

# Task Force On Climate-Related Financial Disclosures (TCFD) Report 2023



## Task Force on Climate-Related Financial Disclosures Reference Index

ComfortDelGro Corporation Limited (“ComfortDelGro”) is a leading mobility company with operations in Singapore, Australia, United Kingdom, New Zealand, China, Ireland and Malaysia<sup>1</sup>. Our comprehensive range of business offerings and transport services include bus, taxi, rail, car rental and leasing, automotive engineering services, electric charging, solar energy, inspection and testing services, driving centres, non-emergency patient transport services, insurance broking and outdoor advertising services.

We are pleased to publish our second progress report adopting the recommendations of the Task Force on Climate-related Financial Disclosures (“TCFD”). This report is compiled based on information and data from the established baseline year of 2022<sup>2</sup> as it is a best reflection of our current financial position and data.

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<b>Metrics and Targets</b> <i>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material</i>	a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	37
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<sup>1</sup> This TCFD report excludes operations in Malaysia due to the establishment of immateriality to the assessment, based on the limited scale of Malaysia operations. Malaysia as a geographical location may be considered in future TCFD reports.

<sup>2</sup> The baseline year of 2022 was used in our climate scenario analysis and TCFD report as it best represents ComfortDelGro’s current financial status and data. ComfortDelGro’s baseline year of 2019 remains for our GHG inventory as this is the most accurate year of data prior to COVID-19, and is the year from which our SBTi targets are set.

## Introduction

As a leading transport provider with operations in seven countries, 78 locations, 30,500 vehicles and over 22,000 employees, ComfortDelGro recognises the importance of understanding and managing our climate-related risks and opportunities. By doing so, we maintain trust and confidence among our stakeholders, allowing our investors, our workforce and our commuters to better comprehend the implications of climate change and how ComfortDelGro is addressing them.

As the effects of climate change become increasingly discernible, it is crucial for businesses to adapt to the climate-related risks presented to them, through the implementation of strategic and effective mitigation and adaptation strategies. This includes ensuring that our businesses and assets are resilient to climate risks and aligned to the accelerating efforts to decarbonise our economy. We recognise that taking climate risks into consideration in our strategic decisions will result in better investment decisions, protect our assets and mitigate our contribution to climate change.

In 2022, we published our inaugural TCFD Report, demonstrating our commitment to accelerating climate action. We are pleased to present our second report, ComfortDelGro's TCFD Report 2023, which provides a deeper dive into our climate scenario analysis which identifies the potential climate risks and opportunities pertinent to us.

This report aims to provide our stakeholders with deeper insights into how we consider and manage potential climate-related risks, and should be read in tandem with our [FY2022 Sustainability Report](#). This TCFD report provides a comprehensive overview of ComfortDelGro's climate-related risks and opportunities and the ways in which we address them. Our separately listed entities, SBS Transit<sup>3</sup> and VICOM Limited<sup>4</sup>, published their inaugural standalone TCFD Reports in 2023, which delve more specifically into the climate actions specific to their operations.

Through the identification of climate-related risks and opportunities, ComfortDelGro strives to strengthen our climate mitigation and adaptation measures, which currently includes our commitment to carbon reduction targets validated by the Science Based Targets Initiative ("SBTi")<sup>5</sup>, and investing in green transportation. By actively transitioning our fleet to more efficient and cleaner vehicles, we aim to significantly reduce our greenhouse gas (GHG) emissions and mitigate our contribution to climate change, with the ultimate goal to moving people and goods further and faster through cleaner options.

<sup>3</sup> Read more about SBS Transit's TCFD Report [here](#).

<sup>4</sup> Read more about VICOM Limited's TCFD Report [here](#).

<sup>5</sup> ComfortDelGro's SBTi targets were validated and approved in June 2022.

## Governance

*This section provides an outline of ComfortDelGro's governance around climate-related risks and opportunities.*

### **a) Describe the Board's oversight of climate-related risks and opportunities.**

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ComfortDelGro has established a governance framework that minimises our ESG risks and ensures opportunities are capitalised on, with the Board of Directors ("Board") taking overall responsibility in climate-related decision making. In efforts to provide the Board with necessary sustainability-related strategic insights and investment decisions, a Board-level Sustainability Committee ("SC") was established in April 2021. The SC is responsible for maintaining oversight on ComfortDelGro's sustainability ambitions, strategies and performances. ESG and climate-related risks matters are deliberated by the SC at least every quarter to ensure proper management of our climate-related goals.

ESG and climate-related risks are further communicated to the Board by the SC on a quarterly basis, which involves active discussions in the development of strategies, or policies on how ComfortDelGro can better manage any climate-related risks and opportunities.

The SC is supported by our Management Sustainability Committee, chaired at the top level by our Managing Director/ Group Chief Executive Officer ("CEO"), and comprises of senior management and CEOs of key Business Units. This Committee reviews, reports and assesses ComfortDelGro's sustainability performance against the targets established by the Board, on a quarterly basis.

ComfortDelGro's Group Chief Sustainability and Risk Officer ("GCSRO") is responsible for reporting on the progress against goals and targets for addressing climate-related issues, providing the Board and Sustainability Committee with regular reports, updates on climate-related issues and climate-related trends, as well as recommendations to address these trends.

The Board and Sustainability Committee currently consider greenhouse gas emissions, decarbonisation and climate change as sustainability focus areas, which were identified during the materiality assessment conducted in FY2022. These material topics were subsequently incorporated into our sustainability framework.

As ComfortDelGro undertakes more detailed scenario analysis and establishes projected financial implications for our Business Units, an extended integration of climate-related issues for inclusion into ComfortDelGro's strategy, performance objectives and oversight of major capital expenditures, acquisitions, and divestitures, will be investigated.

To ensure that our Board has the relevant experience and knowledge on sustainable development, all Board of Directors attended a one-time training on sustainability in 2022. The training covered the impact and implications of ESG developments on business, how companies can drive value creation through ESG, TCFD recommendations, SGX requirements on sustainability and climate-related risks reporting, as well as the Board and directors' roles and responsibilities in driving sustainability compliance and strategy.

**b) Describe management's role in assessing and managing climate-related risks and opportunities.**

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At the Group level, the management of climate-related risks and opportunities is led by the Group Sustainability Office (GSO), and designated throughout the organisation in four channels:

1. Management Sustainability Committee
2. Environmental, Social, Governance Working Groups
3. Engagement with Sustainability Representatives from various BUs
4. Trainings

The Group Sustainability Office is led by the Group Chief Sustainability and Risk Officer, Mr Jonathan Jong, who oversees all ESG related matters. He is supported by the ESG Working Groups, which assess and review ESG progress, identifying potential sustainability initiatives for implementation across the Group and its Business Units.

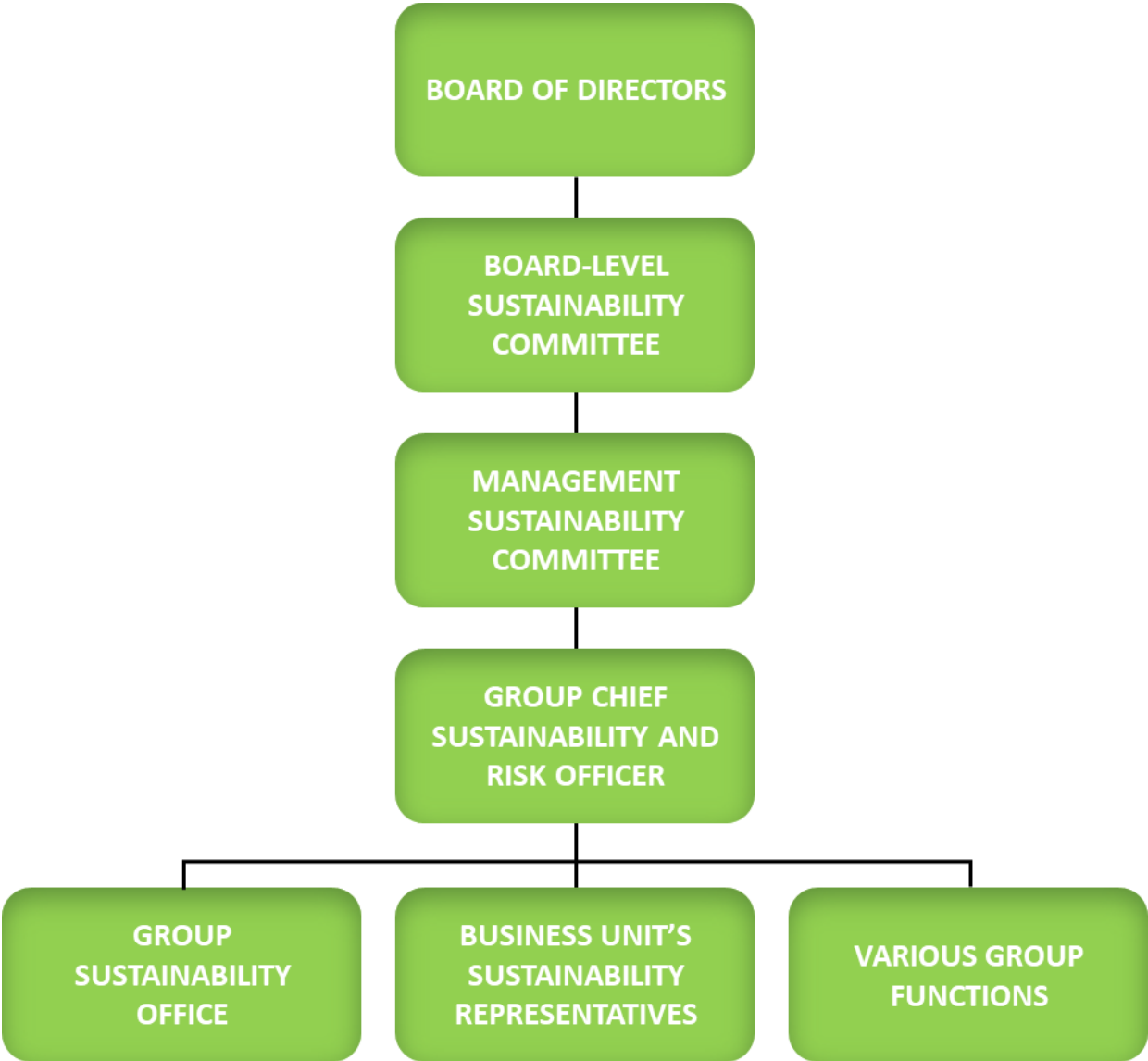
The Board works closely with senior management, and is actively involved in developing ComfortDelGro's sustainability framework, strategies, policies, ESG targets, ESG risk management and impact management frameworks, amongst other sustainability related issues. Furthermore, ESG factors have been integrated into executive compensation, driving positive ESG outcomes that benefit both shareholders and stakeholders.

Each Business Unit at ComfortDelGro's operational locations has CEOs and General Managers that manage our operations and its risks. At the management level, CEOs of the businesses attends quarterly management sustainability meetings to keep updated on the sustainability developments across the group. At the working group level, various sustainability representatives from business units have frequent meetings with Group Sustainability and Risk Office to discuss sustainability and risk matters.

As part of the risk management process, all businesses are required to refresh their risk inventories, conduct risk prioritisation exercises, identify key and emerging risks, and develop the requisite risk controls and risk treatment action plans. The identified risks, their indicators and action plans are continually reviewed and reported. Each of our major business units or country of operations has an Enterprise Risk Management (ERM) framework which follows the Group's ERM framework.

The Business Units within the Group also hold internal management meetings, to discuss key topics that are impacting their operations and business development, including climate-related issues.

Figure 1: Sustainability Governance Structure



## Strategy

*This section provides an update on the actual and potential impacts of climate-related risks and opportunities on ComfortDelGro's businesses, strategy, and financial planning where such information is material.*

### a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term

In the identification of ComfortDelGro's climate-related risks and opportunities, we have undergone a risk and opportunities screening. The table below summarises the scope and parameters of the risk and opportunity screening.

*Table 1: Scope and parameters of preliminary climate-related risks and opportunities screening*

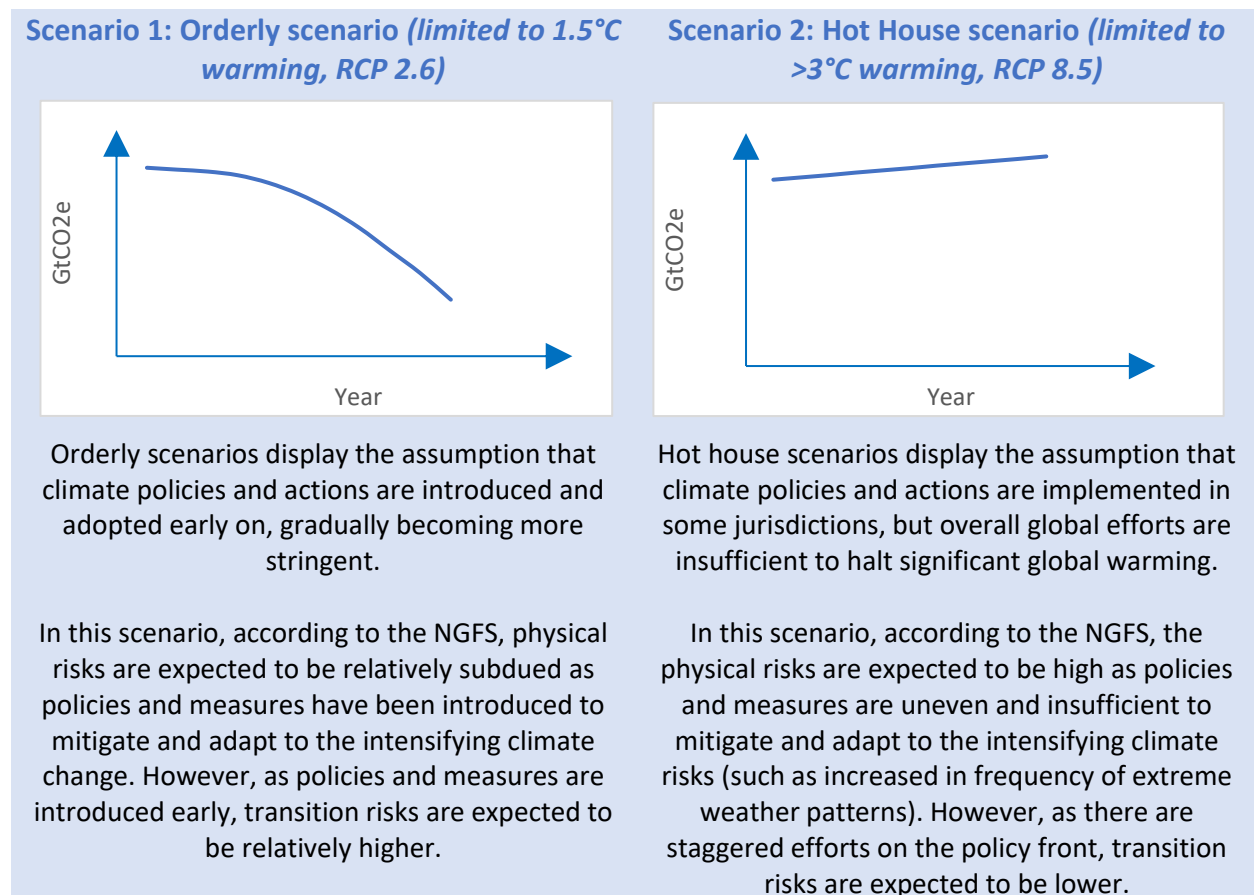
Parameters	Scope	
<b>Countries</b>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK &amp; Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	
<b>Baseline year</b>	2022	
<b>Timeframe</b>	<ul style="list-style-type: none"> <li>• Short-term: up to 2030</li> <li>• Medium-term: up to 2040</li> <li>• Long-term: up to 2050</li> </ul>	
<b>Scenarios explored</b>	<ul style="list-style-type: none"> <li>• 1.5°C warming (NGFS Net-Zero by 2050, IEA NZE 2050 &amp; RCP 2.6)</li> <li>• &gt; 3°C warming (NGFS Current Policies, IEA STEPS &amp; RCP 8.5)</li> </ul>	
<b>Key identified risks and opportunities</b>	<u>Transition risks and opportunities</u> <ul style="list-style-type: none"> <li>• Carbon pricing</li> <li>• Changing customer expectations</li> <li>• Low carbon economy transition policies &amp; regulations</li> <li>• Reputational risks</li> <li>• Technology shifts</li> </ul>	<u>Physical risks</u> <ul style="list-style-type: none"> <li>• Floods (River and flash floods)</li> <li>• Heatwaves (Rising mean temperatures)</li> <li>• Storms / Tropical Cyclones</li> <li>• Wildfires</li> <li>• Rising sea levels</li> <li>• Droughts / Water scarcity</li> </ul>

As part of the identified scope within the chosen parameters, Singapore, Australia, United Kingdom (“UK”), Ireland, China and New Zealand were selected due to the financial materiality and scale of operations for ComfortDelGro. The screening and subsequent scenario analysis was conducted based on the financial and environmental data and business-related information pertaining to 2022 as a baseline year, as it represents the latest year with a business-as-usual operations in a post COVID-19 pandemic world. With respect to the future timeframes for the scenario analysis, ComfortDelGro has chosen to align with time horizons discussed in climate science and further aligned with internal strategic considerations, namely:

- Short term: Up to 2030
- Medium term: Up to 2040
- Long term: Up to 2050

The detailed climate scenario analysis was based on two scenarios, namely a 1.5°C warming scenario (orderly scenario), and a >3°C warming scenario (hot house scenario). The orderly scenario (1.5°C scenario) assumes climate policies are introduced and rapid decarbonisation is undertaken, whereas the hot house scenario (>3°C scenario) assumes that climate policies and action are limited and insufficient for the impacts of climate change (Figure 2). The climate impacts are modelled for these two scenarios for all short, medium and long-term timeframes.

Figure 2: Climate scenarios explored



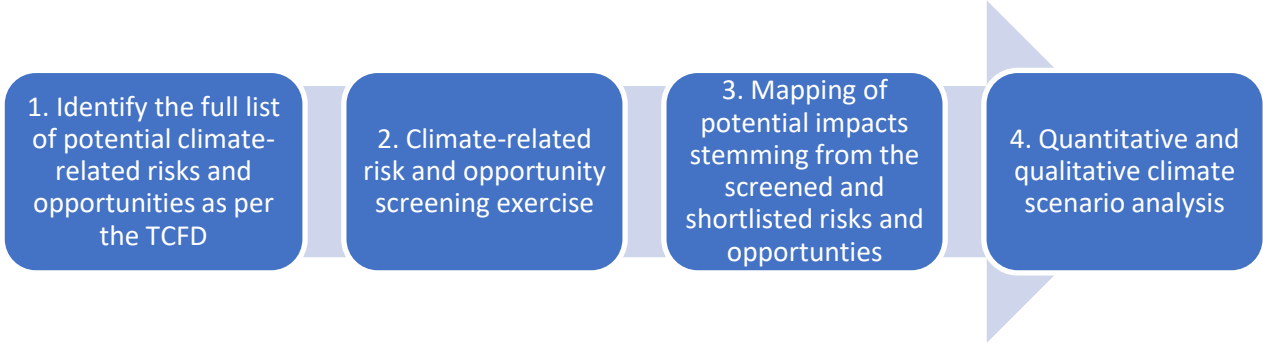


Both transition and physical risks and opportunities were considered in the screening analysis by consulting the long list of potential climate-related risks and opportunities as per the TCFD. Subsequently, we shortlisted and further explored the relevant risks and opportunities.

Physical risks are those that arise from the physical impact of climate change, both chronic (impacts that happen over a period of time, such as temperature increase or sea level rise) and acute (impacts that happen as extreme events, such as floods, storms or wildfires). On the other hand, transition risks arise from interventions associated with a transition to a low-carbon economy, such as newly introduced climate policies and regulations, low-carbon technologies, carbon pricing, or changes in consumer preferences and market sentiments.

The full process of the climate risk scenario analysis can be summarised in four steps:

Figure 3: Climate risk scenario analysis process



Additionally, the screening exercise considered the examples of climate-related risks from Table 1 of TCFD’s Final Recommendations Report<sup>6</sup>. This exercise was informed by qualitative desktop research, where we applied TCFD’s categorisation of transition and physical climate risks (Steps one and two). To inform the potential magnitude of impacts from the identified climate-related risks to ComfortDelGro, the screening exercise made references from available, appropriate, and credible literature such as the International Energy Agency (“IEA”) World Energy Outlook<sup>7</sup>, Climate Analytics’ Climate Impact Explorer<sup>8</sup> and the Network for Greening the Financial System (“NGFS”)<sup>9</sup>, as well as the latest understanding of climate science from the IPCC Sixth Assessment Report<sup>10</sup>.

The results of the screening exercise are outlined in Table 2, where we have identified the potential level of risk. It presents the shortlisted climate-related risks for ComfortDelGro, which are likely to have a potentially moderate or high impact on our business operations and financials. Some of the physical and transition risks that have not been presented below were deemed to have a lower or negligible impact on ComfortDelGro’s operations in the operational regions in the scoped timeframes and scenarios. While Table 2 below focuses on the risk screening results, the screened opportunities are further discussed in the following section and Table 3 and 4.

<sup>6</sup> Recommendations of the [Task Force on Climate-related Financial Disclosures](#).

<sup>7</sup> IEA, 2022, [World Energy Outlook 2022](#).

<sup>8</sup> Climate Analytics, [Climate impact explorer](#).

<sup>9</sup> NGFS, [Scenarios Portal](#).

<sup>10</sup> IPCC, [Sixth Assessment Report, 2022](#).


















































































Table 2: Climate-related risks screening results

**Legend:**

Potential impact magnitude\*:

-  Mild risk
-  Moderate risk
-  High risk

\*Magnitude is determined through well referenced literature and data sets on climate risk indicators and is determined through observed and projected trends in physical risks from the Climate Analytics' Climate Impact Explorer and the World Bank Climate Change Knowledge Portal.

	Singapore	UK & Ireland	Australia	China	New Zealand
<b>Physical</b>  1.5°C warming	<ul style="list-style-type: none"> <li> Heatwaves (rising mean temps.)</li> </ul>	<ul style="list-style-type: none"> <li> Droughts/ water scarcity</li> <li> Storms/ cyclones</li> <li> Heatwaves (Rising mean temps.)</li> <li> Rising sea levels</li> <li> Wildfires</li> <li> Floods</li> </ul>	<ul style="list-style-type: none"> <li> Heatwaves (rising mean temps.)</li> <li> Floods</li> <li> Wildfires</li> <li> Rising sea levels</li> <li> Droughts/ water scarcity</li> </ul>	<ul style="list-style-type: none"> <li> Heatwaves (Rising mean temps.)</li> <li> Floods</li> <li> Storms/ Cyclones</li> </ul>	<ul style="list-style-type: none"> <li> Heatwaves (rising mean temps.)</li> <li> Floods</li> <li> Wildfires</li> </ul>
	 >3°C warming	<ul style="list-style-type: none"> <li> Floods</li> <li> Rising sea levels</li> <li> Droughts/ Water scarcity</li> <li> Heatwaves (Rising mean temps.)</li> </ul>	<ul style="list-style-type: none"> <li> Droughts/ water scarcity</li> <li> Storms/ cyclones</li> <li> Heatwaves (Rising mean temps.)</li> <li> Wildfires</li> <li> Floods</li> <li> Rising sea level</li> </ul>	<ul style="list-style-type: none"> <li> Floods</li> <li> Droughts / water scarcity</li> <li> Heatwaves (Rising mean temps.)</li> <li> Rising sea levels</li> <li> Wildfires</li> </ul>	<ul style="list-style-type: none"> <li> Droughts/ Water scarcity</li> <li> Rising sea levels</li> <li> Heatwaves (Rising mean temps.)</li> <li> Floods</li> <li> Storms/ Cyclones</li> </ul>
<b>Transition</b>  1.5°C warming	<ul style="list-style-type: none"> <li> Carbon pricing</li> <li> Policies and regulations</li> <li> Technology shifts</li> <li> Changing customer expectations</li> <li> Reputational risks</li> </ul>	<ul style="list-style-type: none"> <li> Policies and regulations</li> <li> Technology shifts</li> <li> Changing customer expectations</li> <li> Reputational risks</li> </ul>	<ul style="list-style-type: none"> <li> Carbon pricing</li> <li> Policies and regulations</li> <li> Technology shifts</li> <li> Changing customer expectations</li> <li> Reputational risks</li> </ul>	<ul style="list-style-type: none"> <li> Policies and regulations</li> <li> Changing customer expectations</li> <li> Carbon pricing</li> <li> Technology shifts</li> <li> Reputational risks</li> </ul>	<ul style="list-style-type: none"> <li> Carbon pricing</li> <li> Policies and regulations</li> <li> Technology shifts</li> <li> Changing customer expectations</li> <li> Reputational risks</li> </ul>
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After deriving the shortlisted climate-related risks and opportunities through the screening exercise, we continued to explore the climate-related risks and opportunities in more detail, mapping the associated business and financial impacts to the relevant risks and opportunities. For the risks and opportunities that have available and credible data, we quantified its potential impacts (Steps three and four) in the next section. The results from the scenario analysis subsequently aided in the formulation of action plans and responses to guide our climate-related strategies.

**b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.**

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From the climate screening exercise and scenario analysis, we are able to consider the impacts on ComfortDelGro's businesses, strategy and financial planning. We have identified that physical risks such as higher mean temperatures, floods and storms may result in higher operational costs, impact on the productivity of staff, business interruptions and impacts on revenue. On the other hand, though transition risks and opportunities may result in higher operational costs, they may also present greater financial opportunities from the transition towards low-carbon transport.

Table 3 below summarises the climate-related risks and opportunities that are pertinent to ComfortDelGro, highlighting the potential financial impact and opportunities from identified physical and transition risks and opportunities. In the tables below, where possible, potential financial risks and opportunities for ComfortDelGro that were subsequently quantified in the climate scenario analysis have also been identified. These risks and opportunities were quantified as current supporting data and information on them are more readily available at the moment. However, certain potential financial risks and opportunities have not been quantified due to a number of factors including the lack of supporting data and information necessary for comprehensive quantification.

Risks and opportunities that have been qualitatively explored will be kept in ComfortDelGro's purview and investigated further once more data and information become readily available.


For further detail, please refer to the Risk Management section.





Table 3: Screening of physical risks and opportunities

Physical risks	Countries impacted <sup>11</sup>	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>12</sup>
<b>Acute – Heatwaves</b> (Rising mean temperatures)	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	Short to medium-term	<p>With rising temperatures and more frequent heatwaves arising from global warming and climate change, risks attributing to the increased cost of cooling spending and risk to labour productivity are expected.</p> <p>At the same time, rising mean temperatures could affect the frequency of heat-related injuries or conditions. In ComfortDelGro’s countries of operation, heatwaves during the summer has been experienced in the recent years.</p> <p><b>Quantitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Higher energy costs due to increased cooling from air conditioning and cooling systems</li> <li>• Productivity risk to manpower due to heat stress</li> </ul> <p><b>Qualitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Liquidation damages if service level agreements with clients not met due to disruptions from heatwaves</li> </ul>
<b>Acute – Floods</b> (flash floods and river floods)	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	Short to medium-term	<p>Climate change is likely to exacerbate the frequency and intensity of extreme flood events. Additionally, the changing climate has seen heavier precipitation and rainfall, as well as faster and increased snowmelt which contributes to flooding.</p> <p>Flooding may impede and disrupt the transportation services that ComfortDelGro provides.</p> <p><b>Quantitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Business disruption loss due to flash floods</li> <li>• Business disruption loss due to river floods</li> <li>• Higher insurance related costs for buildings due to increase in flooding</li> </ul> <p><b>Qualitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Reduction in asset value due to destruction to assets from flooding</li> </ul>

<sup>11</sup> All countries were considered in the screening. As part of the scenario analysis, we explored the impacts for the countries where this risk resulted to be relevant and/or where data for quantification of the impact of the risk was available. In this context, ‘Countries impacted’ refers only to the countries for which the risk was quantified or further explored qualitatively.

<sup>12</sup> Considering the amount of current data and information available, only some potential impacts were further qualitatively explored or quantified as they were deemed the most relevant to ComfortDelGro’s business.

Physical risks	Countries impacted <sup>11</sup>	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>12</sup>
			<ul style="list-style-type: none"> <li>• Liquidation damages if service level agreements with clients not met due to flood disruption</li> <li>• Reputational risks if risks are not handled properly</li> <li>• Increased reviews on business continuity plans as frequency and intensity of floods increase</li> <li>• Higher repair and maintenance costs due to damage from floods</li> <li>• Increase in repair and maintenance costs which results in more revenue for CDG Engineering</li> <li>• New and increased demand for climate-related insurance for CDG’s insurance business</li> </ul>
<p><b>Acute – Storms / Cyclones (Tropical cyclones, convective storms, such as snowstorms, tornadoes)</b></p>	<ul style="list-style-type: none"> <li>• UK</li> <li>• China</li> </ul>	<p>Short to medium-term</p>	<p>The frequency and intensity of extreme weather patterns and natural disaster events has been exacerbated due to climate change. This may significantly affect ComfortDelGro’s operations from business disruption to the workplace safety of our employees.</p> <p><b><u>Quantitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Business disruption due to tropical storms</li> <li>• Higher related insurance costs for buildings due to increasing storms frequency and intensity</li> </ul> <p><b><u>Qualitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Reduction in asset value due to destruction from storms</li> <li>• Liquidation damages if service level agreements with clients not met due to storm disruption</li> <li>• Increased reviews on business continuity plans due to increasing frequency and intensity of storms</li> <li>• Reputational risks if risks are not handled properly</li> <li>• Higher repair and maintenance costs due to damage from storms</li> <li>• Increased repair and maintenance costs results in increase revenue for ComfortDelGro’s Engineering business</li> <li>• New and increased demand for climate-related insurance for CDG’s insurance business</li> </ul>

Physical risks	Countries impacted <sup>11</sup>	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>12</sup>
<b>Chronic – Wildfires</b>	<ul style="list-style-type: none"> <li>• UK</li> <li>• Australia</li> <li>• New Zealand</li> </ul>	Short to medium-term	<p>With rising temperatures and drier conditions, the frequency and length wildfires and bushfires are expected to be increased and prolonged. These wildfires would result in the need for more business continuity plans, employee protection and repair and maintenance costs in the event of a fire.</p> <p><b><u>Quantitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Higher insurance related costs for buildings due to increasing intensity and frequency of wildfires</li> </ul> <p><b><u>Qualitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Reduction in asset values due to destruction from wildfires</li> <li>• Business disruption to services due to wildfires</li> <li>• Liquidation damages if service level agreements with clients not met due to disruption</li> <li>• Increased reviews on business continuity plans due to increasing intensity and frequency of wildfires</li> <li>• Reputational risks if risks are not handled properly</li> <li>• Higher repair and maintenance costs due to damage in property and assets from wildfires</li> <li>• Increased repair and maintenance costs results in increase revenue for CDG Engineering business</li> <li>• New and increased demand for climate-related insurance for CDG’s insurance business</li> </ul>
<b>Chronic – Rising sea levels<sup>13</sup></b>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	Medium to long-term	<p>With increasing mean temperatures attributing from global warming and climate change, rising sea levels is expected. This may impede on ComfortDelGro’s operations in areas that is vulnerable to sea level rise.</p> <p><b><u>Quantitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Higher insurance related costs for buildings due to risk of sea level rise</li> </ul> <p><b><u>Qualitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Reduced asset values due to destruction from rising sea-levels</li> <li>• Business disruption to services due to rising sea levels</li> </ul>

<sup>13</sup> Rising sea levels risk will be relevant where ComfortDelGro’s operations and assets are coastal.




Physical risks	Countries impacted <sup>11</sup>	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>12</sup>
			<ul style="list-style-type: none"> <li>• Liquidation damages if service level agreements with clients not met due to disruption</li> <li>• Increased reviews on business continuity plans in event of sea level rise</li> <li>• Reputational risks if risks are not handled properly</li> <li>• Increased repair and maintenance costs results in increase revenue for CDG Engineering business</li> <li>• New and increased demand for climate-related insurance for CDG’s insurance business</li> </ul>
<p><b>Chronic – Droughts / water scarcity</b></p>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	<p>Medium to long-term</p>	<p>Water is a scarce and limited resource and climate change is affecting the supply of freshwater due to several reasons including increased runoff of pollutants and sediment and decreased water availability from droughts. As the supply of freshwater decreases, the cost and availability may be limited.</p> <p><b><u>Quantitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Higher insurance related costs for buildings due to risk of weather-related droughts or water scarcity</li> </ul> <p><b><u>Qualitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Business disruption to services due to droughts</li> <li>• Liquidation damages if service level agreements with clients not met due to disruption</li> <li>• Reputational risks if risks are not handled properly</li> <li>• Higher repair and maintenance costs due to limited water resources</li> <li>• Additional operational costs due to limited water resources</li> </ul>




Table 4: Transition risk and opportunities screening

Transition risk	Countries impacted	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>14</sup>
<p><b>Low carbon economy transition policies &amp; regulations –</b> Increased climate change-related regulations and disclosures</p>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	<p>Short to long-term</p>	<p>In the countries where ComfortDelGro has operations, there has been an observed rise in climate-related regulations and disclosures. In Singapore, UK and Ireland, as well as New Zealand, regulators require all publicly listed companies to publish climate-related disclosures which includes energy use, carbon emissions and GHG emissions. In China and Australia, the regulatory space is gearing up for establishing mandatory ESG reporting regulations, with China working towards standardising corporate reporting and Australia seeing mandatory disclosure regulations as soon as 2024. As we move further into the transition to low-carbon economy, we can expect stricter and an increased number of climate change regulations.</p> <p><b>Qualitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Increased operating costs to comply with regulations and necessary disclosures</li> <li>• Costs and non-compliance to regulations related to climate change</li> <li>• Reputational risks and pressures from stakeholders to align with climate-related regulations</li> <li>• Increased revenues through access to new and emerging markets e.g. potential gain in revenue through increased demand for VICOM’s green/EV and emission testing services</li> <li>• Reputational advantages for timely or early adoption of regulations</li> </ul>
<p><b>Low carbon economy transition policies &amp; regulations –</b> Emissions reduction regulations or policies</p>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	<p>Medium to long-term</p>	<p>To decarbonise national emissions, regulators have started to adopt regulations and policies where companies are required to achieve carbon neutrality or net zero emissions by a given data set by the local government. Additionally, regulators have started to encourage and invest in services that boosts contributions to the low-carbon economy.</p>


<sup>14</sup> Considering the amount of current data and information available, only some potential impacts were further qualitatively explored or quantified as they were deemed the most relevant to ComfortDelGro’s business.



Transition risk	Countries impacted	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>14</sup>
			<p>For example, Singapore’s Green Plan outlines the country’s framework to strengthen its climate change and sustainability commitments to position the nation to achieve net zero emissions by 2050. Similarly, in New Zealand, the Climate Change Response (Zero Carbon) Amendment Act and Emissions Reduction Plan sets out the country’s ambition and roadmap to meet their 2050 net zero targets.</p> <p>With emissions reduction plans and frameworks, regulation and national policymakers have also invested in ensuring sectors and industries are able to transition at the right pace. In the UK, the government has invested £2 billion over the next five years to improve the walking and cycling infrastructure in the country. Likewise, in Australia’s Long-Term Emissions Reduction Plan to achieve net zero by 2050, the Australia government will invest A\$80 billion in low emissions technologies over the next decade.</p> <p><b>Qualitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Penalties can be faced for not transitioning to low-carbon operations</li> <li>• Increased costs of energy and fuel due to low-carbon emissions regulations</li> <li>• Regulatory and reputational pressures if not in line with the country trends</li> <li>• Capital costs and investments into retrofitting and transitioning towards energy efficient and low-carbon equipment and vehicles</li> <li>• Early retirement of assets and vehicles due to energy efficient requirements</li> <li>• Low-carbon transition investment opportunities</li> <li>• Opportunity to improve the resilience and energy efficiency of portfolio</li> </ul>
<p><b>Low carbon economy transition policies &amp; regulations – Carbon pricing</b></p>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	<p>Medium to long-term</p>	<p>In the countries which ComfortDelGro operates in, carbon markets are in place and operational, presenting either carbon prices, carbon taxes or an emissions trading scheme (“ETS”) with the aim of decreasing carbon emissions.</p> <p>For example, Singapore’s carbon tax level is expected to reach S\$45/tCO<sub>2</sub>e and S\$50/tCO<sub>2</sub>e to S\$80/tCO<sub>2</sub>e</p>

Transition risk	Countries impacted	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>14</sup>
			<p>by 2026 and 2030 respectively. Similarly, Ireland carbon tax is expected to increase by €7.50/tCO<sub>2</sub>e from €41.00 to €48.50. In New Zealand and China, ETS has been become operational in efforts to reduce national GHG emissions.</p> <p><b>Quantitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Increase operational costs due to energy and fuel price increase from carbon pricing (<b>quantified as an indirect risk impact</b>)</li> </ul> <p><b>Qualitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Increased expenses to purchase carbon allowances</li> <li>• Higher costs of services due to carbon pricing</li> <li>• Selling of carbon allowances /credits based on EV charging and solar businesses</li> </ul>
<p><b>Market –</b> Changing consumer preference and stakeholder expectations</p>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	<p>Medium to long-term</p>	<p>With government regulations promoting greener transport, a transition towards EVs and low emission vehicles in ComfortDelGro’s countries of operation will be expected. This transition would result in an increase in public transport ridership, with the expectation of public transportation becoming the main commute method e.g. 75% of commute to be attributed mass public transport during peak periods.<sup>15</sup></p> <p>Similarly, the UK’s government is striving to decarbonise all forms of transport, pushing for the enhancement of cycling and walking infrastructure, zero emission buses and coaches and delivering a net zero railway network by 2050.</p> <p><b>Qualitatively explored impacts</b> </p> <ul style="list-style-type: none"> <li>• Losing out to competitors if unable to keep up with the changing expectations from consumers to provide greener alternatives</li> <li>• Potential investor scrutiny if there is a lack of or incomplete disclosure and efforts to decarbonise</li> <li>• Reputational risks and pressures if unable to keep up with changing expectations and competition</li> <li>• Competitive advantage can be established</li> </ul>

<sup>15</sup> Source: [Singapore Green Plan targets](#).

Transition risk	Countries impacted	Time horizon	Description & potential financial risks and opportunities for ComfortDelGro <sup>14</sup>
			<ul style="list-style-type: none"> <li>• Opportunity to reinvent and transition product offerings towards greener alternatives to keep up with the competition</li> <li>• Reputational advantages for timely uptake of solutions to fit changing consumer expectations</li> </ul>
<p><b>Market –</b> Transition of fleet towards greener fleet</p>	<ul style="list-style-type: none"> <li>• Singapore</li> <li>• UK/Ireland</li> <li>• Australia</li> <li>• China</li> <li>• New Zealand</li> </ul>	<p>Medium to long-term</p>	<p>The transition to a low-carbon economy is expected to accelerate the development of the necessary technology to adapt to the energy efficiency requirements and low-carbon solutions. In the transport sector, we expect more green alternatives and low-carbon technologies and options such as EVs, hydrogen fuel and hybrid vehicles to surface as governments transition its transport sector to a low-carbon one. The enhancements of such infrastructure can be seen in all the countries of our operation where transitioning the transport sector is a key component of the roadmap to hitting their national climate goals.</p> <p><b><u>Qualitatively explored impacts</u></b> </p> <ul style="list-style-type: none"> <li>• Capital investments necessary to transition to greener fleet</li> <li>• Capital expenses to adopt changing technologies including upskilling</li> <li>• Reputational risks and pressures for inability to transition to a greener fleet</li> <li>• Cost savings from moving from fuel to electricity in term of carbon costs</li> <li>• Opportunity to establish competitive advantage</li> <li>• Reputational advantages for timely uptake of technology</li> </ul>

Based on the mapped risks, we were able to perform a more detailed qualitative and quantitative climate scenario analysis where credible climate data was available, to identify the potential financial exposure to climate-related risks and opportunities and strengthen our understanding of the expected financial impacts to our business as well as our business’ resilience to the identified risks.

It must be noted that climate scenario analysis results for physical risks were determined on the assumption that no action was undertaken by ComfortDelGro to mitigate and adapt to our pertinent climate risks. This results summary (Tables 4 and 5 below) cover the preliminary overall findings of the quantitative scenario analysis for ComfortDelGro Group and does not differentiate between business units.

We have identified that physical risks such as heatwaves (rising mean temperatures) and floods would potentially result in additional operational costs and business interruptions and adversely affect

ComfortDelGro’s revenue. Similarly, transition risks may result in additional financial costs if left unmitigated.

### **Physical and Transition Risks and Opportunities**

The climate impacts are modelled for these two scenarios across all short, medium and long-term timeframes. Overall, it has been found that increases in operational costs due to rising temperatures is expected to be the most significant risk in terms of financial impact. The results of our climate risk assessment are summarised below. Further details on this can be found in the next section on resilience under part c.

*Figure 4: Summary of impacts from physical climate risks*

Physical risks	
Acute risks	
<ul style="list-style-type: none"> <li>• Rising mean temperatures on electricity costs and productivity risks to manpower due to heat stress</li> <li>• More frequent or intense floods on business activity and risk to manpower</li> <li>• More frequent or intense storms</li> <li>• Increasing and more intense wildfires and bushfires</li> </ul>	
Chronic risks	
<ul style="list-style-type: none"> <li>• Rising sea levels and water scarcity</li> </ul>	

Additional financial Impact for the respective year						
Year	Singapore	UK	Ireland	Australia	China	New Zealand
2030	<ul style="list-style-type: none"> <li>• Higher cooling costs to be expected in both scenarios</li> <li>• Moderate additional financial impact due to flash floods</li> </ul>	<ul style="list-style-type: none"> <li>• River flood risks would be the largest impact in both scenarios, followed by tropical storms</li> <li>• Higher cooling costs and flash flood risks is to be experience moderate increases</li> <li>• Insurance costs due to climate change is likely to add to potential loss of revenue</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal financial impact to business with flash floods being the largest in both scenarios</li> </ul>	<ul style="list-style-type: none"> <li>• Higher cooling costs is found to be the highest additional financial impact in both scenarios, followed by river flood risks</li> </ul>	<ul style="list-style-type: none"> <li>• Higher cooling costs to be expected in both scenarios.</li> <li>• Flash floods, river floods and tropical storms result in a minimal additional financial impact in both scenarios</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts from river floods is expected to decrease towards 2050, however still reflecting the highest additional financial impact in 2030</li> <li>• Mild financial impact from flash floods</li> </ul>

Year	Singapore	UK	Ireland	Australia	China	New Zealand
2040	<ul style="list-style-type: none"> <li>• Significant increase in cooling costs in both scenarios, In the 1.5°C scenario, costs is seen to increase 43% from 2030. In the &gt;3°C scenario, costs are likely to increase 93% from 2030</li> <li>• Additional financial impact due to flash floods in the 1.5°C scenario remains constants whilst seeing an increase in the &gt;3°C scenario</li> </ul>	<ul style="list-style-type: none"> <li>• Anticipated large additional financial impact to revenue from tropical storms in the &gt;3°C scenario</li> <li>• Significant increase in additional financial impact from river floods in the 1.5°C scenario</li> <li>• Expected increase in additional cooling costs in the &gt;3°C scenario</li> </ul>	<ul style="list-style-type: none"> <li>• Significant increase in additional financial impact of river floods in both scenarios, seeing an increase of more than 50% from 2030 costs.</li> <li>• Cooling costs is anticipated to more than double in both scenarios, however it represents a low risk</li> </ul>	<ul style="list-style-type: none"> <li>• River flood risks to business sees a small decrease in the 1.5°C scenario, whereas increases more than two-fold in the &lt;3°C scenario</li> <li>• Anticipated larger increase in cost of electricity for cooling in the &gt;3°C scenario as compared to the 1.5°C scenario, similarly for flash flood risks</li> </ul>	<ul style="list-style-type: none"> <li>• Significant increase in cooling costs in both scenarios, seeing a more than 50% increase from 2030 costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Anticipated cost increase for cooling costs by more than 50% in both scenarios</li> </ul>
2050	<ul style="list-style-type: none"> <li>• Slight increase in cooling costs from 2040 for both scenarios.</li> <li>• Financial impact from flash floods remain constant from the 2040 costs.</li> </ul>	<ul style="list-style-type: none"> <li>• In both scenarios, flash floods and river floods be the largest financial impact</li> </ul>	<ul style="list-style-type: none"> <li>• River flood risk in the &gt;3°C scenario is expected to be the largest, seeing financial impact to more than double.</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity costs for cooling gradually increases in both scenarios</li> <li>• River floods risks in the &gt;3°C scenario would significantly increase and remain stable in the 1.5°C scenario</li> </ul>	<ul style="list-style-type: none"> <li>• Slight increase in cooling costs from 2040 for both scenarios.</li> <li>• Financial impact from flash flood, river floods and tropic cyclones would see the largest impact in 2050 in both scenarios</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity costs for cooling gradually increases in both scenarios</li> <li>• River flood risks increases minimally in the 1.5°C scenario and increases by more than 50% in the &gt;3°C scenario</li> </ul>

### Our Resilience Strategy

- Increase climate resilience by conducting climate and environment assessments to identify operational risks and financial impacts
- Establish business continuity planning to mitigate and plan for adverse physical risks in the countries of operation
- Support communities impacted by climate change

Where the availability of climate science can strongly support the quantification of climate risks to a greater extent, there are also business opportunities arising from the increased focus on the changing climate. Opportunities pertinent to ComfortDelGro's operations include development and shifts in innovation and technology and the transition towards greener fleets and consumer expectations. At the moment, the scale of these opportunities is difficult to quantify due to the lack of credible data. However, they may be quantified in the future when data around these opportunities become available.

#### **c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.**

The climate scenario analysis further shed light on the additional financial impact of the climate-related physical and transition risks and opportunities to ComfortDelGro, for the respective year. To assess the extent of financial impact of physical climate risks to our business, the scenario analysis modelled how vulnerable ComfortDelGro's assets are to extreme weather conditions.

As a result, this presents an opportunity for ComfortDelGro to assess the resilience of our existing decarbonisation strategy and determine if any additional areas require improvement to mitigate future climate-related risks. Additional resilience measures will be further evaluated, and may be implemented according to the pertinence and magnitude of risks.

Overall, whilst assessing both physical and transition risks, it was determined that some risks apply directly to ComfortDelGro as a 'first-order', and other risks have more indirect impact as 'second-order' risks. First-order risks directly affect ComfortDelGro's operations and asset. For example, physical risks such as floods can cause damage to our property. On the other hand, second-order risks have a more indirect impact and are experienced by ComfortDelGro through cost pass-through. For example, ComfortDelGro does not experience direct implications of carbon taxes (i.e., we are not taxed on our carbon emissions in Singapore) as we are an energy price consumer. Instead, the carbon taxes on energy are typically recognised as a pass-through to our consumers in the form of fares.

However, the indirect impact of increasing carbon taxes may be felt, as the electricity prices continue to rise in the future. As carbon taxes do not directly affect ComfortDelGro currently and remain as a second-order risk, the transition risk of rising carbon prices<sup>16</sup> is excluded from the overall direct financial impact

<sup>16</sup> Carbon prices includes carbon taxes, emissions trading schemes and other related instruments that capture the cost of GHG emissions. In the context of Singapore, the main form of carbon pricing impacting ComfortDelGro would be carbon tax.

diagram below (Figure 5). However, as this risk is relevant when talking about transitioning to a lower carbon economy, it is explored separately under a ‘what if’ scenario in the ‘transition risks’ section below.

The scenario analysis concluded that unmitigated climate risks result in potential additional financial impact for the respective year. In both the 1.5°C and >3°C scenario, the predominant quantified physical risks are attributable to the risk to manpower due to rising temperatures and heat stress.

Transition risks are also considered to be impactful, where risks such as carbon price<sup>17</sup> in ComfortDelGro’s countries of operations may potentially result in an indirect financial cost through rising prices of electricity. While carbon price is not a direct influencer on our operations, carbon prices can be used as an indicative proxy in determining the country’s speed of transition; how they are adapting and mitigating to climate change. Additionally, as carbon and electricity prices increase, there may potentially be an impact in the affordability of our services to customers (as a result of the cost pass-through), which has the potential to impact our customer base. There is not yet a direct measure of this potential impact, but it is crucial to keep in mind as we look forward.

Overall, results from the scenario analysis suggest productivity risks to manpower due to heat stress on an annual basis would be the biggest impact in the >3°C scenario, accounting for 35% to 50% of the total additional financial impacts, with higher costs expected in 2050. The additional financial impacts from productivity risks to manpower in the >3°C scenario in 2050 is estimated to be potentially financially material<sup>18</sup>.

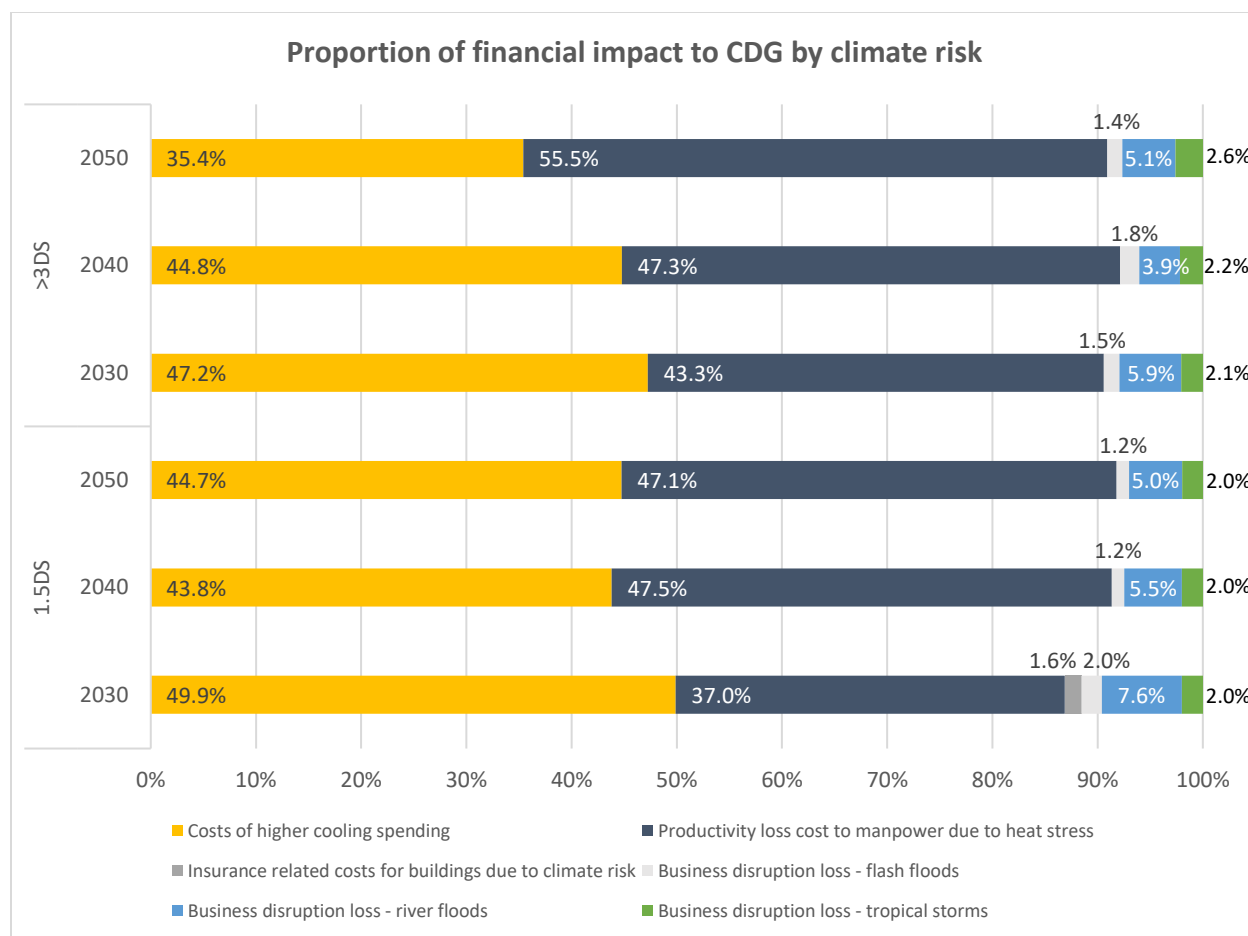
Based on the current inputs, other physical climate risks are estimated to be immaterial on an annual basis. It must be noted that the methodology quantifies the additional financial costs in the single selected years (i.e. 2030, 2040, 2050) and as most of the physical risks have probabilistic nature, the magnitude of impact may be underestimated. As such, the rate of change of impacts has not been modelled and the estimated potential additional impacts are not cumulative, but annual. Hence, the potential total financial impact from the climate risks across the years from baseline to the future timeframes in cumulative terms could be much larger<sup>19</sup>.

<sup>17</sup> Carbon prices is inclusive of carbon taxes and emissions trading schemes and other related instruments that capture the cost of GHG emissions. Carbon prices as a term is used in this report to encapsulate and cover the various types of mechanisms relevant to the global context in which ComfortDelGro operates.

<sup>18</sup> Risk impacts estimated based on our current inputs are considered financially material if the financial impact is >5% of ComfortDelGro’s 3 year rolling average EBITDA (FY20, FY21, FY22).

<sup>19</sup> For example, based on the [IPCC AR6 WG1](#), CMIP5 model simulations show that the frequency for present-day climate 20-year extreme precipitation is projected to increase by 10% at the 1.5°C global warming level and by 22% at the 2.0°C global warming level, while the increase in frequency for present-day climate 100-year extreme precipitation is projected to increase by 20% and more than 45% at the 1.5°C and 2.0°C warming levels, respectively. CMIP6 simulations with SSP scenarios show that the frequency of 10-year and 50-year events will approximately double and triple, respectively, at a very high warming level of 4°C.

Figure 5: Proportion of additional financial impact by climate risk for the respective year<sup>2021</sup>



### Physical risks

The scenario analysis quantified the additional financial impacts for the respective year resulting from heat stress, higher temperatures, flash floods, river floods and tropical cyclones. Physical risks such as higher mean temperatures, floods and tropical cyclones have been quantified as they may potentially impact the productivity of ComfortDelGro’s staff and revenue. Additionally, the scenario analysis included potential increase in property insurance premiums due to climate change. However, the additional increase of insurance premiums<sup>22</sup> from the baseline costs is expected to be minimal.

<sup>20</sup> Impact from carbon costs is not considered in total additional financial impacts as it is an indirect impact and is explored separately. Total additional financial impacts only consist of total incremental financial impacts from physical risks.

<sup>21</sup> This study estimates the annual incremental and proportionate financial impacts for a single year and does not model the rate of change of impacts across 2022 and 2050 (i.e., impacts are not cumulative). Therefore, should a physical climate risk event occur, the impact would be larger. Refer to appendix for more information.

<sup>22</sup> Due to the limited availability of data on how climate-related risks may impact insurance premiums, there are limitations in the calculation of incremental costs to insurance premiums. However, it still sheds light on the overall impact it may have on ComfortDelGro.



### **Rising mean temperatures**

In both scenarios, higher temperatures are expected to pose a significant risk to ComfortDelGro. This is attributable to the increased cost for cooling spending and risk to labour productivity. Both additional electricity costs and costs to labour force due to rising temperatures will see increases over the long-run where costs are expected to be greater towards 2050.

With ComfortDelGro’s largest operations being in Singapore, it is expected to see Singapore account for the largest proportion of additional energy costs due to cooling (Table 5). As such, additional energy costs due to cooling would be the largest financial impact in Singapore and likewise in China. Attributed to the vast number of operations we have in different locations and the rising number of warmer days demanding greater cooling, the largest financial impact for China would be the additional energy costs due to cooling.

The following table (Table 5) identifies the proportional percentage breakdown of potential additional energy costs due to cooling attributed to each country for the respective year.

*Table 5: Breakdown of potential additional energy costs due to cooling by country for the respective year<sup>23</sup>*

	1.5°C scenario			>3°C scenario		
	2030	2040	2050	2030	2040	2050
<b>Singapore</b>	46.71%	40.91%	41.66%	44.84%	42.16%	33.31%
<b>United Kingdom</b>	0.35%	0.22%	0.22%	0.19%	0.22%	0.18%
<b>Ireland</b>	0.05%	0.04%	0.04%	0.05%	0.04%	0.04%
<b>Australia</b>	1.70%	1.45%	1.52%	1.27%	1.30%	1.03%
<b>China</b>	0.55%	0.61%	0.67%	0.33%	0.36%	0.28%
<b>New Zealand</b>	0.55%	0.57%	0.58%	0.47%	0.72%	0.60%
<i>% of potential financial impacts</i>	49.9%	43.8%	44.7%	47.2%	44.8%	35.4%

Rising temperatures could affect the frequency of heat-related injuries or conditions. With increasing prevalence of heat-related injuries, it could impact the labour productivity of ComfortDelGro’s workforce, especially workers who are directly exposed to the heat in the course of their work outdoors<sup>24</sup>.

The risk to manpower and labour productivity is foreseen to be the largest physical climate risk to ComfortDelGro, where costs may account for 43% to 56% of total additional financial impact in the >3°C scenario. Amongst the countries of operation, Singapore and Australia are likely to encounter the most pronounced impacts from heat-related productivity loss (Table 6). This is attributable to both the highest risk factor, percentage of productivity loss, and Singapore covering the largest part of ComfortDelGro’s workforce.

<sup>23</sup> The financial impacts were estimated using the cooling degree days data from the [World Bank Climate Change Knowledge Portal](#).

<sup>24</sup> In the quantification of labour productivity loss due to heat stress, the risk factor identifies the heat stress impact on labour productivity and efficiency under hot and humid climate conditions, due to the reduced capacity of the human body to perform physical labour. Although, it may not directly ComfortDelGro due to the nature of work of our employees, it is still a pertinent risk to consider for our business and provides ComfortDelGro with a proxy.

The following table (Table 6) identifies the percentage breakdown of potential additional financial costs due to productivity risk to manpower due to heat stress attributed to each country for the respective year.

Table 6: Breakdown of potential additional financial costs due to productivity risk to manpower due to heat stress by country for the respective year<sup>25</sup>

	1.5°C scenario			>3°C scenario		
	2030	2040	2050	2030	2040	2050
<b>Singapore</b>	26.57%	33.73%	33.44%	31.26%	33.44%	39.63%
<b>UK &amp; Ireland<sup>26</sup></b>	0.00%	0.29%	0.28%	0.13%	0.33%	0.28%
<b>Australia</b>	10.25%	13.30%	13.19%	11.78%	13.34%	15.37%
<b>China</b>	0.07%	0.10%	0.09%	0.09%	0.09%	0.11%
<b>New Zealand</b>	0.11%	0.10%	0.09%	0.09%	0.05%	0.11%
<i>% of total financial impacts</i>	<i>37.00%</i>	<i>47.50%</i>	<i>47.10%</i>	<i>43.30%</i>	<i>47.30%</i>	<i>55.50%</i>

### Flash and river floods

The expected damage from flash floods on ComfortDelGro's revenue is deemed to be immaterial to low<sup>27</sup>. In the 1.5°C scenario, the cost of damage from flash floods are expected to be relatively stable and low ranging from 1% to 2% of total financial impact. Similarly, flash floods in the >3°C scenario account for less than 2% of total financial impact in all time horizons. With higher risk factors in Australia and United Kingdom, we are expected to see these two countries account for the largest proportion of the total financial impact from business disruption loss due to flash floods (Table 7).

The following table (Table 7) identifies the percentage breakdown of potential financial impact from business disruption loss due to flash floods attributed to each country for the respective year.

Table 7: Breakdown of potential financial impact from business disruption loss due to flash floods by country for the respective year<sup>28</sup>

	1.5°C scenario			>3°C scenario		
	2030	2040	2050	2030	2040	2050
<b>Singapore</b>	0.22%	0.13%	0.13%	0.17%	0.20%	0.16%
<b>UK</b>	0.71%	0.43%	0.43%	0.54%	0.64%	0.50%
<b>Ireland</b>	0.16%	0.10%	0.10%	0.12%	0.14%	0.11%
<b>Australia</b>	0.89%	0.53%	0.53%	0.67%	0.80%	0.62%
<b>China</b>	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%
<b>New Zealand</b>	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<i>% of total financial impacts</i>	<i>2.00%</i>	<i>1.20%</i>	<i>1.20%</i>	<i>1.50%</i>	<i>1.80%</i>	<i>1.40%</i>

<sup>25</sup> The financial impacts were estimated using the labour productivity due to heat stress data from the [Climate Analytics Climate Impact Explorer](#).

<sup>26</sup> United Kingdom and Ireland are considered together in the calculation of manpower risk due to our internal data collection processes and consolidation of data.

<sup>27</sup> Risk impacts estimated based on our current inputs are considered financially material if the financial impact is >5% of ComfortDelGro's 3 year rolling average EBITDA (FY20, FY21, FY22).

<sup>28</sup> The financial impacts were estimated using extreme precipitate change data from the [IPCC AR6 WG1](#).

River floods will similarly see a small financial impact, seeing a 5% to 8% and 4% to 6% of total additional financial impacts in the 1.5°C scenario and >3°C scenario respectively (Table 8). However, river floods would present the most significant financial impact on ComfortDelGro’s New Zealand and UK operations. This is largely due to the greater magnitude increase in annual damage by river floods in these respective countries.

The following table (Table 8) identifies the percentage breakdown of potential financial impact from business disruption due to river floods attributed to each country for the respective year.

Table 8: Breakdown of potential financial impact from business disruption due to river floods by country for the respective year<sup>29</sup>

	1.5°C scenario			>3°C scenario		
	2030	2040	2050	2030	2040	2050
<b>UK</b>	3.28%	2.98%	2.54%	3.25%	1.74%	1.89%
<b>Ireland</b>	0.08%	0.20%	0.20%	0.11%	0.18%	0.29%
<b>Australia</b>	2.07%	1.25%	1.22%	1.33%	1.66%	2.37%
<b>China</b>	0.02%	0.01%	0.01%	0.01%	0.01%	0.02%
<b>New Zealand</b>	2.16%	1.06%	1.04%	1.21%	0.31%	0.55%
<i>% of total financial impacts</i>	<i>7.60%</i>	<i>5.50%</i>	<i>5.00%</i>	<i>5.90%</i>	<i>3.90%</i>	<i>5.10%</i>

Despite its current minimal impact on the total financial costs, floods caused by heavy rainfall or rising sea levels may impeded on the various modes of transport and operations that ComfortDelGro carries out. The current calculations are based on the estimated annual increment and proportional financial impact expected in a single year. As climate change impacts intensify and should the physical climate risk event occur, the impact would be larger. Furthermore, it can be expected that the frequency and severity of flood risk occurrence<sup>30</sup> is likely to worsen if climate change remains unmitigated.

### **Tropical storms**

Like floods, results suggest tropical storms will have a minimal financial impact on ComfortDelGro’s revenue, accounting for 2% and 2% to 3% of total financial impact in the 1.5°C scenario and >3°C scenario respectively (Table 9). However, results suggest tropical cyclones and storms in the UK would be imminent disruption to business leading to an additional financial impact. Tropical cyclones and storms would be the biggest impact particularly in the >3°C scenario. Similarly, as current estimations are based on the estimated annual increment and financial impact expected in a single year, cumulatively, the financial impact could be much larger.

<sup>29</sup> The financial impacts were estimated using the annual expected damage from river floods data from the [Climate Analytics Climate Impact Explorer](#).

<sup>30</sup> Based on the [IPCC AR6 WG1](#), CMIP5 model simulations show that the frequency for present-day climate 20-year extreme precipitation is projected to increase by 10% at the 1.5°C global warming level and by 22% at the 2.0°C global warming level, while the increase in frequency for present-day climate 100-year extreme precipitation is projected to increase by 20% and more than 45% at the 1.5°C and 2.0°C warming levels, respectively. CMIP6 simulations with SSP scenarios show that the frequency of 10-year and 50-year events will approximately double and triple, respectively, at a very high warming level of 4°C.

The following table (Table 9) identifies the percentage breakdown of potential financial impact from business disruption loss due to tropical cyclones attributed to each country for the respective year.

Table 9: Breakdown of potential financial impact from business disruption loss due to tropical cyclones by country for the respective year<sup>31</sup>

	1.5°C scenario			>3°C scenario		
	2030	2040	2050	2030	2040	2050
<b>UK</b>	2.00%	1.99%	1.99%	2.09%	2.19%	2.59%
<b>China</b>	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%
<i>% of total financial impacts</i>	2.00%	2.00%	2.00%	2.10%	2.20%	2.60%

### Resilience measures

ComfortDelGro aims to effectively to manage, mitigate and adapt to these physical climate risks. Undergoing and conducting a climate scenario analysis is the first step to strengthening our understanding of the risks our operations face. The Group remains vigilant to watch out for any future nature-related disasters and increase our preparedness to extreme weather patterns. Annually, we conduct a risk refresh and prioritisation exercise to identify the Tier 1 risks to ComfortDelGro in that financial year. Additionally, the Business Units where ComfortDelGro has equity control above 50% are required to submit annual risks assessments and reports according to our latest ERM manual. With the identified Tier 1 risks, we actively track, monitor and manage our controls to ensure the risks significant to ComfortDelGro are sufficiently controlled. Further, all risks identified in our risk universe have risk controls that ensure they do not further escalate and pose a negative impact on ComfortDelGro.

Key to our strategic approach in managing our physical climate risks are our business continuity plans (“BCP”). Each of our Business Units, depots and offices have its specific and unique BCP according to the risks apparent in the location and site. Our BCPs mitigate the risks of disruption and catastrophic loss to our operations, people, information databases and other assets. These plans include identifying and planning alternative recovery centres, operational procedures to maintain communication, measures to ensure continuity of critical business functions, protection of our employees and customers and recovery of information databases. A component of our business continuity and crisis management plans also include purchasing various relevant insurance policies to transfer risk impacts. We update and test our BCPs regularly to ensure the efficacy of the plan and familiarise our employees with the drill and emergency responses.

Our various business units have also assessed and addressed the various risks that are relevant to them. Mitigation measures such as increasing the frequency of vehicle maintenance and implementing early warning systems have been incorporate in our business units to address and mitigate the impact of the physical risks, enhancing the resilience of our operations.

<sup>31</sup> The financial impacts were estimated using the annual expected damage from tropical cyclones data from the [Climate Analytics Climate Impact Explorer](#).

## Transition risks and opportunities

### **Carbon pricing**

In the assessment of transition risks and opportunities, we have modelled the expected financial impact of increased carbon costs on ComfortDelGro's operations. In the countries where we operate in, carbon markets are in place and operational, presenting either carbon prices, carbon taxes or an emissions trading system ("ETS"). Due to the nature of our operations, we do not experience direct implications of carbon costs but increasing carbon prices may be experienced, as electricity and fuel prices continue to rise in the future, in part due to higher carbon costs.

In order to understand the importance of reducing carbon emissions from a business case, a "what if" scenario was applied where it models the potential financial implication for ComfortDelGro due to carbon pricing. Within the "what if" scenario, we undertook an unmitigated and mitigated scenario, where the unmitigated option excluded any mitigation measures and represented a business-as-usual condition. On the other hand, the mitigated option integrated ComfortDelGro's decarbonisation plan and mitigation measures. To determine the appropriate carbon prices for each scenario and time horizon, we referenced the IEA World Energy Outlook 2021<sup>32</sup>.

The following table illustrates each country's additional carbon costs as a proportion of total carbon costs in the unmitigated scenario, for the respective year. With our largest operations and business units being in Singapore, the carbon pricing risks seen to be the highest in Singapore where costs are increasing towards 2050. Based on the current inputs, the overall additional carbon costs are estimated to be potentially financially material<sup>33</sup> in the 1.5°C scenario in all time horizons. Based on current inputs, the overall additional carbon costs are estimated to be potentially financially immaterial in the >3°C scenario.

Table 10: Breakdown of potential additional carbon costs in the unmitigated scenario by country for the respective year

	1.5°C scenario			>3°C scenario		
	2030	2040	2050	2030	2040	2050
<b>Singapore</b>	60.9%	62.0%	62.1%	83.8%	82.2%	80.6%
<b>UK</b>	7.6%	9.2%	9.6%	0.0%	1.6%	3.3%
<b>Ireland</b>	1.7%	2.0%	2.1%	0.0%	0.4%	0.7%
<b>Australia</b>	26.0%	22.9%	22.1%	13.6%	13.0%	12.6%
<b>China</b>	3.7%	3.8%	3.8%	2.3%	2.4%	2.4%
<b>New Zealand</b>	0.1%	0.2%	0.2%	0.2%	0.3%	0.4%
<b>Total<sup>34</sup></b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

<sup>32</sup> [IEA World Energy Outlook 2021, page 329](#).

<sup>33</sup> Risk impacts estimated based on our current inputs are considered financially material if the financial impact is >5% of ComfortDelGro's 3 year rolling average EBITDA (FY20, FY21, FY22).

<sup>34</sup> Totals might not add up to 100% due to rounding error.

On the other hand, a key component of our modelling approach for carbon pricing risk in the mitigated scenario is ComfortDelGro’s decarbonisation plan that outlines our plans to set more ambitious targets and transition our fleet to a low-carbon one. This plan considers:

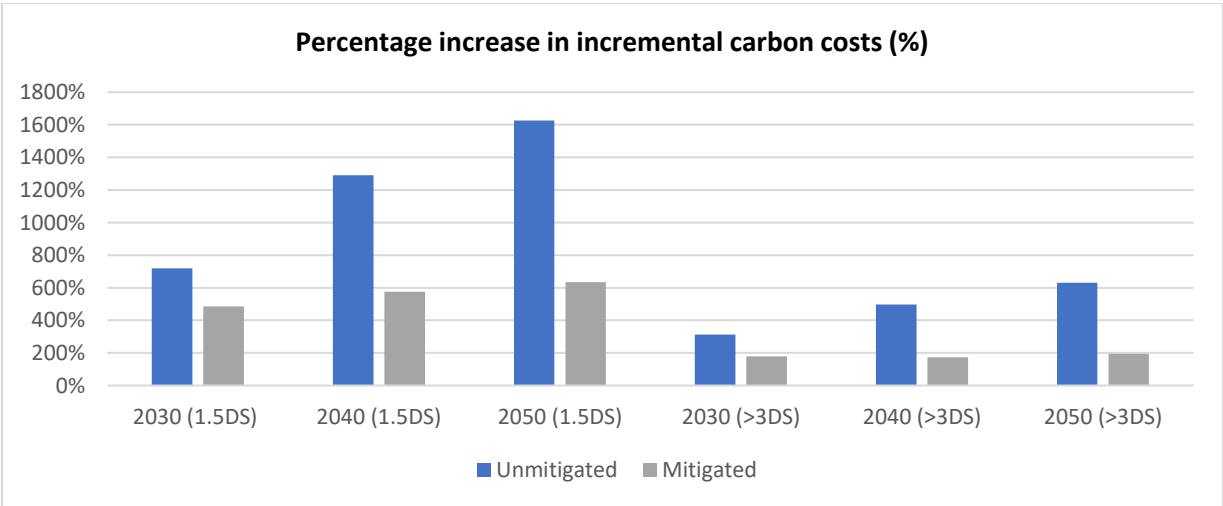
- (1) our vehicles’ lifespans;
- (2) regulatory requirements on transport vehicles; and
- (3) forecasted commercial trends in the industry.

Over time, we expect the pace of conversion and transition to EVs to accelerate due to the maturation of supporting EV and low-carbon infrastructure and regulations and the discouraging or banning of new Internal Combustion Engine (“ICE”) vehicles.

As such, the modelling approach for the indirect impacts of carbon pricing risk combined ComfortDelGro’s existing carbon emissions, decarbonisation plan and key assumptions to derive expenses relating to carbon pricing. In both scenarios, carbon pricing was found to have a prominent financial impact, seeing higher costs nearing 2050. For all countries of operation, costs relating to carbon pricing were found to be more than 50% higher in the 1.5°C scenario as compared to the >3°C scenario.

Additionally, in both the 1.5°C and >3°C scenario, the additional costs incurred in the mitigated case are projected to be significantly lower than the costs in the unmitigated scenario, across all three timeframes as illustrated in Figure 6 below. The financial impact on ComfortDelGro in the unmitigated option is expected to be 32% to 69% higher than the mitigated option. This difference underscores the importance of our decarbonisation plan, transitioning our existing global fleet with low-carbon vehicles. This plan lays out the steps ComfortDelGro will take to shift traditional ICE vehicles to electric, hybrid-electric and hydrogen vehicles till 2038. Forming the basis of our carbon reduction targets, our emissions reduction pathway of the transition plan is modelled to align with the SBTi 1.5°C scenario, which was validated and approved by SBTi in June 2022.

Figure 6: Percentage increase of additional carbon costs for respective year



ComfortDelGro’s carbon emissions targets are consistent with reductions necessary to limit global warming to 1.5°C above preindustrial levels, the most ambitious goal of the Paris Agreement. Additionally, the emissions from our value chain (Scope 3 GHG emissions) align with the SBTi’s criteria for ambitious value chain goals, espousing current best practices. As such, we aim to reach a 54.6% reduction in absolute Scope 1 and Scope 2 greenhouse gas (GHG) emissions from operations, and a 61.2% reduction in absolute Scope 3 GHG emissions from fuel and energy-related activities by 2032 from a baseline year 2019<sup>35</sup>.

Figure 7. Proportion of hybrid taxis/buses across geographies based on our decarbonisation plan (as at 31 Dec 2022<sup>36</sup>)

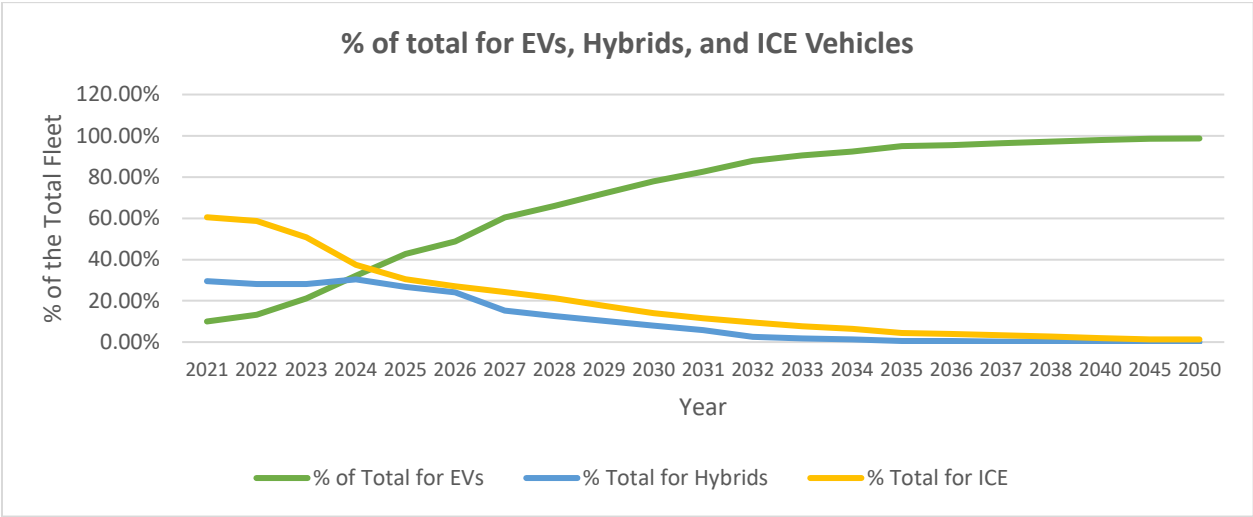
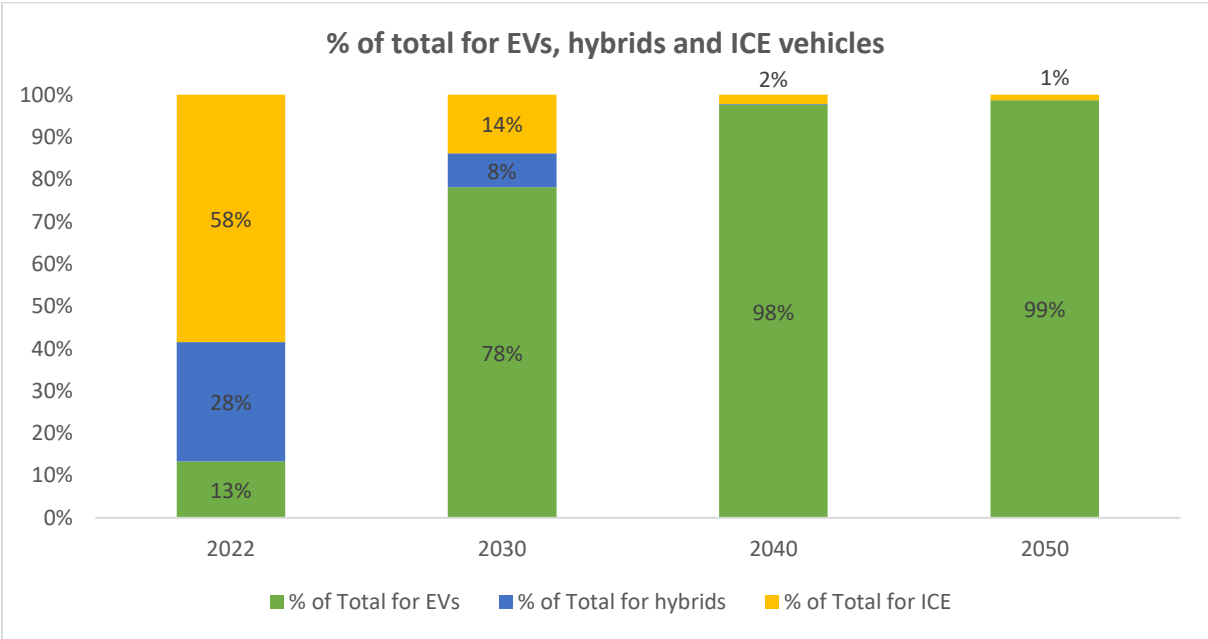


Figure 8: Proportion of electric, hybrid and ICE vehicles



<sup>35</sup> ComfortDelGro has established 2019 as the baseline year as it is a closer representation of our emission levels before the onset of COVID-19 pandemic.

<sup>36</sup> The decarbonisation plan and pathway is subject to change depending on potential changes on business plans and strategies.

### ***Changing consumer expectations***

Alongside carbon pricing, changing consumer expectations was identified as one of the market transition risks and opportunities that the Group may face. With the increasing regulations to decarbonise countries' economies and increasing awareness from a personal consumption point of view, consumer expectations of the transport sector and services provided by transport providers may change. The cost pass-through from increasing electricity and carbon pricing may also affect the affordability of transportation services. This may include expecting and demanding greener and low-carbon transport options, that are affordable and accessible.

Global sales and market share of electric cars have been increasing over the years, where in 2021, electric car sales more than doubled representing close to 9% of global car market<sup>37</sup>. Shifting towards public transport has also become particular evident in urban cities where congestion is prevalent, with consumers increasingly shifting towards cycling and public transport for their commute.

Singapore's LTA Master Plan outlines the government's visions and efforts to decarbonise the land transport system and strengthen commuters experience by improving the connectivity of the public transport system. Similarly, UK's Decarbonising Transport framework highlights the country's plan to decarbonise their transport system. The main tenets of the framework include enhancing cycling and walking schemes, strengthening bus networks and electrification of railways. In Australia, they are likewise making efforts to transition away from fuel and petrol cars to walking, bike-riding, zero-emissions public transport and EVs. In China, the government is also taking intensive efforts to advance green transportation to achieve no less than 70% of travel to be conducted through environmentally friendly means in cities with populations of one million or more by 2030.

The changing consumer expectations is also seen as an opportunity for ComfortDelGro as we strive to provide greener fleets with our transition plan. In 2019, we set up a US\$100 million venture capital fund aimed at investing in a portfolio of technology start-ups in the mobility and automotive industry globally. Through the venture capital fund, we have established a S\$30 million Autonomous Vehicle Centre of Excellence to focus on the research and development of AV-related capabilities over the next five years.

With these initiatives in place, ComfortDelGro is able to leverage on the potential expectations from consumers from transport providers to provide low-carbon transportation options and align with national ambitions.

### ***Strategies for transition risks and opportunities***

Through the climate scenario analysis, we are better able to understand the transition risks and opportunities that is relevant and prevalent to ComfortDelGro. We will continue to decarbonise our fleet to reduce our emissions and to meet the increasing demand for low-carbon transportation. Going forward, all the information derived will aid us in refining our business strategies and decisions to ensure the resilience of our strategies.

<sup>37</sup> Electric cars fend off supply challenges to more than double global sales, [IEA, 2022](#)



## Risk Management

*This section provides details on how ComfortDelGro identifies, assesses, and manages climate-related risks.*

### **a) Describe the organisation's processes for identifying and assessing climate-related risks.**

The climate risk assessment was overseen by ComfortDelGro's TCFD working group which is comprised of the Group Sustainability Office, Group Risk Office, Group Finance Office and representatives from key Business Units. The working group members were selected with the required expertise and experience to ensure the processes for identifying and assessing climate-related risks and opportunities were appropriately aligned for ComfortDelGro.

A climate risk screening and scenario analysis was used to identify and assess the most pertinent physical (chronic and acute) and transition climate risk applicable to our operations. This helps to reduce the uncertainty associated with executing our business operations and mitigate potential adverse impacts on our businesses. The climate risk screening and scenario analysis was both performed at a country-level and regional-level where appropriate.

The risk screening undertaken involved screening ComfortDelGro's operations, identifying the material climate risks and opportunities in each operational location and determining first and second order risks. First order risks are risks which directly affect ComfortDelGro's operations and assets. For instance, physical risks such as floods can cause damage to ComfortDelGro's property and fleets. On the other hand, second order risks are experienced by ComfortDelGro through cost pass-through.

For example, due to the nature of operations, ComfortDelGro does not experience direct implications of carbon costs but may experience financial impacts indirectly through increasing electricity prices. This allowed us to narrow down on the quantifiable risks and determine the assumptions necessary for the scenario analysis.

Other factors and considerations that went into determining which climate-related risks and opportunities were to be quantified included the quality of information and sources available to comprehensively understand and quantify the identified risks. Second-order risks and impacts not quantified are qualitatively assessed and taken into consideration.

Subsequently, the climate scenario analysis was performed for our first order risks. The modelling approach for each physical and transition risks is determined by the relevant financial metric, risk factor and relevant information available.

With the rising mean temperatures and necessary electricity for cooling, we have identified the higher cooling demand through the number of cooling degree days and modelled the additional electricity costs necessary for ComfortDelGro's operations. With the availability of data on the regional-level, we were able to understand the additional financial impact on a regional level and understand which regions incurred the highest additional cooling costs. In the identification of the risks to manpower due to chronic heat stress, we have used ComfortDelGro's cost of labour and the potential loss of productivity.

For flash floods, river floods and tropical cyclones, we have used our FY2022 revenue as a benchmark for financial impact alongside risk factors such as the relative impact of physical damage as a percentage of gross domestic product to model the revenue loss in each time horizon and scenario. Due to the lack of available data to identify the risks for flash floods, river floods and tropical cyclones on a regional level, we have quantified these climate-related risks on a country level.

On the other hand, the modelling approach for carbon pricing risk combined ComfortDelGro's existing carbon emissions, decarbonisation plan and key assumptions to derive expenses relating to carbon pricing. While ComfortDelGro does not experience direct implications of carbon costs due to the nature of our operations, carbon costs may lead to an increase in electricity prices.

To understand the extent to which carbon prices may affect ComfortDelGro, a 'what if' scenario was applied where carbon costs was internalised by the organisation. Within the 'what if' scenario, we compared an unmitigated case (i.e. no carbon reduction plan, business as usual, no mitigation measures) and a mitigation case with ComfortDelGro's decarbonisation plan and mitigation measures applied. In doing so, we were able to comprehend the benefits of implementing decarbonisation strategies from a financial perspective.

The assessment of the significance of the impacts from the climate-related risks to ComfortDelGro informed by the climate scenario analysis was outlined in the Strategy section.

## **b) Describe the organisation's processes for managing climate-related risks**

The potential financial impacts due to physical and transition risks were identified during the screening exercise and further refined in the scenario analysis. We have also identified the potential opportunities presented to ComfortDelGro.

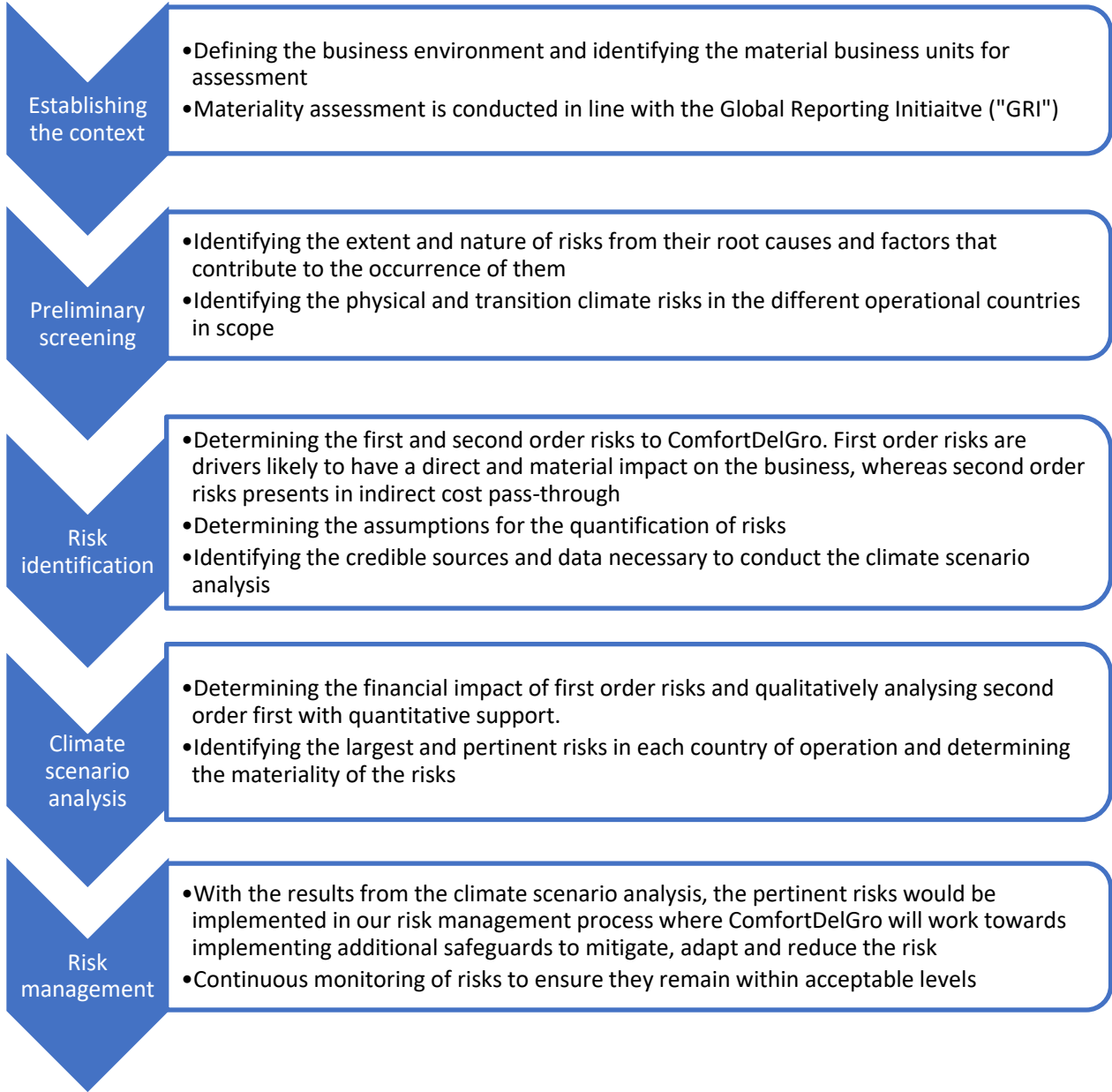
ComfortDelGro incorporated results of the climate scenario analysis into our overarching strategy, as well as into our Business Unit's operational strategies for the effective management of relevant climate-related risks and opportunities. For example, physical climate risks are considered as part of ComfortDelGro's other risks such as natural disasters.

While climate risks are not always considered as immediate Tier 1 risks, it remains on ComfortDelGro's risk universe. When these risks become more pertinent, a refresh of the risk assessment is conducted, keeping regional and Business Units nuances in mind. Following the ERM process, appropriate management strategies will be developed and deployed appropriately, such as updating the business continuity plans to consider climate impacts and ensuring adequate insurance is in place.

Our Sustainability Committee is responsible for maintaining oversight of ComfortDelGro's sustainability ambitions, strategies and performance, including climate-related risks and opportunities. Decisions to mitigate, transfer and control ComfortDelGro's climate-related risks are managed by the Audit and Risk Committee that works closely with the Sustainability Committee. The following figure below (Figure 9) illustrates ComfortDelGro's process for identifying and managing our climate risks and opportunities.

As a whole, ComfortDelGro aligns our sustainability framework to global standards, including adopting recommendations from TCFD and the Global Reporting Initiative (“GRI”). We constantly leverage technologies and digital solutions to monitor our sustainability performance across our business operations in the Group and work closely with our Partners, Suppliers and Contractors throughout the supply chain. We will continue to invest and demonstrate our commitment to being a responsible transport provider.

Figure 9: Process for identifying and managing climate risks



**c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.**

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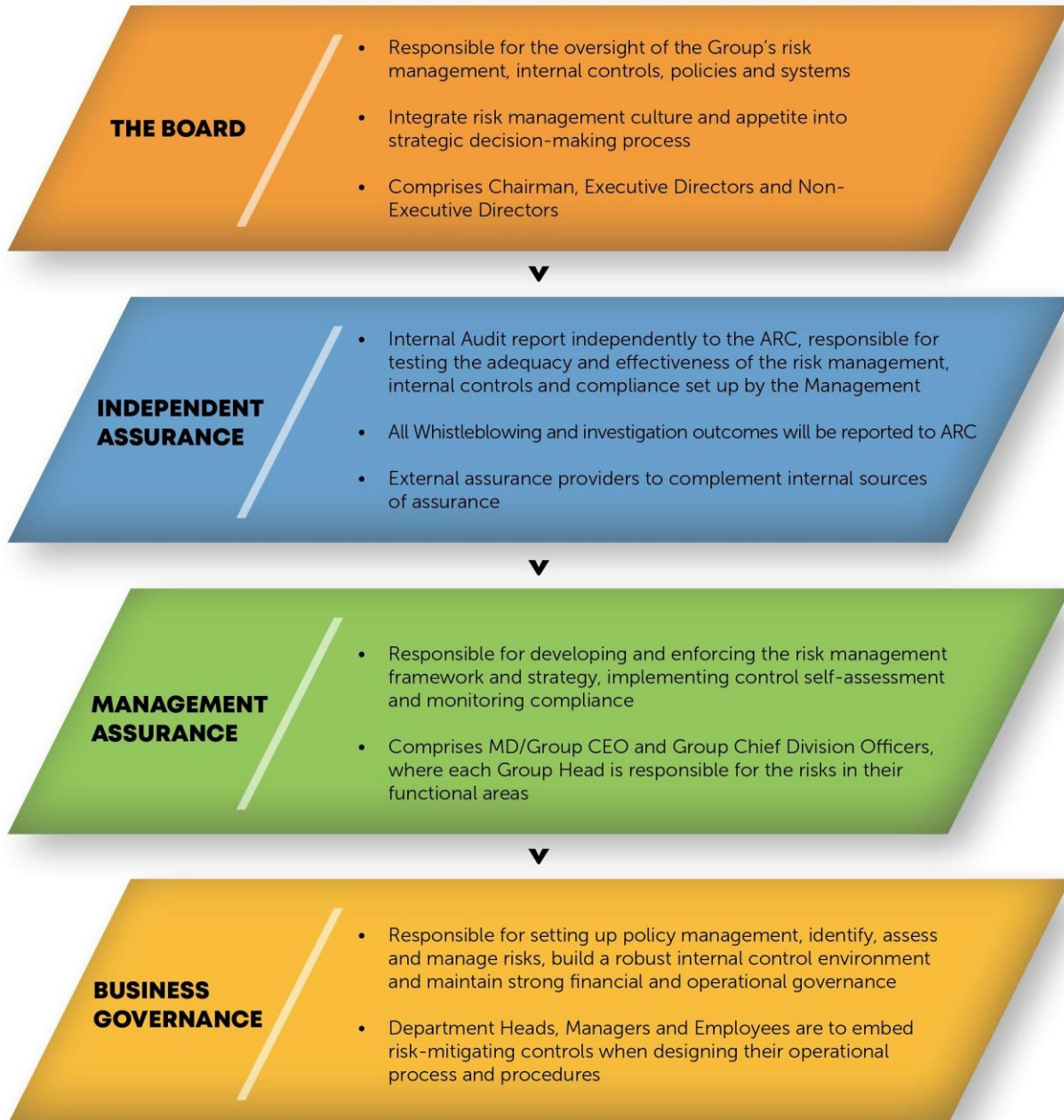
ComfortDelGro has in place a robust Enterprise Risk Management (“ERM”) Framework to understand the complexities of the risks and opportunities arising from our operations. Our risk management process is a continuous and iterative one where risk identification, assessment and risk management practices are reviewed and updated regularly to manage risks proactively. The Group believes in setting a robust risk management culture by ensuring good awareness, attitudes and behaviour towards risk management. We conduct an annual review of our Enterprise Risk Register, as part of our Risk Management Framework. In this process, climate-related risks are evaluated on its relative significance in relation to other risks during the review.

We aim for continuous improvements by aligning ourselves with best practices and lessons learned. In 2020 and 2021, we leveraged our external consultants’ expertise to implement a refreshed risk management framework and assist in preparing the Risk Control Self-Assessment for the Risk Owners. In 2022, we continued to improve our risk culture within the Group and regularly exchanged risk knowledge with our CEOs and risk leads. We have refreshed our risk universe and conducted Risk Prioritisation Workshop to ensure key risks are in accordance with our changing risk environment landscape.

With the climate scenario analysis, ComfortDelGro have also incorporated it into our ERM processes, as well as our Business Unit’s operational strategies. Climate risks are incorporated into our ERM framework and risk registers as part of risks such as natural disasters. Although climate risks are not always considered immediate Tier 1 risks, they remain on ComfortDelGro’s risk register where controls are put in place to mitigate its impact. If these risks become more pertinent, they are flagged higher on the risk register where appropriate management strategies will be developed and deployed appropriately.

ComfortDelGro’s Board has overall risk governance responsibility and sets the tone for the Group as well as the respective entities. The Audit and Risk Committee (“ARC”) assists the Board in maintaining risk management and internal controls oversight. The ARC also assists the Board in ensuring the Management establishes and enforces a sound system of risk management and internal controls to safeguard the Group’s assets and Shareholders’ interests, and that a robust system and processes is in-place to identify and manage risk enterprise-wide.

Figure 10: Risk management responsibilities through the “four lines of defence”



## Metrics and Targets

*This section outlines the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.*

### **a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.**

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Since the start of our sustainability reporting journey in 2015, ComfortDelGro has been committed to reporting and disclosing our performance against ESG-related metrics. Most recently in 2022, we conducted a revised materiality assessment in line with the GRI 2021 with an independent external consultant. Based on these material topics, we have established the key metrics to measure and monitor our environmental performance. These metrics include but are not limited to:

- The proportion of hybrid taxis/buses across geographies
- Air quality emissions
- GHG Emissions (Scope 1, 2 and 3)
- Emission intensity (tCO<sub>2</sub>e per S\$M revenue)
- Fuel Consumption (litres and %)
- Electricity consumption
- Energy intensity (kWh per S\$M revenue)
- Waste generated (hazardous, non-hazardous, e-waste)
- Waste directed to disposal (hazardous, non-hazardous)
- Waste diverted from disposal (hazardous, non-hazardous)
- Water Withdrawn (by Source and in Water Stressed Areas)
- Water intensity (megalitres per S\$M revenue)

ComfortDelGro reports these metrics and the targets for the respective metrics on an annual basis, including historical data to provide insights into our performance over time.

### **b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks**

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Following the GHG Protocol Corporate Standard, we track and disclosure our emissions. In 2022, we undertook a detailed assessment of our GHG inventory to include all our operations under the operational control approach. All GHG emissions are calculated in carbon dioxide equivalents (CO<sub>2</sub>e), including the accounting and reporting of the six GHG covered by the Kyoto Protocol including methane (CH<sub>4</sub>) and nitrous oxide (NO<sub>2</sub>). We have established 2019 as our baseline year for GHG calculations to capture a closer representation of our operations before the COVID-19 pandemic.

ComfortDelGro's Scope 1 emissions are largely attributed to the tail-pipe emissions from our fleet, whereas our Scope 2 emissions primarily comprise of our electricity consumption across our operations, including rail traction power. For our Scope 3 emissions, we selected the most pertinent categories after a preliminary screening to undergo a detailed calculation based on the requirements stated by the GHG Protocol.

Table 11: ComfortDelGro's GHG emissions

GHG Emissions (tCO <sub>2</sub> e)	2019	2021	2022	% change from baseline year 2019
Scope 1 (Direct Emissions)	997,721	744,805	718,810	-25.87%
Scope 2 (Indirect Emissions from Electricity)	206,028	192,982	188,322	-8.63%
Scope 3 (All other indirect emissions)	645,038	550,095	494,545	-20.44%
Total Scope 1 + 2 emissions	1,203,749	937,787	907,132	-22.85%
Total Scope 1, 2 and 3 emissions	1,848,787	1,487,882	1,401,677	-22.02%

Table 12: ComfortDelGro Scope 3 Emissions

Scope 3 category	Screened or calculated	Emissions (tCO <sub>2</sub> e)	Share of total emissions
Category 1: Purchased Goods & Services	Calculated	144,041	29.13%
Category 2: Capital Goods	Calculated	64,053	12.95%
Category 3: Fuel and Energy Use Not Captured in Scope 1 and Scope 2	Calculated	197,975	40.03%
Category 4: Upstream transportation and distribution	Screened	14,567	2.95%
Category 6: Business Travel	Calculated	126	0.03%
Category 7: Employee commute	Screened	20,400	4.13%
Category 11: Use of sold products	Screened	42,915	8.68%
Category 12: End-of-life treatment of sold products	Calculated	29	0.01%
Category 15: Investments	Screened	10	2.11%

As the global economy transitions towards a low-carbon economy, risks related to GHG emissions include regulations to reduce emissions, stronger requirements to reduce the use of diesel and petrol vehicles, volatile fuel and energy costs associated with operations, discrepancies in information from business partners and sub-contractors, and difficulty in assessing complete Scope 3 emissions.

**c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.**

ComfortDelGro has established targets for each of our key material topics. In the management of our climate-related risks and opportunities, we have undertaken a revision of our short-, medium-, and long-term targets related to our key material topics.

As a whole, we aim to achieve growth in green mobility business with EV transport services and installation of EV chargers. Additionally, we strive to develop new business segments associated with green mobility to capture the transition opportunities such as inspection and maintenance of EVs and training our staff to upskill their knowledge on green jobs such as EV technicians.

*Table 13: Climate-related targets*

Topic	Short-term, medium-term and long-term targets
Transition towards low-carbon fleet	<ul style="list-style-type: none"> <li>• Transition 90% of our total car fleet across all our operations globally to cleaner energy vehicles by 2030 and 100% by 2040</li> <li>• Transition 50% of our total bus fleet across all our operations globally to cleaner energy vehicles by 2030 and 100% by 2050</li> <li>• Continue to keep 100% of our total rail across all our operations globally to using electric traction power</li> <li>• Continue to remain abreast of climate-friendly mobility solutions and adopt appropriate solutions for future mitigation and adaptation</li> </ul>
Emissions	<ul style="list-style-type: none"> <li>• 54.6% reduction in absolute Scope 1 and Scope 2 GHG emissions from our operations by 2032 from a baseline year of 2019</li> <li>• 61.2% reduction in absolute Scope 3 GHG emissions from fuel and energy-related activities by 2032 from a baseline year of 2019</li> <li>• Aiming to reach net zero timelines and targets for the transport sector, set by the countries that we operate in</li> </ul>
Energy and fuels	<ul style="list-style-type: none"> <li>• Increase solar PV output to 8 MWp by 2030</li> <li>• Continue to investigate renewable energy options for adoption in our businesses</li> </ul>
Water & waste	<ul style="list-style-type: none"> <li>• 50% of all office buildings globally to be environmentally friendly by 2030 and 100% by 2050</li> </ul>



## Conclusion and Next Steps

ComfortDelGro remains committed to assessing and effectively managing our climate risks and opportunities for our organisation, employees and customers. By identifying and assessing our physical and transition risks and opportunities posed by climate change, it allows ComfortDelGro to identify focus areas to mitigate any material risks while leveraging the opportunities presented by the changing environment.

This second iteration of our TCFD report represents our commitment to managing our climate risks and recognising the additional efforts required to adapt, mitigate and respond to the pertinent climate risks and opportunities. This report further strengthens the granularity of our climate scenario analysis where risks have been identified and modelled on a regional level where possible.

The results from the screening exercise and the climate scenario analysis provided the Group with a targeted analysis into the material risks and opportunities presented by climate change. These results will then be used to enhance our governance, strategy and risk management practices in our organisation. A key component of our sustainability strategy is to keep track of our established environmental metrics and ensure we are progressing towards our short, medium and long-term targets.

Moving forward, we aim to continually strengthen our TCFD reporting and align with market practices, regulatory requirements, and industry reporting practices. This includes working closely with our Business Units to understand their perception of the climate risks and opportunities to strengthen the organisation's mitigation and adaptation strategies, as well as integrating our TCFD Report into our Sustainability Report. This would also entail exploring additional metrics and targets related to climate risks such as remuneration considerations, capitalising on climate-related opportunities and physical risk indicators.

As the global economy transitions towards more sustainable options where greener transportation technology develops, ComfortDelGro strives to leverage on these opportunities. Additionally, when data becomes more readily available, we aim to improve and expand on our financial inputs for the quantification of our climate risks and opportunities in our climate scenario analysis.

## Appendix

### *Methodology, assumptions and limitations*

Subject	Methodology, assumptions and limitation
<b>Additional financial impact</b>	Additional financial impact represents the additional effects from the baseline impacts of climate-related risks and is analysed to understand the increasing effects of climate-related risks.
<b>Financial items growth and environmental data changes</b>	<p>The study is aiming to show the isolated effect of climate change on ComfortDelGro's financials. Thus, no growth rate or inflation rate are factored in the results.</p> <p>For the same reason, environment data such as energy and emissions has also been assumed to be constant in the three future time horizons (as compared to 2022).</p>
<b>Macroeconomic impacts</b>	Macroeconomic effects of climate change such as changes to consumers demand pattern, transportation patterns or distribution of income and industry costs are not quantified in this study, given the high uncertainty of the magnitude and timing of these effects.
<b>Legal, reputational risks and contingent liabilities</b>	These types of risks are mostly intangible and challenging to quantify with reasonable confidence at this point of time.
<b>Scenario analysis</b>	<p>A scenario analysis describes a path of development leading to a particular outcome. As per the TCFD, scenarios are not intended to represent a full description of the future, but rather to highlight central elements of a possible future and to draw attention to the key factors that will drive future developments.</p> <p>As per the TCFD, scenarios are hypothetical constructs, not forecasts, predictions or sensitivity analyses. A key feature of scenarios is that they should challenge conventional wisdom about the future. In a world of uncertainty, scenarios are intended to explore alternatives that may significantly alter the basis for "business-as-usual" assumptions.</p> <p><b>Key features of a scenario analysis:</b></p> <ul style="list-style-type: none"> <li>• Parameters or assumptions, such as carbon price, energy demand and mix, technology, policy etc.</li> <li>• Analytical choices, such as the scenarios used, timing, quantitative or qualitative, scope of applications, data set and model etc.</li> <li>• Business impacts such as costs, revenues, assets, responses, business interruption due to physical impacts etc.</li> </ul> <p><b>Sources and literature used:</b></p> <ul style="list-style-type: none"> <li>• The sources used as inputs in the scenario analysis include but are not limited to following recognised sources:</li> </ul>

	<ul style="list-style-type: none"> <li>• The NGFS &amp; Climate Impact Explorer</li> <li>• The IEA World Energy Outlook</li> <li>• The IPCC AR6 Report</li> <li>• The World Bank Climate Change Knowledge Portal</li> <li>• Other country specific sources and academic studies</li> </ul>
<b>Data</b>	<ol style="list-style-type: none"> <li>1. The area of climate scenario analysis including the associated modelling is still evolving. Therefore, it is important that the uncertainties and limitations associated with climate scenario analysis are understood to ensure that the results are interpreted and used appropriately.</li> <li>2. The data used for scenario analysis such as company-level emissions, business activity and transition plans, as well as government intervention measures, are subject to limited availability or reporting inconsistencies. Hence all use of these sources is subject to interpretation relating to their associated climate-related impacts.</li> <li>3. Data limitations relating to the expansion of different business units, restrict the ability to scale up the analysis, for example emissions, energy and land use data required for climate stress-testing are scarce. The resulting bias towards the larger group may have implications on the portfolio extrapolation. For example, interpolation of country level data for regional specificities as identified in the assessment of river flooding for larger territories with significant differences in regions (i.e. China, Australia) may be biased due to limited data.</li> </ol>
<b>Methodology</b>	<ol style="list-style-type: none"> <li>1. To account for the long-term build-up of climate impacts, climate scenario analysis extends to a time horizon of 30 years, which is much longer than in traditional stress tests, as well as a typical business planning horizon. This introduces a higher degree of complexity and uncertainty from potential changes in the pace of technology advancement, geopolitical and demographic shifts and occurrence of climate tipping points. In addition, credit rating and natural catastrophe models are calibrated to forecast over the short term and not over the decades-long time horizon required for climate scenario analysis.</li> <li>2. Scenario analysis does not capture potential non-linearities and some indirect impacts, such as losses borne by insurance companies and costs of adaptation measures introduced to limit losses. This may therefore understate the climate exposure and vulnerabilities. For example, the assessment of business interruption due to extreme climate events does not capture the potential costs associated with repair and maintenance, business continuity planning activation and any reputational impact related to non-performance of the operations, but it purely captures the losses in revenues associated with an extreme climate event.</li> </ol>

<b>Granularity</b>	<ol style="list-style-type: none"><li data-bbox="540 205 1421 415">1. Bottom-up firm level analysis requires granular data such as absolute emissions or intensity for various scope of a firm's activities, which currently varies in terms of availability, granularity, and accuracy. With the focus on climate risk scenario analysis by the industry and regulators, it is expected that continuous effort will be invested to address such limitations over the next couple of years.</li><li data-bbox="540 457 1421 560">2. The climate scenarios and parameters from international think tanks and research bodies are often calibrated at levels of granularity which may not fully reflect local market dynamics and constraints.</li></ol>
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