase to maintain our carbon neutrality. The revenues based on above estimate would be about 20-70% of funds needed to purchase our carbon credits.

Cost to realize opportunity

5000000

Strategy to realize opportunity and explanation of cost calculation

To realise this opportunity, we have been closing collaborating with Thailand Greenhouse Gas Management Organisation (TGO) on the methodology. In addition, by becoming carbon neutral ourselves we participated in the carbon market. BTS Group has formed an alliance with 10 firms in various industries to set up a Carbon Markets Club in a fresh move to support carbon emissions trade, a key mechanism to reduce greenhouse gases. The 11 firms signed a memorandum of understanding to brace for stricter trade rules in the post-pandemic period when European countries may, under the European Green Deal, impose a non-tariff barrier on Thai exports from factories that emit high levels of carbon emissions.

To calculate the amount of avoided emissions, surveys shall be conducted on passengers based on the T-VER methodology. Multiplying by the assumed survey cost per person and the amount of surveys need to be conducted, the cost to realize this opportunity is THB 5mn.

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan

No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a climate transition plan within two years

Publicly available climate transition plan

<Not Applicable>

Mechanism by which feedback is collected from shareholders on your climate transition plan

<Not Applicable>

Description of feedback mechanism

<Not Applicable>

Frequency of feedback collection

<Not Applicable>

Attach any relevant documents which detail your climate transition plan (optional)

<Not Applicable>

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future

BTS Group has completed an assessment regarding climate-related risks and opportunities for the Company's operations and portfolio. The climate risk assessments conducted were to identify material physical and transition climate-related financial risks and potential business impacts. BTS Group has developed a forward-looking plan to address climate risks and opportunities in line with the Company's strategic priorities. Our long-term climate strategy evolved to remain a certified carbon neutral company with at least 10% renewable energy consumption. We have achieved 13% renewable energy consumption of company-wide in FY2022/23.

Additionally, BTS's main business of operating a mass transit railway is generally considered as low carbon (for example, by the Climate Bonds Taxonomy). Through our BTS train business, we will help Bangkok shift away from carbon intensive forms of transport (namely private cars) towards a more efficient and integrated public transit system. Expanding our business will lead to a larger amount of avoided emissions and emissions reductions for Bangkok as whole, however for our business it will mean increased energy consumption and GHG emissions. Therefore, aligning our GHG emissions trajectory with a 1.5 degree Celsius world will be difficult until renewable electricity (for which RECs is currently the most appropriate source for BTS) is more cost effective.

A new carbon credit methodology under the Thailand Voluntary Emissions Reduction or T-VER, the T-VER Methodology has been published. This T-VER methodology will allow BTS to sell carbon credits, and these will help to fund our commitments to remain a carbon neutral company.

Going further, a feasibility study is currently underway for the installation of solar rooftops for the Yellow and Pink line depots. Regardless, the openings of our Yellow and Pink lines, set to open within 2023 and the first half of 2024 respectively, are expected to be catalysts behind the expansion of the country's urban mobility and accessibility for sustainable socio-economic development.

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenario		Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios	RCP 2.6	Company-wide	<Not Applicable>	<p>Our physical scenario analysis uses the IPCC RCP 2.6 scenarios and assesses potential impacts for baseline, 2030, 2040 and 2050 timeframes. Physical risks assessed are in line with TCFD recommendations including water stress, riverine flood, extreme heat, cyclone, wind speed, coastal flood, and lightning. The analysis covers the geographical location of existing and proposed Urban Transportation in Bangkok including Sky Rail and BRT services.</p> <p>The results of the physical risk scenario analysis suggest high risk of water stress, inland flood, extreme heat, and suggest low risk of cyclone and wind speed in 2030, 2040 and 2050. This will result in potential costs from infrastructure damage and service delays. This has informed BTS business objectives and strategy to step up and improve resilience in terms of physical impacts by providing cost estimation from inaction. For example, BTS has prepared to form adaptation plan to mitigate physical risks which potentially occur in the future.</p>
Physical climate scenarios	RCP 4.5	Company-wide	<Not Applicable>	<p>Our physical scenario analysis uses the IPCC RCP 4.5 scenarios and assesses potential impacts for baseline, 2030, and 2050 timeframes. Physical risks assessed are in line with TCFD recommendations including water stress, riverine flood, extreme heat, cyclone, wind, coastal flood, and lightning. The analysis covers the geographical location of existing and proposed Urban Transportation in Bangkok including BTS SkyTrain and BRT services.</p> <p>The results of the physical risk scenario analysis suggest high risk of water stress, inland flood, extreme heat, and wind speed in 2030. While coastal flood risk will become prominent in 2040. This will result in potential costs from infrastructure damage and service delays. This has informed BTS business objectives and strategy to step up and improve resilience in terms of physical impacts by providing cost estimation from inaction. For example, BTS has prepared to form adaptation plan to mitigate physical risks which potentially occur in the future.</p>
Physical climate scenarios	RCP 8.5	Company-wide	<Not Applicable>	<p>Our physical scenario analysis uses the IPCC RCP 8.5/SSP 5-8.5 scenarios and assesses potential impacts for baseline, 2030, 2040 and 2050 timeframes. Physical risks assessed are in line with TCFD recommendations including water stress, riverine flood, extreme heat, cyclone, wind, coastal flood, and lightning. The analysis covers the geographical location of existing and proposed Urban Transportation in Bangkok including BTS SkyTrain and BRT services.</p> <p>The results of the physical risk scenario analysis suggest high risk of water stress, inland flood, extreme heat, and coastal flood and suggest low of cyclone and wind speed in 2030, 2040 and 2050 timeframes. This will result in potential costs from infrastructure damage and service delays. This has informed BTS business objectives and strategy to step up and improve resilience in terms of physical impacts by providing cost estimation from inaction. For example, BTS has prepared to form adaptation plan to mitigate physical risks which potentially occur in the future.</p>
Transition scenarios	IEA SDS	Company-wide	<Not Applicable>	<p>Our transition scenario analysis assesses the risks relating to the transition to a low-carbon economy. We have identified policy and legal, technology, market, and reputation drivers that may impact our operations. To assess the impacts, we have used the IEA Stated Policies Scenario (STEPS) and IEA Sustainable Development Scenario (SDS) under 2030 and 2040 timeframes. We have used STEPS to assess potential impacts under the current policies and targets that governments have announced. The outcomes under STEPS was contrasted with impacts assessed using SDS which represents a “well below 2 °C” pathway achieved through low-carbon economy transition and meeting all current net zero pledges.</p> <p>Key impacts in SDS:</p> <ul style="list-style-type: none"> • Thai investors will focus more on the company’s climate mitigation strategies. Investor will look for the companies that partner with UNPRI or Climate Action 100. • Combustion engines tax will continue to increase annually. If BRT operations are not able to shift into low carbon technology such as electric buses, BTS will shoulder more financial costs
Transition scenarios	IEA STEPS (previously IEA NPS)	Company-wide	<Not Applicable>	<p>Our transition scenario analysis assesses the risks relating to the transition to a low-carbon economy. We have identified policy and legal, technology, market, and reputation drivers that may impact our operations. To assess the impacts, we have used the IEA Stated Policies Scenario (STEPS) and IEA Sustainable Development Scenario (SDS) under 2030 and 2040 timeframes. We have used STEPS to assess potential impacts under the current policies and targets that governments have announced. The outcomes under STEPS was contrasted with impacts assessed using SDS which represents a “well below 2 °C” pathway achieved through low-carbon economy transition and meeting all current net zero pledges.</p> <p>Key impacts in STEPS:</p> <ul style="list-style-type: none"> • In 2030, GHG reduction in the transport sector needs to contribute about 36.3% of Thailand’s NDC Roadmap. • High tax for combustion engine cars and low tax for electric cars. BTS may need to shift BRT buses from combustion engine to electric buses to reduce the cost from increasing tax.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

Focal questions: How could climate-related physical and transition risk plausibly affect our company? What should we do? When? How?

As the effects of climate change become evident, the level of commitment businesses has to make throughout their operations to become resilient to climate change also increase. Therefore, BTS Group has been conscious of the imminent threat climate change imposes and have consistently conducted our business according to our climate strategy, ensuring the sustainability of our future operations.

For transition risks we used the IEA WEO STEPS and SDS scenarios due to their reputability and availability of data. We chose the SDS scenario (rather than the NZE scenario) to reflect a low carbon scenario as it has a more complete and robust data set. For our “business as usual” scenario, we chose STEPS, rather than the APS, due to greater certainty in Stated Policies (STEPS) compared to the Announced Policies (APS) where it is less certain that countries will commit to their announced policies.

In FY2022/2023, BTS has re-assessed our physical risk scenario analysis. For physical risks, IPCC RCP 2.6 and RCP 8.5 were selected as the IPCC provides the most robust set of data for physical climate change. [RCP 2.6 was select as a low-end emission scenario to test the resilience of our asset to the impact of stringent partway.]. RCP 8.5 was selected as a worst-case scenario to test the resilience of our assets to the worst impacts. This will allow us to prepare for the full spectrum of potential impacts, between RCP 2.6 and RCP 8.5, that may occur. Recently, we have assessed our operations through three different physical risk scenarios and timeframe including RCP2.6, RCP4.5, RCP8.5 with 2030, 2040 and 2050 timeframes.

Results of the climate-related scenario analysis with respect to the focal questions

In term of operational context of climate-related physical risk. The results of physical risks shown that water stress, extreme heat, and inland & coastal flood are major concern of the business particularly inland flood. In 2011, there was a special case of flooding in our operational area due to heavy rainfall, dams were overtopped, rapid urbanisation in Bangkok and tropical storms. In order to tackle this historical event, BTS has identified company’s assets that could be affected and prepared adaptation plan with clear timeline to be completed by 2027. The adaptation plans are included; regular capacity training to relevant employee in response to flood, increase of capacity of storm water drainage and pumping system, preparation of metro operation during heavy rainfall intensity, sufficient camber and stormwater drainage capacity ensured for roads carrying bus/BRT transport.

In terms of the sectoral context of climate-related transition risks, the results of our transitional risk analysis helped us to understand the specific climate transition impacts to our main business of mass transit railway services. First, there will be an increase in demand for low-carbon transportation services that utilize renewable energy and are more energy efficient. Our business is in line with this trajectory and contributes to the low-carbon transition of transport systems in Thailand. Second, technological advances can enable a reduction in the cost of renewable energy sources. BTS has monitored and worked closely with governments to ensure our business is aligned with the country’s roadmap. New renewable technologies, such as hydrogen, are taken into account and is identified as a good opportunity for our future operations. Third, increasing stakeholder concerns and expectations on corporate climate actions may impact our reputation. We are well aware of the reputational risk drivers related to climate change. Therefore, to maintain our reputability, we have established short-, medium-, and long-term climate strategies including a carbon neutral plan, increasing renewable energy consumption, green investments and financing, and engagement and disclosures on climate related issues. Fourth, regulatory impacts driven by Thailand’s new Nationally Determined Contribution (NDC) and emerging policies on carbon pricing. To minimize future impacts, BTS has set an internal carbon pricing to seek the most suitable GHG reduction investment opportunities. We also collaborated with the Thailand Greenhouse Gas Management Organization (TGO) to develop a GHG mitigation mechanism that aligns with the Thailand Voluntary Emission Reduction Programme (T-VER). This methodology is called the “Modal Shift in Passenger Transportation by Rail-based Mass Rapid Transit” and enables an organisation to record the amount of GHG emissions reduced attributable to commuters shifting from different transport modes (e.g. taxis, buses, etc.) to mass transit.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>BTS recognises that market risks and opportunities resulting from climate-stressors could have a direct influence on our products and services strategy. As a result BTS has planned to expand its services in low-carbon transportation (urban rail transport) as a part of mitigation activities. Time horizon cover this year to 2030 and 2040. This is aligned with our climate-related scenario analysis (IEA Sustainable development scenario vs. IEA Stated policy scenario).</p> <p>The most substantial decision - To support our growth in low-carbon transportation (urban rail transport) services, we are expanding our existing network and purchasing more trains to enable larger service volumes. In FY2021/2022, we have made new train purchases for the Green Line and have continued our construction of the Pink Line (approximately 97% complete for Khae Rai to Minburi and 23% for Si Rat to Muang Thong Thani) and Yellow Line (approximately 99% complete). Full operational openings of both lines are set to commence within 2023, with the Yellow line opening on 19 June 2023 (partial opening on 3 June). Over the next 4 years, we are targeting to further expand our rail network by 68 km (including Yellow and Pink Lines).</p>
Supply chain and/or value chain	Yes	<p>BTS recognises that climate-related risks and opportunities resulting from climate-stressors could have a direct influence on our value chain strategy. As a result BTS has actively engaged with its suppliers and customers on climate change as a part of adaptation and mitigation activities. This is because we believe that building awareness is an important first step for further cooperation with our suppliers and customers. Time horizon cover this year to 2030, 2040 and 2050. This is align with our climate-related scenario analysis (IEA Sustainable development scenario vs. IEA Stated policy scenario, RCP 8.5 scenario, RCP 4.5 scenario and RCP 2.6 scenario).</p> <p>For example, In FY2021/2022, VGI Awareness Raising on Climate Change program which in collaboration with Root the Future, an environmental non-profit organisation, initiated the “Climate Clock” project as a call to action for Thai people to help tackle climate change.</p> <p>In FY2022/2023, BTS has launched “Hop On BTS” which is a special campaign under BTS Group’s sustainability communication that aims to raise awareness and invite people to ride our BTS SkyTrain - an environmental-friendly mode of transport.</p>
Investment in R&D	Yes	<p>BTS recognises that climate-related risks and opportunities resulting from climate-stressors could have a direct influence on our long-term strategy. As a result, BTS has engaged with Think Tank in Thailand to cooperate and support on low-carbon technology R&D for transportation as a part of mitigation activities. Time horizons cover this year to 2030, 2040 and 2050. This is aligned with our climate-related scenario analysis (IEA Sustainable development scenario vs. IEA Stated policy scenario, RCP 8.5 scenario, RCP 4.5 scenario and RCP 2.6 scenario).</p>
Operations	Yes	<p>BTS’s operations strategy has been influenced by climate-related risks and opportunities by recognizing that climate stressors or physical hazards could have significant impact on the operations. As a result BTS has planned to improve its operation resilience as a part of adaptation activities. Time horizon cover this year to 2030, 2040 and 2050. This is align with our climate-related scenario analysis including RCP2.6, RCP4.5 and RCP8.5)</p> <p>For example, flooding could increase the cost of infrastructure maintenance whilst disrupting access for employees and passengers to BTS stations. After flooding in 2011, there has been continuous investments on barriers and capacity building in regard to flood responses, which have been undertaken by relevant employees.</p>

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Access to capital	<p>Climate-related risks and opportunities have influenced BTS financial planning by providing access to capital. Green Bonds & Green Finance: Assess and report green impacts of BTS Group green bonds and identify other potential green/ sustainability-linked financial instruments applicable for BTS Group for increased share of green financing.</p> <p>Case study</p> <p>BTS's 2019 green bond was the first Thai green bond offered to institutional and high-net-worth investors, and the largest and longest tenor green bond offered in Thailand. BTS plans to issue a green bond every year as an option for investors to finance public transport projects. It will be a new option to optimize the company's financial infrastructure in addition to short and medium-term bank financing. The green bond in 2019 was issued for THB 13,000mn, which was higher than the planned THB 5,000mn at 8 times oversubscription. The second green bond in 2020 issuing was for THB 8,600mn, which was higher than the planned THB 5,000mn at 3.3 times oversubscription.</p> <p>Seeing the success of BTS Group's past two Green Bonds, BTSC, our subsidiary, followed suit with a THB 10,200mn issuance of their own Green Bond in November 2021. As expected, BTSC's Green Bond was keenly received where an oversubscription of 2x was registered. BTS also issued two Sustainability Linked Bonds (SLB) in 2022. The SLBs covered BTSG's train fleet and amounted to THB 31,000mn. The two main KPIs for these SLBs are energy efficiency improvement and renewable energy use for Green Line.</p>

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	Yes, we identify alignment with a sustainable finance taxonomy	At the company level only

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's climate transition.

Financial Metric

Revenue/Turnover

Type of alignment being reported for this financial metric

Alignment with a sustainable finance taxonomy

Taxonomy under which information is being reported

EU Taxonomy for Sustainable Activities

Objective under which alignment is being reported

Climate change mitigation

Amount of selected financial metric that is aligned in the reporting year (unit currency as selected in C0.4)

12289000000

Percentage share of selected financial metric aligned in the reporting year (%)

68

Percentage share of selected financial metric planned to align in 2025 (%)

68

Percentage share of selected financial metric planned to align in 2030 (%)

68

Describe the methodology used to identify spending/revenue that is aligned

The revenue from MOVE business is aligned with EU taxonomy which is Urban and suburban transport, road passenger transport.

C3.5c

(C3.5c) Provide any additional contextual and/or verification/assurance information relevant to your organization's taxonomy alignment.

Not applicable

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

Is this a science-based target?

Yes, we consider this a science-based target, but we have not committed to seek validation of this target by the Science Based Targets initiative within the next two years

Target ambition

Other, please specify (Thailand NDC.)

Year target was set

2021

Target coverage

Business activity

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Base year

2019

Base year Scope 1 emissions covered by target (metric tons CO2e)

744

Base year Scope 2 emissions covered by target (metric tons CO2e)

77276

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)

<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

78020

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

97

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

97

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)

<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

97

Target year

2030

Targeted reduction from base year (%)

9.66

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

70483.268

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

5681

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

71876

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

77557

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

6.1432461708868

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The target covers BTS Group or our mass transport railway operations.

Plan for achieving target, and progress made to the end of the reporting year

Going into FY 2022/23 with our long-term climate strategy as a sustainability compass, BTS Group continued to preserve its carbon neutral status through the continuance of our environmental-focused initiatives including operational energy efficiency solutions and having at least 10% of electricity consumption from renewable sources. Our efforts to decarbonise our operations has led the Company to register a reduction of 10,300 tonnes of carbon dioxide equivalent, representing a 13% reduction in Scope 2 emissions within this year. Going further, a feasibility study is currently underway for the installation of solar rooftops for the Yellow and Pink line depots. Regardless, the openings of our Yellow and Pink lines, set to open within 2023 and the first half of 2024 respectively, are expected to be catalysts behind the expansion of the country's urban mobility and accessibility for sustainable socio-economic development.

Our FY 2022/23 total GHG emission target Scope 1 and 2 was 77,557 tCO2e. BTS Group has placed a group-wide Environmental Management Policy that covers BTS Group and its subsidiaries. BTS has set long-term Scope 1 and 2 GHG emissions reduction target 9.66% by FY2030/31 (or 70,482 absolute emission). This allows the

Group to perform environmental operations with high efficiency and effectiveness in different aspects, including: measurement, management, planning and verifying the amount of greenhouse gas emissions.

In FY 2022/23, BTS Group was able to be certified carbon neutral through a carbon credit programme with Mitr Phol's biomass power plant project (Mitr Phol Bio-Power). The Company established a long-term climate strategy to constitute our on-going efforts in reducing and offsetting our emissions. Furthermore, FY 2022/23 marks the first year for our subsidiary, VGI, to be a certified carbon neutral company, through operational efficiency activities and a carbon credit programme.

BTS Group's procurement of RECs to increase the utilisation of renewable energy to cover 13% of our total electricity consumption subsequently reduces the Company's greenhouse gas emissions, thus contributing to the growth of renewable energy within the Thai market.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Target(s) to increase low-carbon energy consumption or production

Other climate-related target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2021

Target coverage

Company-wide

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Base year

2020

Consumption or production of selected energy carrier in base year (MWh)

0

% share of low-carbon or renewable energy in base year

0

Target year

2023

% share of low-carbon or renewable energy in target year

10

% share of low-carbon or renewable energy in reporting year

13

% of target achieved relative to base year [auto-calculated]

130

Target status in reporting year

Achieved

Is this target part of an emissions target?

No, this is not part of an emissions target

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target covers BTS Sky Train and VGI Group of business operation, including Bus Rapid Transit and Gold Line project, station media, LCD screens, and VGI head office operations.

Plan for achieving target, and progress made to the end of the reporting year

<Not Applicable>

List the actions which contributed most to achieving this target

In FY2022/2023, BTS Group has successfully carried out its procurement of Renewable Energy Certificates (REC) to claim 13% of total electricity consumption (equivalent to 20,600 MWh) from renewable energy sources. The procurement of RECs is a joint initiative between BTS Group and Mitr Phol Bio-Power Co. Ltd. (Mitr Phol Bio-power), which utilises biomass energy. Our increase in the utilization of renewable energy, through the procurement of RECs, subsequently reduces our GHG emissions and contributes to the growth of renewable energy within the Thai market.

In addition to REC procurement, BTS Group is exploring the feasibility of utilising renewable energy directly into the operations of the Company through a joint venture. The project involves installing solar PVs on the rooftops of the Pink and Yellow Lines depots and Park and Ride stations, which will increase the renewable energy consumption of the Company.

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2021

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency	kWh
----------------------------------	-----

Target denominator (intensity targets only)

Other, please specify (Day)

Base year

2021

Figure or percentage in base year

85342

Target year

2022

Figure or percentage in target year

94000

Figure or percentage in reporting year

85694

% of target achieved relative to base year [auto-calculated]

4.06560406560407

Target status in reporting year

Achieved

Is this target part of an emissions target?

No, this target is not part of an emissions target.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target covers BTS Sky Train operation including non-traction power and energy at station.

Plan for achieving target, and progress made to the end of the reporting year

<Not Applicable>

List the actions which contributed most to achieving this target

To evaluate our energy efficiency management system, BTSC monitors operations' traction and non-traction power energy consumption indicators and electrical consumption indicators in buildings by using a systematic data collection and analysis of irregularities process in energy consumption. Report findings are delivered to the Operation Performance

Committee Meeting on a monthly basis. The Company has also conducted a technical analysis using the "Marginal Abatement Cost" framework to better understand different investment scenarios.

To ensure that operations align with the determined target for energy conservation, BTS Group has established a working committee to focus on energy-related issues since FY 2014/15. The committee has been responsible for establishing the level of energy conservation and energy efficiency policies, evaluating energy conservation capacity, determining goals and conservation plans, as well as auditing and analysing operations to ensure goals and plans are met. The committee has also been responsible for reviewing, analysing and addressing of inaccuracies related to energy management with the Chief Executive Officer of the BTSC serving as head of the committee. Internal meetings are held every three months, with an external third party carrying out an audit and certifying the results for submission to the Department of Alternative Energy Development and Efficiency, in March of each year.

Target reference number

Oth 2

Year target was set

2021

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Waste management	metric tons of waste generated
------------------	--------------------------------

Target denominator (intensity targets only)

<Not Applicable>

Base year

2021

Figure or percentage in base year

564.45

Target year

2022

Figure or percentage in target year

788

Figure or percentage in reporting year

728.07

% of target achieved relative to base year [auto-calculated]

73.1916797137106

Target status in reporting year

Achieved

Is this target part of an emissions target?

No, this target is not part of an emissions target.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The target covers waste generated from BTS Sky Train operation including stations.

Plan for achieving target, and progress made to the end of the reporting year

<Not Applicable>

List the actions which contributed most to achieving this target

A commitment to reducing waste is a key point in BTS Group's group-wide Environmental Management Policy. Several waste management initiatives have been put in place in order to ensure sustainable national socio-economic growth and well-being.

In 2022, BTS Group also joined Care the Bear project that was initiated by the Stock Exchange of Thailand. The objective of this project is for the public, private business partners and social enterprises to cooperate in lowering greenhouse gas emissions through event organisation. To help reduce climate change, the project campaigns on behaviour changes in six dimensions: commuting on sky trains or public transport, reducing the use of paper and plastics, banning foam containers, reducing power consumption, using decorative items made from reusable materials for events organised, and serving oneself food in the amount one can finish to reduce food waste.

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 initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	1	6890
Implementation commenced*	0	0
Implemented*	2	13705.69
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Transportation	Company fleet vehicle efficiency
----------------	----------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

3407.75

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

31616622

Investment required (unit currency – as specified in C0.4)

8108431356

Payback period

16-20 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Low-carbon energy consumption	Solid biofuels
-------------------------------	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

10297.94

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

618000

Payback period

No payback

Estimated lifetime of the initiative

1-2 years

Comment

In FY2022/2023, BTS Group has successfully carried out its procurement of Renewable Energy Certificates (REC) to claim 13% of total electricity consumption (equivalent to 20,600 MWh) from renewable energy sources. The procurement of RECs is a joint initiative between BTS Group and Mitr Phol Bio-Power Co. Ltd. (Mitr Phol Bio-power), which utilises biomass energy. Our increase in the utilization of renewable energy, through the procurement of RECs, subsequently reduces our GHG emissions and contributes to the growth of renewable energy within the Thai market.

C4.3c

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

Method	Comment
Employee engagement	BTS offices and stations are reducing energy consumption of our own operations. This includes changing the lighting from fluorescent to LED light bulbs in both the office and BTS stations, changing air-conditioning to reduce the use of R-22 refrigerants (approximately 25-30 units every year), and asking for cooperation from employees to save energy by keeping the air-conditioning temperature at 25°C, turning of lights after use, and using stairs instead of elevators.
Internal incentives/recognition programs	The Spirit Programme (Nu Duan Chuan Ka Yan) is a project intended to reward all employees at BTS Group and its subsidiaries for good corporate behaviour such as energy savings. All full time employees which includes CEO, Other name executives, Business Unit Managers, Employees are eligible. The Spirit Club Programme awards employees 100 points per year for showing good behaviour in reducing electricity consumption contributing to the overall Energy Reduction. One of the options in which employees can exchange for rewards is exchanging points for cash in which employees that have accumulated points from various criteria to at least 3000 points can exchange for cash at THB 500. Points earned may be used in exchange, according to the level of points, for rewards of monetary value or educational funding for their children, with a maximum exchange limit of 3 times per person. Optionally, points may also be exchanged for 1-year fitness memberships or products and services offered by BTS Group Holdings PCL and its subsidiary companies.
Partnering with governments on technology development	BTS Group collaborated with TGO to develop a greenhouse gas mitigation mechanism with the Thailand Voluntary Emission Reduction Programme (T-VER). This methodology is called "Modal Shift in Passenger Transportation by Rail-based Mass Rapid Transit". The method enables an organisation to record the amount of greenhouse gas emissions reduced from commuters shifting modes to mass transit from other modes of transport, such as taxis or buses.
Other (Budget for renewable energy)	BTS Group is planning to incorporate the utilization of renewable energy directly into its operations. We are starting to achieve this through our consideration of the potential for installing solar rooftops for new mass transit rail lines. This will contribute to increasing our overall utilization of renewable energy and subsequently reduce our GHG emissions as well as contribute to the growth of renewable energy within the Thai market.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Low-Carbon Investment (LCI) Registry Taxonomy

Type of product(s) or service(s)

Rail	Other, please specify (Mass transport Electric rail)
------	--

Description of product(s) or service(s)

BTS mass transit electric train services

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Estimating and Reporting the Comparative Emissions Impacts of Products (WRI)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Gate-to-gate

Functional unit used

Year

Reference product/service or baseline scenario used

Road transport

Life cycle stage(s) covered for the reference product/service or baseline scenario

Gate-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

82608.7

Explain your calculation of avoided emissions, including any assumptions

Avoided emissions calculated by comparing equivalent emissions from car transport with BTS train transport and from increased public access to low-carbon transportation (BTS SkyTrain). Since 1999 (23 years), BTS Group has enabled the avoidance of 1.9 million tonnes CO2 equivalent, averaging to 82,608.7 tonnes CO2e per year.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

68

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Low-Carbon Investment (LCI) Registry Taxonomy

Type of product(s) or service(s)

Other	Other, please specify (Parking service connected to mass transport rail)
-------	--

Description of product(s) or service(s)

Park and Ride as commuters are able to park their private vehicles at the Mo Chit BTS station (current terminal station) and can take the BTS to work, school, and other places. This will contribute to avoided emissions as travel via private vehicles is lessened and since mass transit has far less overall emissions intensity in comparison with private vehicles.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Estimating and Reporting the Comparative Emissions Impacts of Products (WRI)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Gate-to-gate

Functional unit used

passenger-km

Reference product/service or baseline scenario used

Private passenger car use for entire trip

Life cycle stage(s) covered for the reference product/service or baseline scenario

Gate-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

1601

Explain your calculation of avoided emissions, including any assumptions

Number of park and ride users is 4,000 per day. Roughly half of these users use BTS, i.e. 2,000 BTS passengers using park and ride per day. We calculated % revenue of these passengers as a total of daily revenue. We estimated avoided emissions by using Bangkok data that average commute by car is 24.71km. We estimated that most park and ride users would at most travel 10 km to park. The remaining distance would be travelled by BTS, lowering the emissions. We used the emission factor tCO2e/p-km for cars and for BTS and compared the emissions. We found that a round trip using park and ride avoided 4.4tCO2e, amounting to annual avoidance of 1,601 tCO2e per passenger-km.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.21

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

Yes, other structural change, please specify (Change in boundary)

Name of organization(s) acquired, divested from, or merged with

VGI

Details of structural change(s), including completion dates

In FY2022/2023, our boundary was expanded to include VGI.

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in boundary	In FY2020/2021, our Scope 3 boundary covers the water consumption of BTS buildings and stations, including bus rapid transport, and the electricity consumption for station tenants. In FY2021/2022, our Scope 3 boundary was expanded to include the purchase of BTS Green Line trains which was deemed significant and material to the Company. In FY2022/2023, our boundary was expanded to include VGI, leading to changes in our reported figures.

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	Yes	Scope 1 Scope 2, location-based Scope 2, market-based Scope 3	In FY2021/2022, the purchase of BTS Green Line trains did not affect baseline calculations from FY2019/2020. However, in FY2022/2023, VGI Public Company Limited (VGI) was added to our reporting scope. Thus, all environmental data from previous years have been restated.	Yes

C5.2

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

Scope 1

Base year start

April 1 2019

Base year end

March 31 2020

Base year emissions (metric tons CO2e)

744

Comment

Scope 2 (location-based)

Base year start

April 1 2019

Base year end

March 31 2020

Base year emissions (metric tons CO2e)

77276

Comment

Scope 2 (market-based)

Base year start

April 1 2019

Base year end

March 31 2020

Base year emissions (metric tons CO2e)

77276

Comment

Scope 3 category 1: Purchased goods and services

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

400.79

Comment

Fibre nickel cadmium batteries and wheels are our major purchased goods. Wheel: 163,490.00 kg 163.49 ton Battery: 3,052.00 kg 3.052 ton

Scope 3 category 2: Capital goods

Base year start

April 1 2021

Base year end

March 31 2022

Base year emissions (metric tons CO2e)

68325

Comment

Construction of new capital goods and purchase of capital goods emissions are calculated using the Scope 3 Evaluator.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

17070.26

Comment

The primary source of emissions for BTS group is from purchased electricity. Our scope 3 emissions from electricity are primarily from transmission losses in the transmission and distribution system.

Scope 3 category 4: Upstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 5: Waste generated in operations

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

45.22

Comment

Although waste emissions were minor, we are able to calculate it from our eco-efficiency data.

Scope 3 category 6: Business travel

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

2.79

Comment

Plane emissions are calculated from passenger-km and average emission factor.

Scope 3 category 7: Employee commuting

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

5109.28

Comment

A survey was sent to all employees that asked for their distance to work, main mode of travel, and number of working days per week. This is multiplied by the emission factor of each respective mode of travel to get the emissions for this category.

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

49702

Comment

Passenger commute to/from BTS stations. Ridership data is multiplied with average emissions factor.

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

2367.4

Comment

Tenants electricity consumption is multiplied by TGO emission factor.

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

April 1 2022

Base year end

March 31 2023

Base year emissions (metric tons CO2e)

174.48

Comment

Emissions factor is based on investment allotment of VGI (VGI's investee).

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

ISO 14064-1

Thailand Greenhouse Gas Management Organization: The National Guideline Carbon Footprint for organization

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

The Greenhouse Gas Protocol: Scope 2 Guidance

The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

5681

Start date

April 1 2022

End date

March 31 2023

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

3500

Start date

April 1 2021

End date

March 31 2022

Comment

The data used to calculate direct greenhouse gas emissions (Scope 1) covers the fuel consumption of BTS buildings and cars, Bus Rapid Transit and the refrigerant for the air conditioners in the building and trains.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

3585

Start date

April 1 2020

End date

March 31 2021

Comment

The data used for calculation of Direct GHG Emission (Scope 1) covers the fuel consumption in BTS Buildings and cars; the refrigerant for the air conditioners in the building and trains, not including the fuel consumption for Bus Rapid Transit (BRT).

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

744

Start date

April 1 2019

End date

March 31 2020

Comment

The data used for calculation of Direct GHG Emission (Scope 1) covers the fuel consumption in BTS Buildings and cars, not including the fuel consumption for Bus Rapid Transit (BRT)

Past year 4

Gross global Scope 1 emissions (metric tons CO2e)

1227

Start date

April 1 2018

End date

March 31 2019

Comment

The data used for calculation of Direct GHG Emission (Scope 1) covers the fuel consumption in BTS Buildings and cars, not including the fuel consumption for Bus Rapid Transit (BRT).

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 are reporting a Scope 2, market-based figure

Comment

BTS Group purchases electricity directly from the grid and purchases RECs.

The procurement of RECs is a joint initiative between BTS Group and Mitr Phol Bio-Power Co. Ltd. (Mitr Phol Bio-power), which utilises biomass energy. Our increase in the utilization of renewable energy, through the procurement of RECs, subsequently reduces our GHG emissions and contributes to the growth of renewable energy within the Thai market.

C6.3

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

Reporting year

Scope 2, location-based

82174

Scope 2, market-based (if applicable)

71876

Start date

April 1 2022

End date

March 31 2023

Comment

BTS Group has continued purchasing RECs in FY2022/2023.

Past year 1

Scope 2, location-based

75481

Scope 2, market-based (if applicable)

68139

Start date

April 1 2021

End date

March 31 2022

Comment

BTS Group started purchasing RECs in FY2021/2022.

Past year 2

Scope 2, location-based

69137

Scope 2, market-based (if applicable)

69137

Start date

April 1 2020

End date

March 31 2021

Comment

Past year 3

Scope 2, location-based

77276

Scope 2, market-based (if applicable)

77276

Start date

April 1 2019

End date

March 31 2020

Comment

Past year 4

Scope 2, location-based

62752

Scope 2, market-based (if applicable)

62752

Start date

April 1 2018

End date

March 31 2019

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**Purchased goods and services****Evaluation status**

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

400.79

Emissions calculation methodology

Hybrid method

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

100

Please explain

Water withdrawal, passenger ticket production and paper consumption emissions are calculated using raw data collection and TGO (Thailand Greenhouse Gas Management Organization) emission factors. Purchased stationary, purchased spare parts and maintenance materials emissions are calculated web-based tool from Greenhouse Gas Protocol and Quantis. Contractor commute emissions are calculated using the number of people multiplied by average emissions.

Capital goods**Evaluation status**

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

820.27

Emissions calculation methodology

Spend-based method

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

100

Please explain

Construction of new capital goods and purchase of capital goods emissions are calculated using web-based tool from Greenhouse Gas Protocol and Quantis. In order to estimate Category 2 emissions, the basic price in USD purchasing quantity is multiplied with the average emission factor.

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

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

17070.26

Emissions calculation methodology

Average data method

Other, please specify (Emissions from fuels, fuel from electricity production and electricity loss from transmission are calculated using raw data collection and TGO emission factors.)

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

100

Please explain

The primary source of emissions for BTS group is from purchased electricity. Our scope 3 emissions from electricity are primarily from transmission losses in the transmission and distribution system.

Upstream transportation and distribution**Evaluation status**

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Please select

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

100

Please explain

Upstream transportation accounts for a small percentage of our Scope 3 emissions, we made a preliminary estimate, and the emissions were not a significant portion, therefore we are reporting as zero here.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

45.22

Emissions calculation methodology

Waste-type-specific method

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

100

Please explain

Emissions from hazardous waste, non-hazardous waste, and transportation of waste are calculated from raw data collection and TGO emission factors..

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

2.79

Emissions calculation methodology

Distance-based method

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

100

Please explain

Plane emissions are calculated from passenger-km and average emission factor. The emission factor used to calculate Category 6 emissions is sourced from the UK Government DEFRA GHG Conversion Factors. This emission factor is multiplied with the activity data to accurately determine the emissions in this category.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5109.28

Emissions calculation methodology

Distance-based method

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

100

Please explain

A survey was sent to all employees that asked for their distance to work, main mode of travel, and number of working days per week. This is multiplied by the emission factor of each respective mode of travel to get the emissions for this category. The emission factor is sourced from the UK Government DEFRA GHG Conversion Factors and TGO emission factors.

Upstream leased assets

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have any upstream leased assets.)

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

100

Please explain

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

49702

Emissions calculation methodology

Average data method

Other, please specify (Passenger commute to/from BTS stations. Ridership data is multiplied with average emissions factor. The emission factor is sourced from the UK Government DEFRA GHG Conversion Factors and TGO emission factors.)

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

100

Please explain

Processing of sold products

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have sold products, there is no emissions from processing of sold goods. Therefore, the related emissions is 0 tCO2e.)

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

100

Please explain

Use of sold products

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have sold products, there is no emissions from use of sold products. Therefore, the related emissions is 0 tCO2e.)

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

100

Please explain

End of life treatment of sold products

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have sold products, and therefore no emissions from end of life treatment of sold products. Therefore, the related emissions is 0 tCO2e.)

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

100

Please explain

Downstream leased assets

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2367.4

Emissions calculation methodology

Average data method

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

100

Please explain

Tenants electricity consumption is multiplied by TGO emission factor.

Franchises

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have franchises and therefore does not have emissions from franchises. Therefore, the related emissions is 0 tCO2e.)

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

100

Please explain

Investments

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

174.48

Emissions calculation methodology

Other, please specify (Emissions factor is based on investment allotment of VGI i.e. Emissions from VGI's investees.)

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

100

Please explain

Other (upstream)

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have emissions from other upstream activities. Therefore, the related emissions is 0 tCO2e.)

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

100

Please explain

We have no activity for this category.

Other (downstream)

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

Emissions calculation methodology

Other, please specify (BTS Group does not have emissions from other downstream activities. Therefore, the related emissions is 0 tCO2e.)

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

100

Please explain

We have no activity for this category.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

April 1 2021

End date

March 31 2022

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

68325

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.7

(C6.7) Are carbon dioxide emissions from biogenic 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

0.0000321

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

77557

Metric denominator

unit total revenue

Metric denominator: Unit total

2413900000

Scope 2 figure used

Market-based

% change from previous year

44.08

Direction of change

Increased

Reason(s) for change

Change in renewable energy consumption

Change in output

Change in revenue

Please explain

In this reporting, there was a 11.52% increase in our Scope 1 and Scope 2 emissions, from 69,566 tons CO2e in FY2021/2022 to 77,557 tons CO2e in FY2022/2023. Meanwhile, our total revenue decreased from THB 31,195mn in FY2021/2022 to THB 24,139mn in FY2022/2023, or by 22.62%. As a result, the intensity metric increased by 44.08%. However, BTS has purchased renewable energy certificates (RECs) 20,600 MWh in FY2022/2023, which was 23.85% increase compared to 15,688 MWh of RECs purchased in FY2021/2022.

C-TS6.15

(C-TS6.15) What are your primary intensity (activity-based) metrics that are appropriate to your emissions from transport activities in Scope 1, 2, and 3?

Rail

Scopes used for calculation of intensities

Report Scope 1 + 2

Intensity figure

0.0000422

Metric numerator: emissions in metric tons CO2e

77557

Metric denominator: unit

p.km

Metric denominator: unit total

1836733717

% change from previous year

-45.12

Please explain any exclusions in your coverage of transport emissions in selected category, and reasons for change in emissions intensity.

Following Thailand's economic recovery from COVID-19, there was demand for more frequent trains as passenger numbers started to return to the pre-pandemic era. Our emissions (sum of Scope 1 and Scope 2 – market based) were increased from 69,566 in FY2021/22 to 77,557 in FY2022/23 while passenger per km was increased from 904,047,134.51 in FY2021/22 to 1,836,733,716.92 in FY2022/23. This led to a decrease in intensity of approximately 45.12% from FY2021/22 to FY2022/23.

ALL

Scopes used for calculation of intensities

Report Scope 1 + 2

Intensity figure

0.0000422

Metric numerator: emissions in metric tons CO2e

77557

Metric denominator: unit

p.km

Metric denominator: unit total

1836733717

% change from previous year

-45.12

Please explain any exclusions in your coverage of transport emissions in selected category, and reasons for change in emissions intensity.

Following Thailand's economic recovery from COVID-19, there was demand for more frequent trains as passenger numbers started to return to the pre-pandemic era. Our emissions (sum of Scope 1 and Scope 2 – market based) were increased from 69,566 in FY2021/22 to 77,557 in FY2022/23 while passenger per km was increased from 904,047,134.51 in FY2021/22 to 1,836,733,716.92 in FY2022/23. This led to a decrease in intensity of approximately 45.12% from FY2021/22 to FY2022/23.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

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	2269.12	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	452.76	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	40.35	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	2918.42	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/area/region	Scope 1 emissions (metric tons CO2e)
Thailand	5681

C7.3

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

By activity

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Rail mass transit (BTSC)	5681

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 activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
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 (midstream)	<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	5681	<Not Applicable>	The data used to calculate direct greenhouse gas emissions (Scope 1) covers the fuel consumption of BTS buildings and cars, Bus Rapid Transit and the refrigerant for the air conditioners in the building and trains.

C7.5

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

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Thailand	82174	71876

C7.6

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

By activity

C7.6c

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Rail mass transit (BTSC)	82174	71876

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

Yes

C7.7a

(C7.7a) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

Subsidiary name

VGI Public Company Limited

Primary activity

Media

Select the unique identifier(s) you are able to provide for this subsidiary

ISIN code - equity

ISIN code – bond

<Not Applicable>

ISIN code – equity

TH3740010Y09

CUSIP number

<Not Applicable>

Ticker symbol

<Not Applicable>

SEDOL code

<Not Applicable>

LEI number

<Not Applicable>

Other unique identifier

<Not Applicable>

Scope 1 emissions (metric tons CO2e)

115.33

Scope 2, location-based emissions (metric tons CO2e)

1976.33

Scope 2, market-based emissions (metric tons CO2e)

1376.33

Comment

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization’s total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), 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>
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 (midstream)	<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	82174	71876	

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?

Increased

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 in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	2455.51	Decreased	3.43	BTS has purchased RECs amounting to 20,600 MWh in FY2022/2023 compared 15,688 in FY2021/2022, resulting in 4,912 MWh of renewable energy increased. Using the emission factor provided by the Journal of Thailand Greenhouse Gas Management Organisation published in April 2022 of 0.4999 tCO2e/MWh, the change in emissions is $0.4999 \times 4,912 = 2,455.51$ tCO2e. In FY2021/2022, Scope 1+2 emissions were 71,639 tCO2e. Therefore, the emissions value (%) is $2,455.51/71,639 = 3.43\%$.
Other emissions reduction activities	0	No change	0	
Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	8373.51	Increased	11.69	In line with the rapid recovery of Thailand's economy post COVID-19, the use of public transportation also quickly resumed. Electric consumption of traction increased by 12.74%, from 96,769,000 kWh in FY2021/22 to 109,102,000 kWh in FY2022/23. Electricity consumption of non-traction also increased from 53,071 to 55,278 MWh or 4.16% increase. Total fuel consumptions were also slightly increased from both buildings and company cars. As results, total scope 1 and 2 (location based) was increased by 8,373.51 tCO2e. In FY2021/2022, Scope 1+2 emissions were 71,639 tCO2e. Therefore, the emissions value (%) is $8,373.51/71,639 = 11.69\%$.
Change in methodology	0	No change	0	
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

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?

Market-based

C8. Energy

C8.1

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

More than 0% but less than or equal to 5%

C8.2

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

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

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 (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	12024	12024
Consumption of purchased or acquired electricity	<Not Applicable>	20600	143780	164380
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
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>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	20600	155804	176404

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	No
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

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

Sustainable biomass

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Other biomass

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Oil

Heating value

LHV

Total fuel MWh consumed by the organization

1678.01

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Gas

Heating value

LHV

Total fuel MWh consumed by the organization

10345.99

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

12024

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

C8.2e

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

Country/area of low-carbon energy consumption

Thailand

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Other biomass

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

20600

Tracking instrument used

I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

Thailand

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2006

Comment

C-TS8.2f

(C-TS8.2f) Provide details on the average emission factor used for all transport movements per mode that directly source energy from the grid.

Category	Emission factor unit	Average emission factor: unit value	Comment
Rail	gCO2e/kWh	499	Or 499 gCO2e/kWh

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area

Thailand

Consumption of purchased electricity (MWh)

164380

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

164380

C-TS8.5

(C-TS8.5) Provide any efficiency metrics that are appropriate for your organization's transport products and/or services.

Activity

Rail

Metric figure

0.0594

Metric numerator

Other, please specify (KWh)

Metric denominator

p.km

Metric numerator: Unit total

109102000

Metric denominator: Unit total

1836733716.92

% change from last year

-44.51

Please explain

In line with the rapid recovery of Thailand's economy post COVID-19, the use of public transportation also quickly resumed. The passenger per km increased from 904,045,216.74 in FY2021/2022 to 1,836,733,716.92 in FY2022/23 or by 103.17%, while electric consumption of traction increased by 12.74%, from 96,769,000 kWh in FY2021/22 to 109,102,000 kWh in FY2022/23. As a result, the energy intensity of BTS's Sky Train was reduced around 44.51%.

C9. Additional metrics

C9.1

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

Description

Energy usage

Metric value

2.33

Metric numerator

kWh

Metric denominator (intensity metric only)

car-km

% change from previous year

2.64

Direction of change

Increased

Please explain

Additional metric is total electricity consumption per distance car-km. In FY2021/22, energy intensity was 2.27 kWh/car-km, and increased to 2.33 kWh/car-km in FY2022/23. Thus, there was 2.64% increased $[(2.33 - 2.27)/2.27] * 100 = 2.64\%$.

C-TO9.3/C-TS9.3

(C-TO9.3/C-TS9.3) Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.

Activity

Rail

Metric

Fleet adoption

Technology

Other, please specify (Use of Electrified trains)

Metric figure

100

Metric unit

Other, please specify (% of fleet)

Explanation

BTS Sky Train are all electrified trains.

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	No	

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	Third-party verification or assurance process in place

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

sd-report202223-en.pdf

Page/ section reference

PDF p.116 (Doc p.115)

Relevant standard

AA1000AS

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

sd-report202223-en.pdf

Page/ section reference

PDF p.116 (Doc p.115)

Relevant standard

AA1000AS

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Business travel
Scope 3: Upstream leased assets
Scope 3: Investments

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

sd-report202223-en.pdf

Page/section reference

PDF p.116 (Doc p.115)

Relevant standard

AA1000AS

Proportion of reported emissions verified (%)

23.32

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
C8. Energy	Energy consumption	AA1000AS	<ul style="list-style-type: none">Energy consumption within the organization and intensity (GRI 302-1)Renewable Energy Certificates (RECs) purchased cover 10% of total electricity consumed on the BTSC green line (non GRI)

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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)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

BTS Group in collaboration with Thailand Greenhouse Gas Management Organisation (TGO) has developed carbon trading methodology for transport sector to prepare for future regulatory carbon market. The preparation would build capacity and improve our resilience from regulatory risk.

Thailand is considering implementation of carbon market (Tax and/or Cap and Trade). As of 2022, Thailand is undergoing study phase for carbon market. We anticipate regulated carbon market in Thailand is likely to be in place by year 2024 or soon after.

BTS has identified green investment and financing to be a climate risk. BTS addresses climate risks through several priority actions, with one of them being the development of BTS Group Internal Carbon Pricing (ICP) approach, pilot and roll out across BTS investment decisions.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits canceled by your organization in the reporting year.

Project type

Biomass energy

Type of mitigation activity

Emissions reduction

Project description

Mitr Phol Biopower (Biomass powerplant project)

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

87855

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2015

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

T-COP (Thailand Carbon Offsetting Program)

Method(s) the program uses to assess additionality for this project

Investment analysis

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Potential sources of leakage the selected program requires this project to have assessed

Not assessed

Provide details of other issues the selected program requires projects to address

The biomass project reduces emissions by producing thermal energy from renewable energy sources (bagasse) instead of from natural gas. The bagasse is collected from farmers who would have otherwise burned the bagasse, avoiding pollution.

Comment

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.

Type of internal carbon price

Implicit price

How the price is determined

Price/cost of voluntary carbon offset credits

Objective(s) for implementing this internal carbon price

Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Identify and seize low-carbon opportunities
Navigate GHG regulations
Stakeholder expectations
Stress test investments
Other, please specify (Supplier engagement)

Scope(s) covered

Scope 2

Pricing approach used – spatial variance

Uniform

Pricing approach used – temporal variance

Static

Indicate how you expect the price to change over time

<Not Applicable>

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)

4742

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)

4742

Business decision-making processes this internal carbon price is applied to

Capital expenditure
Opportunity management

Mandatory enforcement of this internal carbon price within these business decision-making processes

No

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan

In order to maintain carbon neutrality, we established a carbon price to ensure a standard price for green investments. This price is currently being used for all capital investments related to carbon reduction. This has driven our investment on low-carbon project such as Solar PV installation (Going further, a feasibility study is currently underway for the installation of solar rooftops for the Yellow and Pink line depots. currently a feasibility study is underway).

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers/clients

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Facilitate adoption of a unified climate transition approach with suppliers

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

BTS Group establishes supply chain strategy where our objective is not only to improve the company profitability but also to promote sustainability awareness for our suppliers that in turn will build customers' trust. This strategy is based on the BTS Group Purchasing Policy and cascades down to separate principles which best represents the Company's management of the Supply Chain. We provide sustainable supply chain training to our procurement officers to ensure they can effectively perform their daily tasks with a good understanding of ESG objectives. In addition, purchasing practices are regularly reviewed to avoid potential conflicts with our ESG requirements which are outlined in the Supplier Code of Business Conduct.

BTS Group and its subsidiaries disclose Supplier Codes of Business Conduct and actively urge our suppliers to show their commitment and abide with the requirements set to mitigate risks from environmental, social, economic and governance violations. The Code covers a wide-range of ESG aspects, including environmental standards, labour practices, occupational health and safety and business ethics. In terms of climate-related issues, The supplier shall take into account of the following environmental factors in their operations: a) Awareness of Greenhouse gas emissions and efficient energy consumption within their operations, b) Consumption of resources efficiently throughout their operations (including materials and water) and c) Ensuring to maintain the conditions of land promoting conservation, no impacts regarding biodiversity, and no operations leading to results deforestation of protected areas and natural habitats.

Impact of engagement, including measures of success

Measures of success and achievement

BTS has set long-term target to achieve 100% of Tier 1 suppliers that will be assessed on ESG risk criteria by FY2025/2026. BTS has achieved 100% of Tier 1 suppliers that has been assessing on ESG Risk Criteria in FY2022/2023. This is a part of BTS's Supply Chain Sustainability Assurance Programme which is applied to utilise an extensive risk management process that covers all ESG-related aspects in order to align with our risk appetite with consideration of: quality, quantity, delivery of products and services.

Impact of engagement

Of all Critical Tier 1 suppliers, 100 percent acknowledged and understood the scopes and guidelines of our business practices pursuant to relevant ESG guidelines set forth in the BTS Group Supplier Code of Conduct. All suppliers have adopt environmentally friendly management practices, good occupational health and safety, as well as going through other stages of supply chain sustainability assurance programme, in order to evaluate their ability to provide products or services that meet the BTS Group requirements and their capability to manage ESG risks.

No suppliers were found to have a tendency to create adverse effects to society, whereby BTS Group would issue a warning them to improve or decide to terminate their procurement contract. As a result the suppliers have improved their sustainability performance to meet the requirements.

Comment

C12.1b

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

Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to education customers about your climate change performance and strategy
-------------------------------	--

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

100

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

Our main customers are passengers in Bangkok and metropolitan area who need good mode of transportation as well as climate friendly. "Hop On BTS" is a special campaign under BTS Group's sustainability communication that aims to raise awareness and invite people to use our BTS SkyTrain - an environmental-friendly mode of transport. The content in the advertisement includes short wording on how BTS's SkyTrain and a passenger can impact to climate change via using our services, i.e. "One BTS's electric train can remove 750 cars". Our campaign uses messaging to convey to this group of customers that they are playing their part to help combat the climate crisis. By launching our campaign on the train body, LCD in-train, platform screens and truss, this is the most effective way in making sure that our passengers will be able to see our campaign.

Impact of engagement, including measures of success

KPI for the "Hop On BTS" campaign was set to 100% which we consider this threshold to be successful. Passenger will get awareness in terms of impacts they can create by using BTS's electric train, i.e. "One BTS's electric train can remove 750 cars". Our campaign is seen by passengers and non-passengers every day, with an estimated 17 million eyes reached per day. The PR value of our online campaign is estimated to be over THB 1.3mn.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Other, please specify (Complying with BTS Group Supplier Code of Business Conduct, completing a self-assessment questionnaire and an onsite audit.)

Description of this climate related requirement

In terms of climate-related issues, The supplier shall take into account of the following environmental factors in their operations:

- a) Awareness of Greenhouse gas emissions and efficient energy consumption within their operations,
- b) Consumption of resources efficiently throughout their operations (including materials and water)
- c) Ensuring to maintain the conditions of land promoting conservation, no impacts regarding biodiversity, and no operations leading to results.

It is vital that our significant Tier 1 suppliers must conduct their business in an ethical and morally acceptable manner. Hence, 100% of our significant Tier 1 suppliers acknowledged and understood the scopes and guidelines of our business practices, including ESG guidelines, set forth in the BTS Group Supplier Code of Conduct. Environmental consideration– an approved list of environmentally friendly products is established based on the criteria of our green procurement policy e.g., products with carbon or green labels, products manufactured by companies that are ISO 14001 certified etc.

BTSG's ESG onsite audit questionnaire includes C3 Resource Reduction section, which has questions related to the supplier's environmental performance. These performances have to meet our requirements. In our BTS Group Procurement Manual, suppliers have to meet environmental criteria. The Supplier Self Evaluation Form has an environmental section.

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

28.58

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment
First-party verification
Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

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Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

With the transportation sector accounting for 32% of Thailand's carbon emissions in 2022, being a low-carbon mode of transportation operator, BTS Group has always been aware of the significant role we play within Thailand's carbon emissions reduction goal as per the Nationally Determined Contribution (NDC). We remain committed to supporting the country's journey every step of the way through our support to the country's sustainability-related public policies. Our 3M strategy: MOVE, MIX, and MATCH, work to support Thailand's sustainable expansion towards a decarbonised economy. Since 1999, BTS Group is proud to have enabled the avoidance of more than 1.9 million tonnes CO2e within Thailand by increasing public access to low-carbon transportation in line with the goals of the Paris Agreement (Please see our Sustainability Report FY2022/23: pdf page 04 or document page 03).

BTS Group is one of member of Thailand Carbon Neutral Network (TCNN). We actively engage with the governmental sector on public policies to reduce greenhouse gas emissions. BTS Group has been invited to provide recommendations on various public policies i.e., public hearing on government policy to incentivise GHG emissions reduction.

The Company has adopted the AA 1000 Stakeholders Engagement Standard (AA1000SES) and created stakeholder participation via related units and designed processes to identify their needs and concerns through various forms of activities. Our engagement channels include case-by-case meetings with government agencies, performance and operation reports submitted to relevant government agencies based on the agency's reporting schedule, communication with government officials for better understanding of their expectations, regular participation in government agency activities and projects, engagement with regulators and governmental agencies for climate changes mitigation initiatives and climate-related framework for mass transit sector, and attendance in the meetings to acknowledge supervisory policies and guidelines.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

Co-development of Greenhouse Gas mitigation methodology for Rail-based Mass Rapid Transit Network under the Thailand Voluntary Emission Reduction Programme (TVER). The methodology is called "mass transit shift mode via mass rapid transit". It is assumed that an organisation should be able to record the amount of greenhouse gas emissions reduced from commuters shifting modes to mass transit from other modes of transport such as taxis or buses.

Category of policy, law, or regulation that may impact the climate

Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate

Climate-related reporting
Emissions – CO₂

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

Thailand

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

Together with TGO and other key rail mass transit players, we jointly initiated and developed the methodology on "Modal Shift in Passenger Transportation by Rail-based Mass Rapid Transit under TGO's T-VER in the previous year. The Company is currently in discussion with the Office of Transport and Traffic Policy and Planning (OTP) for the betterment of Thailand's mass transit network. Through this activity, the awareness of climate-related risks and opportunities increases and so does Thailand's ability to strive towards a Net-Zero economy by 2065, as pledged in the Paris Agreement.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Mandatory climate change reporting: The founding members of the Carbon Markets Club have committed to support, raise awareness and promote carbon credit trading through both the Thailand Voluntary Emission Reduction Programme (T-VER) run by the Thailand Greenhouse Gas Management (TGO) and the REC scheme run by EGAT.

Category of policy, law, or regulation that may impact the climate

Carbon pricing, taxes, and subsidies

Focus area of policy, law, or regulation that may impact the climate

Carbon offsets

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

Thailand

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

BTS Group is a member of Thailand Carbon Neutral Network (TCNN). We actively engage with the governmental sector on public policies to reduce greenhouse gas emissions. BTS Group has been invited to provide recommendations on various public policies i.e., public hearing on government policy to incentivise GHG emissions reduction.

BTS Group is one of the founding 11 members of the "Carbon Markets Club" to support carbon credit trading through the T-VER run by the TGO and REC trading scheme run by EGAT. The club aims to raise awareness of carbon trading in Thailand and to reduce greenhouse gas emissions towards a net zero society.

BTS Group, along with 10 organisations, jointly established the Carbon Markets Club to promote carbon credit trading to help reduce greenhouse gases towards a Net Zero society. The club supports carbon credit and Renewable Energy Certificate (REC) trading, setting out to develop the current over-the-counter mode of trade into a digital platform that is convenient, supports e-registration with registration and accreditation agencies, promotes e-carbon trading, and integrates Block chain trading technology. The club has been supported by the Stock Exchange of Thailand (SET), The Federation of Thai Industries (FTI) and the TGO.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

(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 voluntary sustainability report

Status

Complete

Attach the document

sd-report202223-en.pdf

Page/Section reference

Governance: PDF page 36 (doc. page 35),
 Strategy: PDF page 37 (doc. page 36),
 Risks & Opportunities: PDF page 38 – 39 (doc. page 37 - 38)
 Emissions figures: PDF page 101-102 (doc. page 100-101)
 Emissions targets: PDF page 101 (doc. page 100)

Content elements

Governance
 Strategy
 Risks & opportunities
 Emissions figures
 Emission targets

Comment

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization’s role within each framework, initiative and/or commitment
Row 1	Task Force on Climate-related Financial Disclosures (TCFD) UN Global Compact	BTS Group is a member of the UN Global Compact since 2022. We commit to strengthen Environment, Social and Governance values in our operations by aligning to internationally recognised principles in areas of labour, human rights, the environment and anti-corruption. BTS Group also became a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) in June 2021 and reports our climate actions and progress according to the framework.

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	The Sustainability Committee is responsible for establishing, reviewing, and updating the Sustainability Vision, Mission and Strategy of the Company. This includes climate-related issues and monitoring the implementation of Climate Strategy and “biodiversity-related issues” as well. In our Biodiversity Commitment, BTS Group have committed to achieve Net Positive Impact on biodiversity to priority areas by 2035. We have also committed to achieve No Net Deforestation for all operational sites within our own operations and supply chain by 2030 by compensating with future reforestation projects.	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments only	Commitment to Net Positive Gain Commitment to No Net Loss Adoption of the mitigation hierarchy approach Commitment to not explore or develop in legally designated protected areas Commitment to respect legally designated protected areas Other, please specify (To engage with stakeholders to ensure that our Biodiversity commitment has been addressed and implemented as appropriate.)	<Not Applicable>

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Direct operations

Portfolio activity

<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity

IBAT – Integrated Biodiversity Assessment Tool
Other, please specify (Key Biodiversity Areas (KBAs))

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

We used IBAT in the initial biodiversity screening for our Green and Gold Lines operation. With the support of other biodiversity assessment tools, no biodiversity risks were found within our operational sites.

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment

No, but we plan to within the next two years

Value chain stage(s) covered

<Not Applicable>

Portfolio activity

<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity

<Not Applicable>

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

<Not Applicable>

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?

No

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	No, we are not taking any actions to progress our biodiversity-related commitments, but we plan to within the next two years	<Not Applicable>

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	Please select

C15.7

(C15.7) Have you published information about your organization’s response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments	1. BTS Group Biodiversity Commitment (BTS Group Sustainability Report 2022/23 PDF pg. 52, Doc pg. 51) 2. BTS Group Biodiversity Risk Assessment Report (https://www.btsgroup.co.th/en/sustainability/relevant-policies) sd-report202223-en.pdf

C16. 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.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer, BTS Group Holdings Plc.	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

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Non-public

Please confirm below

I have read and accept the applicable Terms