# Driving Singapore's low-carbon ambition through environmental stewardship

As Singapore's trusted transport provider, we are aligning our efforts with LTA's Land Transport Master Plan to achieve a greener future and net-zero emissions by 2050.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

## EMISSIONS AND ENERGY


Singapore has made climate commitments through its second Nationally Determined Contribution, which was submitted to the United Nations Framework Convention on Climate Change in February 2025. Singapore has committed to a reduction of emissions to between 45 and 50 million tonnes of carbon dioxide equivalent ($MtCO_2e$) in 2035 en route to net-zero by 2050.

As a leading transportation provider, we recognize our role in supporting Singapore's transition to a low-carbon economy by reducing peak land transport emissions by 80% from 2016 levels by 2050. We also align with LTA's targets and aim to have 100% of our buses running on cleaner energy by 2040. Additionally as a subsidiary of ComfortDelGro, we are aligned with ComfortDelGro's commitment to the Science Based Targets Initiative (SBTi), focusing on sector-specific decarbonisation pathways in line with trajectories that lead to a global warming temperature increase of less than 1.5°C.

We are dedicated to minimising our environmental impact by using energy responsibly and efficiently. To achieve this, we focus on high-consumption areas and implement tailored practices, including the integration of green and renewable energy sources and energy-saving designs and equipment. We analyse energy consumption patterns closely and conduct quarterly reviews of our conservation plans, in compliance with all legal energy management requirements. SBS Transit's Bus and Rail Energy Efficiency Workgroups leads energy consumption initiatives in line with climate commitments, meeting regularly to track performance and progress of energy-saving measures. They focus on improving efficiency and reducing wastage in key areas like air conditioning in our premises and train traction energy consumption, which comprise over half of our energy use. We keep our stakeholders updated on our ongoing initiatives through quarterly briefings, email notifications, and monthly reports on energy performance trends.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

EMISSIONS AND ENERGY

## ENERGY EFFICIENCY OF OUR PUBLIC TRANSPORT OPERATIONS

### Improving Fuel Efficiency

To optimise fuel consumption and minimise our environmental footprint, we strategically prioritise efficiency. This includes meticulous bus schedule optimisation, actively promoting fuel-efficient driving through our telematics system, and deploying buses based on fuel economy. We also continuously explore innovative technologies and have embarked on trials with partners, to further enhance fuel efficiency within our fleet.

### Cleaner Energy Bus Fleet Expansion

In 2024, we expanded our cleaner energy bus fleet to 110, up from 57 in 2023. This growth is supported by the newly commissioned Sengkang West Bus Depot, a first-of-its-kind multi-storey facility equipped with 240 EV chargers for large-scale e-bus deployment. To ensure a smooth transition, we have forged strategic partnerships with industry leaders, focusing on battery management and recycling. Coupled with extensive technician training in high-voltage systems, this positions us to operate Singapore's largest electric bus fleet in 2025. Demonstrating our proactive approach, we continue to strengthen our technical and operational capabilities for a sustainable electric transformation.

### Optimised Timetable for Energy Savings

During the LTA-UITP Singapore International Transport Congress and Exhibition, we took a significant step towards sustainability by signing a Letter of Intent with Alstom to deploy its AI-driven Optimised Timetable for Energy Savings (OTES) software on NEL. This innovative solution is designed to optimise train schedules, allowing us to utilise the kinetic energy generated by decelerating trains to power those that are accelerating.

Similarly, the trial of Controlguide AIRO, an AI-based system to enhance passenger experience through demand-driven train timetables, is still in progress on DTL. By implementing these technologies, we aim to enhance energy efficiency and make substantial reductions in our carbon footprint, aligning with our commitment to sustainable transportation.

## ENERGY EFFICIENCY AT OUR PREMISES

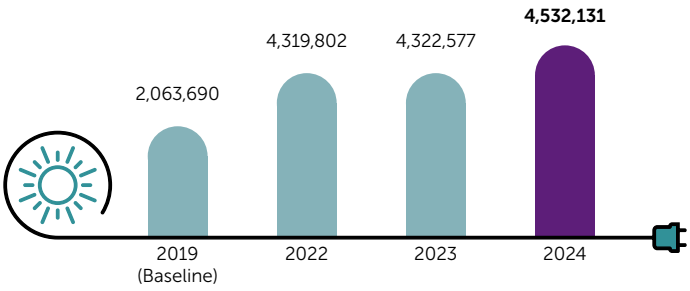
As the pursuit of achieving net-zero emissions intensifies and energy costs continue to escalate, we maintain a close and vigilant oversight of all aspects of energy usage while striving for optimisation. This year, we installed more than 90 smart meters with occupancy and temperature sensors at seven sites, aiming to reduce energy consumption at these installed premises by 4%, through the optimisation of air conditioning. These meters and sensors allow us to track our consumption levels through an AI dashboard. Besides working with LTA on asset replacement for aging equipment and using new technologies to optimise existing ones, we are also exploring the use of hybrid cooling systems. This approach is expected to optimise the cooling systems on our premises and decrease our dependence on energy-intensive mechanical systems.

### Solar Energy Generation

To enhance our commitment to energy efficiency, SBS Transit has further developed its existing solar energy projects, targeting to achieve a solar PV capacity of 7MWp by 2030 to reduce reliance on traditional energy sources, such as grid electricity from non-renewable sources.

In December 2024, we completed installations of new solar panels at four locations, namely Harbourfront Interchange, Kampong Bahru Terminal, Shenton Way Terminal, and Ulu Pandan Depot. These efforts increased our solar generation capacity by 21% compared to 2023, contributing to our net-zero energy building goals. Surplus energy produced from our solar installations is channeled to the grid, thereby contributing to Singapore's renewable energy consumption.

**Solar Generated (kWh)**




### Heat-Reflective Paint for Building Cooling Trials

As part of ongoing efforts to reduce urban heat and improve energy efficiency, a project was undertaken to coat our building facade with heat-reflective paint. The paint contains pigment that reflects solar heat, minimising building heat absorption and reducing the need for air-conditioning to maintain a comfortable indoor temperature. The coating proved effective, lowering the thermal profile of the walls by 1.9°C, which helps lower energy consumption, contributing to greater efficiency and sustainability.

This initiative aligns with broader nationwide efforts to mitigate the urban heat island effect.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

EMISSIONS AND ENERGY

## Our 2024 Performance and Looking Forward

In 2024, our gross Scope 1 emissions decreased by 0.6%, while our gross Scope 2 emissions increased by 3.1% compared to our 2022 baseline figures. The slight decrease in our Scope 1 emissions is likely attributable to the reduction in fuel consumption due to the smaller fleet size with the expiry of the Jurong West bus package in September. However, the improvement in data integrity from our revised data collection and calculation methodologies likely led to the increase in our Scope 2 emissions.

In this reporting year, SBS Transit reviewed the Scope 3 categories, covering indirect emissions, that were screened in the previous reporting year. With improvements in our data collection process, we were able to refine our Scope 3 reporting and calculated emissions for previously screened Category 4 (Upstream transportation and distribution) and Category 7 (Employee commute).

We have reviewed the applicability of the Scope 3 categories reported previously and the identified categories that were deemed most relevant remain unchanged (see Scope 3 indirect emissions profile below). The detailed emissions calculations for these applicable Scope 3 categories were then performed based on the requirements outlined within the GHG Protocol.

With the improvements in data collection, as well as use of most recent updated emission factors, we have seen a decrease in our Scope 3 emissions by 32.0% from our 2022 baseline figures. This substantial decline is mainly due to the use of the latest US EPA emissions factors for our Scope 3 Category 1 and 2 emissions, and the latest DEFRA emissions factors for our Category 5 and 12 emissions, which have decreased from the previous year.

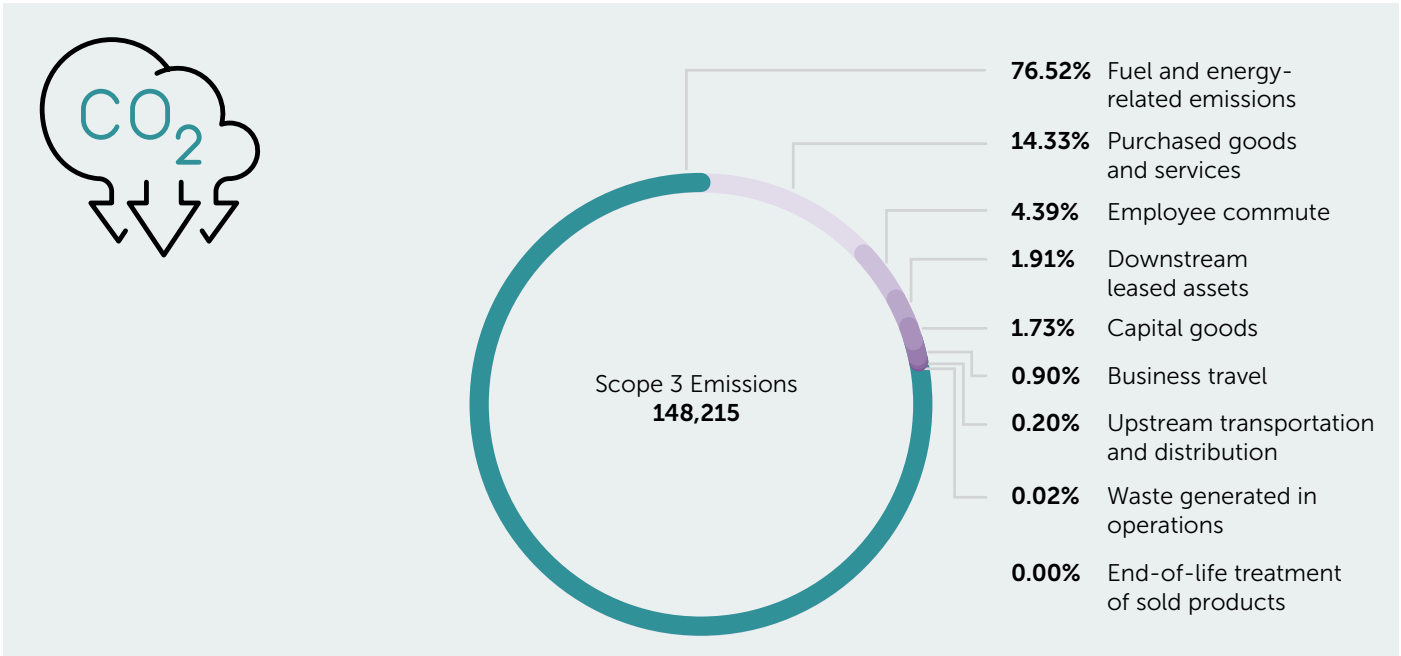
Our energy and emissions target remains consistent from the previous year, and we continue to strive towards a 25% absolute reduction in Scope 1 and 2 fleet emissions by 2030[2].

In 2024, our total Scope 1 and 2 fleet emissions was 2.22% higher than our 2022 baseline figures, despite operating at a lower capacity. This is largely due to the improvements in information availability and additional data points captured in the measurement of emissions over the past two years.

To achieve our 2030 fleet emissions target, we look to continue our adoption of clean vehicles, as well as investing in energy efficient fittings and practices within our premises. Additionally, we are actively pursuing technologies to optimise fuel usage across our vehicular fleet. To further enhance our commitment to energy efficiency, SBS Transit plans to expand its solar energy projects, progressively scaling up generation capacity to meet our full operational needs and reduce reliance on traditional, non-renewable energy sources.

As we progress toward low-carbon transportation solutions and work to decrease our carbon emissions, we are exploring the possibility of using carbon credits to offset any remaining emissions. Furthermore, we will look into implementing an internal carbon price to help manage our carbon emissions. Both initiatives will be aligned with the actions of our parent company, ComfortDelGro.

**Scope 3 Indirect Emissions Profile**



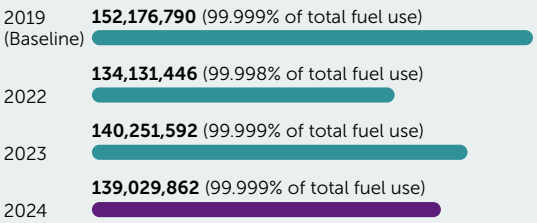

2 The type of greenhouse gases considered in our emissions targets are units of kilograms of $CO_2e$ equivalents of $CO_2$ equivalents of carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride SF6 and nitrogen trifluoride NF3, based on the UK Government GHG Conversion Factors for Company Reporting.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

## EMISSIONS AND ENERGY

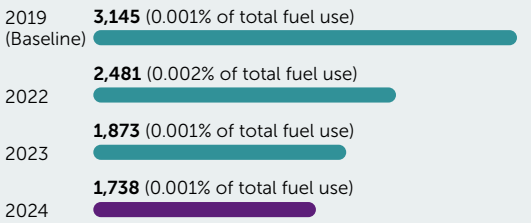
### TR-RO-11A.3, TR0401-03: TOTAL FUEL CONSUMED

**Non-Renewable Fuels (Diesel)**
(Litres)




**-9%** Change from baseline year

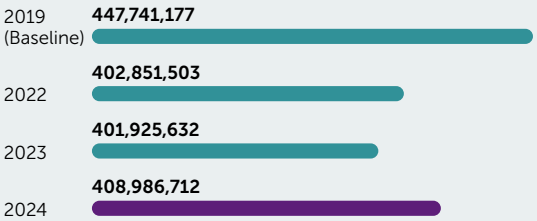
**Non-Renewable Fuels (Petrol)**
(Litres)




**-45%** Change from baseline year

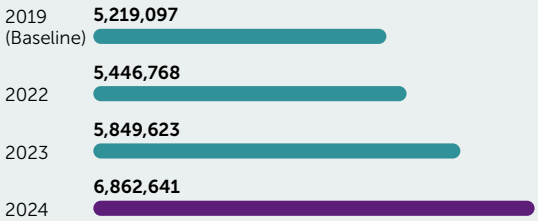
### GRI 302-1: ELECTRICITY CONSUMPTION, GRI 302-2 ENERGY CONSUMPTION OUTSIDE THE ORGANISTION

**Electricity Purchased** used within the organisation
(kWh)



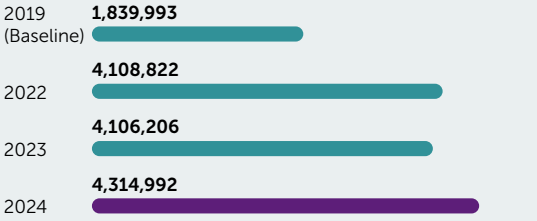

**-9%** Change from baseline year

**Electricity Purchased** used outside the organisation
(kWh)



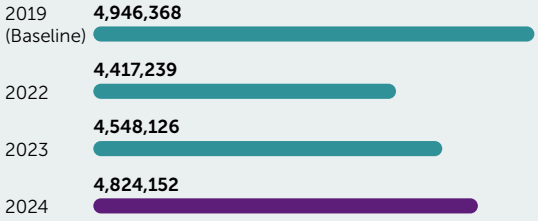

**31%** Change from baseline year

**Renewable Electricity Consumed**[3]
(kWh)




**135%** Change from baseline year

**Cooling Consumption**
(kWrh)

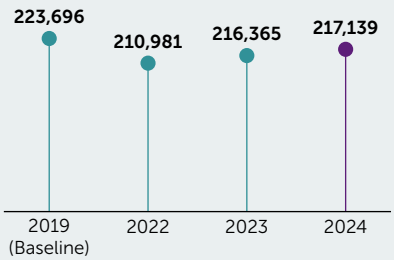



**-2%** Change from baseline year

### GRI 302-1: ELECTRICITY SOLD

**Electricity Sold**
(kWh)

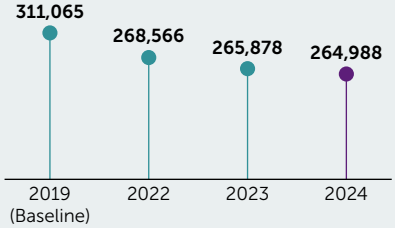
**-3%** Change from baseline year




### GRI 302-3: ENERGY INTENSITY[4]

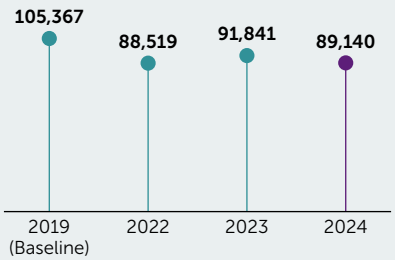
**Total Electricity Intensity** used within the organisation
(kWh/S$M Revenue)

**-15%** Change from baseline year




**Total Fuel Intensity**
(Litres/S$M Revenue)

**-15%** Change from baseline year




All types of energy within the organisation have been factored into the calculation of the intensity ratios presented.

3 All reported renewable electricity consumed was generated on-site in SBS Transit's premises as solar energy.
4 The revenue used for all our intensity ratios are S$1,559.73 million for the financial year of 2024.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

## EMISSIONS AND ENERGY

**GRI 305-1: DIRECT (SCOPE 1) GHG EMISSIONS[5]**
**GRI 305-2: ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS**
**GRI 305-3: OTHER INDIRECT (SCOPE 3) GHG EMISSIONS[6]**

**Scope 1** (Direct Emissions)
GHG Emissions ($tCO_2e$)

| | |
|---|---|
| 2022 (Baseline) | **397,731** (51% of total emissions) |
| 2023[7] | **405,087** (54% of total emissions) |
| 2024 | **395,535** (55% of total emissions) |

**Scope 2** (Indirect Emissions from Electricity)
GHG Emissions ($tCO_2e$)

| | |
|---|---|
| 2022 (Baseline) | **165,229** (21% of total emissions) |
| 2023[7] | **168,706** (22% of total emissions) |
| 2024 | **170,370** (24% of total emissions) |

**Scope 3** (Indirect Emissions)
GHG Emissions ($tCO_2e$)

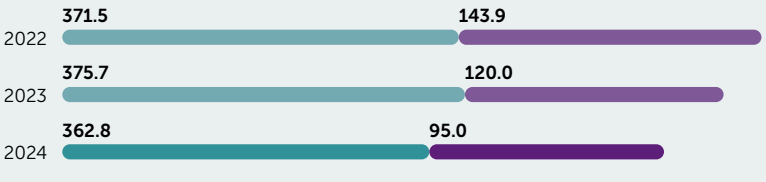
| | |
|---|---|
| 2022 (Baseline) | **217,982** (28% of total emissions) |
| 2023[7] | **183,280** (24% of total emissions) |
| 2024 | **148,215** (21% of total emissions) |

Scope 1 includes $CO_2$, $CH_4$ and $N_2$

| Scope 3 Category | Screened or Calculated | Methodology | Total Emissions ($tCO_2e$) |
|---|---|---|---|
| **Category 1: Purchased goods and services** | Calculated | GHG Protocol: Spend-based method | 21,246 |
| **Category 2: Capital goods** | Calculated | GHG Protocol: Spend-based method | 2,562 |
| **Category 3: Fuel- and energy-related activities not included in Scope 1 and Scope 2** | Calculated | GHG Protocol: Average-data method | 113,413 |
| **Category 4: Upstream transportation and distribution** | Calculated | GHG Protocol: Spend-based method | 296 |
| **Category 5: Waste generated in operations** | Calculated | GHG Protocol: Waste-type specific method | 31 |
| **Category 6: Business travel** | Calculated | GHG Protocol: Distance-based method | 1,332 |
| **Category 7: Employee commute** | Calculated | GHG Protocol: Distance-based method: Based on average emission factors estimated through a representative sample from the data collected through an employee commute survey which is then applied to SBS Transit's employee headcount | 6,508 |
| **Category 12: End-of-life treatment of sold products** | Calculated | GHG Protocol: Waste-type specific method | 0 |
| **Category 13: Downstream leased** | Calculated | GHG Protocol: Asset-specific method (buildings) and Lessee-specific method (vehicles) | 2,827 |

**GRI 305-4: GHG EMISSIONS INTENSITY**

**Scope 1, 2 and 3 Emissions Intensity**
($tCO_2e$/S$M Revenue)



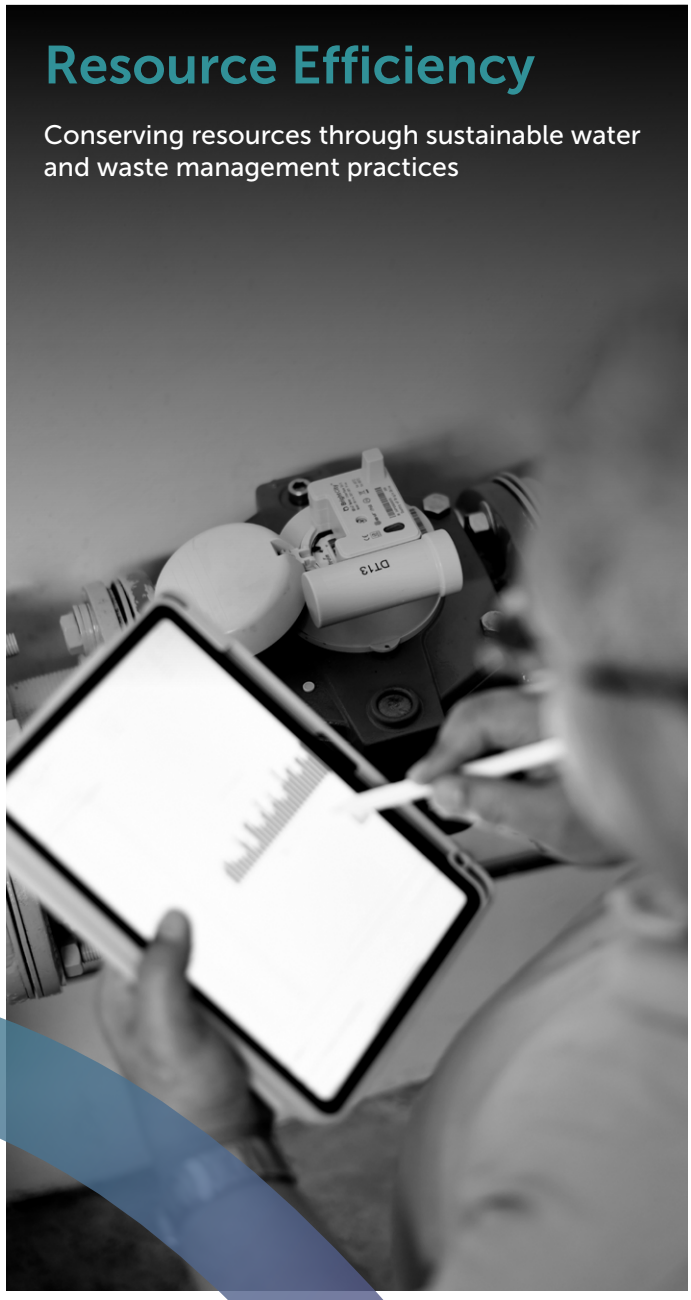

**Total**
(Scope 1, 2 and 3)

| | |
|---|---|
| 2022 | 515.4 |
| 2023 | 495.7 |
| 2024 | 457.9 |


5 All GHG emissions calculations were completed using the operational control approach in accordance with the GHG Protocol. Our emissions were calculated using a mix of US EPA, DEFRA 2024, and the Singapore Emissions Factor Registry, where applicable.
6 All GHG emissions are calculated in carbon equivalent ($CO_2e$), and this also includes all appropriate GHG such as methane ($CH_4$) and nitrous oxide ($N_2O$).
7 2023 Scope 1, 2 and 3 emission figures are restated following improved data collection and calculation methodologies for refrigerant consumption and waste, and updated cooling consumption emission factors.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

RESOURCE EFFICIENCY




We are dedicated to managing and mitigating the environmental impacts of consumption within our operations and facilities by implementing water conservation and waste reduction strategies. We consistently monitor and report on our water usage and waste generated across all assets and premises, and we actively explore potential initiatives and measures to enhance our performance in these areas.

## WATER

We recognise the critical importance of freshwater as a finite and essential natural resource and understand the urgent need to maintain its accessibility. Water is extensively used in our daily operations such as vehicle and premises cleaning, operating sanitary facilities and supporting chilled water systems for air-conditioning. The water supply at our facilities is sourced from the Public Utilities Board (PUB) of Singapore and NEWater.

To ensure the sustainability of water as a vital resource, we are committed to intensifying water conservation efforts through the implementation of effective management and usage optimisation strategies, as guided by our Water Policy. This includes the installation of water-efficient taps and fittings at all locations that meet at least two ticks under the Water Efficiency Labelling Scheme. Our Water Management Workgroup regularly tracks and analyse consumption patterns to identify trends and areas for improvement, and manages water usage across our operations through water conservation and recycling initiatives. We strive to continuously refine our practices to enhance the efficiency of our water usage. Additionally, we ensure that all wastewater generated is properly treated before discharging to the public drainage system. We continue to engage our stakeholders on responsible water consumption to achieve our sustainability objectives.

**Enhancing Water Efficiency**

In 2023, we focused on enhancing water efficiency across our network. A key achievement was the optimisation of track and tunnel washing schedules on NEL, resulting in significant water savings. Building on this success, we expanded this initiative to DTL in 2024, saving 4.5 megalitres of water and achieving an 86.7% decrease in consumption across both lines. Furthermore, recognising the increasing demand for air-conditioning due to rising temperatures, we successfully implemented the recycling of condensate from Air Handling Units at 13 NEL stations. This innovative approach effectively collects and reuses condensate in the supply line, saving 35.4 megalitres of water, representing a 17.9% reduction in water consumption. These initiatives not only demonstrate our commitment to environmental sustainability but also contribute significantly to Singapore's national water conservation efforts.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

RESOURCE EFFICIENCY

**Optimising Automatic Bus Wash Systems for Water Sustainability**

Water is primarily used for vehicle cleaning within our operations. To optimise this process, all our depots are equipped with Automatic Bus Wash Systems (ABWS). These systems not only enhance efficiency but also incorporate water recycling capabilities. To further reduce water consumption, our Water Workgroup conducted a study to identify areas for improvement in the ABWS. This led to several key enhancements at Ulu Pandan Depot and Seletar Depot, including installing additional pumps to increase the volume of captured recycled water and upgrading nozzles to lower flow rates and increase water pressure during the final rinse, improving efficiency. These improvements resulted in a significant water consumption reduction of up to 58%, earning us the prestigious Water Efficiency Awards (Projects) 2024 from PUB.


Mr Baey Yam Keng, Senior Parliamentary Secretary, Ministry of Sustainability and the Environment (left) presented the Water Efficiency Award (Projects) to Mr Chua Eng Kian, Vice President, Plans and Projects (right), during PUB's Singapore Watermark Awards on 26 March 2024.

**Harnessing Smart Meter Technologies**

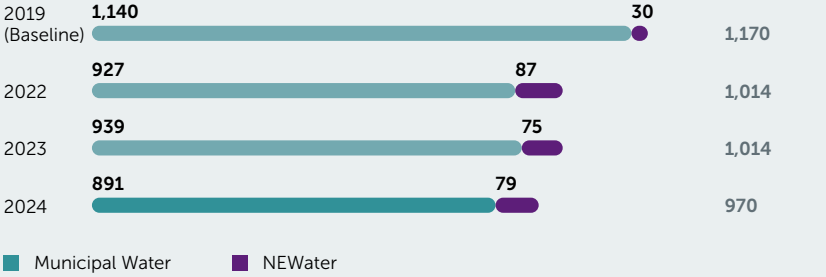
In 2024, we embarked on the installation of smart utility meters across selected Bus and Rail facilities. This initiative aligns with SBS Transit's commitment to embracing cutting-edge technologies to enhance operational efficiency. These meters provide real-time consumption data integrated into our Smart Operations and Maintenance Platform, enabling the pinpointing of usage spikes. This empowers SBS Transit to take immediate and targeted action to address inefficiencies. Furthermore, the historical data collected by these smart meters provides valuable insights into usage trends and patterns, facilitating the development of resource management strategies.

## Our 2024 Performance and Looking Forward

In 2024, our concerted efforts to implement water conservation measures and initiatives demonstrated encouraging results, with a reduction of 17.1% compared to 2019 baseline figures. This achievement is particularly noteworthy given the expansion of our operational capacities. Our dedication to sustainability is underscored by our strategic approach, which includes leveraging on technology, such as the installation of smart water meters to enhance data accuracy and improve leak detection capabilities. Moving forward, we are committed to further reducing water usage by continuously refining our strategies and exploring innovative solutions.

**GRI 303-3 AND GRI 303-5: WATER WITHDRAWN BY SOURCE, AND TOTAL WATER CONSUMPTION**

**Total Water Consumption**
(Megalitres)

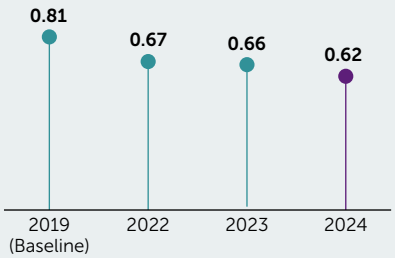



**Total**
(Megalitres)

| | |
|---|---|
| 2019 (Baseline) | 1,170 |
| 2022 | 1,014 |
| 2023 | 1,014 |
| 2024 | 970 |

**SGX CORE METRICS: WATER CONSUMPTION INTENSITY**

**Water Consumption Intensity**
(Megalitres/S$M Revenue)



# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

RESOURCE EFFICIENCY

## WASTE MANAGEMENT AND CIRCULARITY

Waste generated at industrial and commercial premises form a large part of Singapore's overall waste generated. Proper waste management and end-of-life considerations are essential to prevent the rapid accumulation of waste, which can exacerbate issues like land scarcity, health risks, pollution, and other negative socio-environmental impacts.

Due to the nature of our operations, various types of waste are generated, such as paper, used train components and automotive parts. Improper handling and disposal of automotive wastes could potentially lead to negative health and environmental impacts downstream of our value chain. Hence, we work closely with our waste management partners to ensure proper waste handling. SembWaste and BNL Waste Management handle the collection of general waste and mixed recyclables, while specific recyclables are collected by recycling companies approved by the National Environmental Agency.

The Waste Workgroup is dedicated to managing waste through proper disposal, recycling, and waste reduction initiatives. They monitor waste generated daily alongside with the implementation of waste management best practices across departments aiming to drive continuous improvements within our waste management practices.

Our initiatives support our commitment to the Singapore Zero Waste Masterplan through sustainable consumption and waste management. We focus on reducing waste generation by optimising collection and promoting recycling and reuse. We are making progress to integrate the 3Rs (Reduce, Reuse, Recycle) across our operations, in line with our Waste Policy.

**Pushing the Envelope for Parts and Components Life**

Building on our waste reduction initiatives in the past year, the Maintenance Failure Review Board continues to identify opportunities for either lifespan extension or transitioning to condition-based replacements. Guided by a systematic review process, field data, and engineering assessments, the shift from preventive to condition-based maintenance has allowed us to optimise costs and save materials. By moving to periodic inspections and targeted replacements, we have saved 15.7 tonnes of materials in 2024, and we expect to see increased savings over the years as we further develop the programme, underscoring our commitment to sustainability while maintaining safety and efficiency.

**Optimising Reducing, Reusing, and Recycling Initiatives to Minimise Landfill Impact**

SBS Transit is committed to minimising its environmental impact throughout its operational processes. We continue to maximise our reuse and recycle initiatives across tyres, batteries, oil and scrap metal as part of our efforts to divert waste from landfills. In addition, we enhanced our focus on reducing the use of paper through digitalisation initiatives such as the conversion of hardcopy pre-use checklist and operational forms to softcopies.

To further reduce material waste due to manufacturing, we have looked to innovative initiatives like Additive Manufacturing (AM) for on-demand 3D printing of train parts. In 2024, we expanded the use of AM by redesigning more train parts specifically for 3D printing, resulting in enhanced performance and reliability. Moving forward, we will continue to expand the application of AM and actively support our collaboration with LTA on the Joint Industrial Programme.

**TYRE RETREADING**

**1,178**
tonnes

**BATTERY AND OIL UPCYCLING**

**546**
tonnes

**TYRE RECYCLING**

**912**
tonnes

**SCRAP METAL RECYCLING**

**717**
tonnes

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

RESOURCE EFFICIENCY

## Data-Driven Predictive Maintenance Technology

SBS Transit has partnered with Stratio to implement predictive maintenance technology across its entire bus fleet where installation is feasible. This AI-powered system provides real-time visibility into the health of critical systems and components, including brakes, electric systems, and fluid levels. For bus engineering staff such as Mr. Thandavarayan Balaji, 53, he is able to monitor the real-time condition of buses in the fleet. This overview helps with planning the type of maintenance work, manpower and parts needed, improving productivity and efficiency in the workshops. Stratio not only enhances service reliability and passenger experience by minimising breakdowns but also reduces the wastage of vehicle parts by enabling proactive maintenance.

Notably, this collaboration extends to SBS Transit's growing fleet of electric buses, a first in Singapore. The system monitors data on battery health to understand operational efficiency, effectiveness, and potential optimisations for extending vehicle lifecycle. This initiative supports the transition to a cleaner energy bus fleet and a more sustainable public transport system.

First to implement condition monitoring on e-buses

With the condition monitoring system, technicians remotely monitor the health of our buses in real time, allowing them to anticipate faults and undertake predictive maintenance.


Located in an enclosed space beside the Bus Captain's seat, the data box gathers information on critical systems and components from the bus's Electronic Control Unit and relays the data to a cloud server for analysis.

Area of Impact: R&D, Technology and Innovation

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

RESOURCE EFFICIENCY

## Our 2024 Performance and Looking Forward

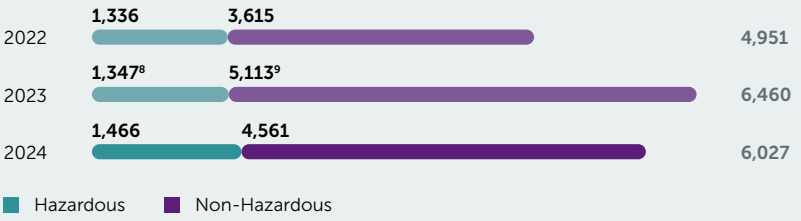
SBS Transit is dedicated to enabling the ambitions set by the Singapore government within the Singapore Green Plan, which aims to reduce waste sent to landfills by 20% by 2026, and with the Zero Waste Masterplan which sets an additional target to further reduce the amount to 30% by 2030 from 2019 baseline figures.

In 2024, we achieved a cumulated waste volume of 6,027 MT, a 6.7% decrease from 2023 levels. Out of the cumulated waste volume, 44.3% was directed to disposal. This decrease in total waste generated is attributable to the improved accuracy of Open Top Container waste data collection processes, which had previously relied on estimated 2023 data, as well as ongoing waste reduction efforts in our operations, which include process reviews and in-depth analysis of waste data to identify opportunities for reduction and digitalisation.

We are committed to enhancing our capabilities in tracking and identifying the sources and types of waste, which will enable us to refine our current waste management processes and strategically focus on specific waste streams. Additionally, we intend to continue exploring innovative technological solutions to further optimise our waste management practices, thereby reducing the amount of waste sent for disposal and reducing our overall environmental impact. As we advance our efforts in waste reduction and reporting, we will revisit our waste baseline and adjust our targets in future reports.

### GRI 306-3: WASTE GENERATED

**Total Waste Generated**
(Metric Tons)

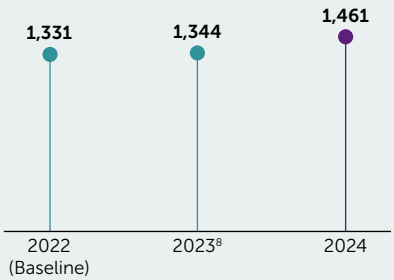



**Total**
(Metric Tons)

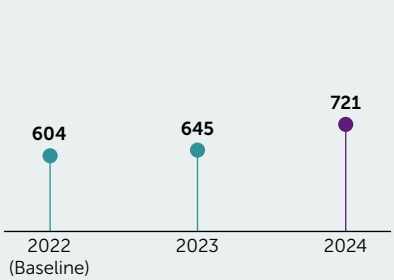
| | |
|---|---|
| 2022 | 4,951 |
| 2023 | 6,460 |
| 2024 | 6,027 |

### GRI 306-4: WASTE DIVERTED FROM DISPOSAL

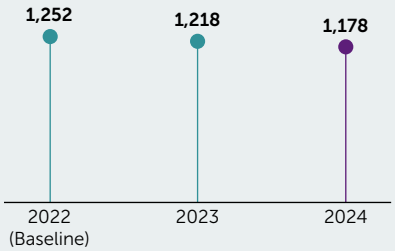
**Hazardous Waste** - Recycled
(Metric Tons)




**Non-Hazardous Waste** - Recycled
(Metric Tons)




**Non-Hazardous Waste** - Reused
(Metric Tons)




All hazardous waste diverted from disposal were recycled, non are reused

### GRI 306-5: WASTE DIRECTED TO DISPOSAL

**Hazardous Waste**
(Metric Tons)


**Non-Hazardous Waste**
(Metric Tons)


All waste directed to disposal were incinerated, none directed to landfill

8 Due to improvements in data collection, the reported recycled hazardous waste has been recalculated using the revised figures on refrigerant waste disposed, leading to a restatement of data in 2023.

9 Due to revisions in data measurement methodologies, the reported non-hazardous waste has been recalculated using the revised figures, leading to a restatement of data in 2023.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

## SUSTAINABLE TRANSITION


The latest World Economic Forum's Global Risks Report 2024 outlines the environmental threats over the next two years, such as extreme weather events, pollution, critical changes to the earth systems, natural resource shortages, alongside a risk of biodiversity loss and ecosystem collapse within the next decade. As such, there is a greater focus on our mitigation plans to minimise the impact of such risks on our operations.

We actively assess and identify climate-related risks and opportunities within our operations and across our value chain. This enables us to pinpoint areas where we can better integrate climate transition principles into our policies, strategic frameworks, and planning processes. By doing so, we strengthen our resilience and enhance our capacity to adapt to climate-related challenges. Through these efforts, we ensure that both our organisation and our value chain partners are well-prepared to navigate the evolving climate landscape.

In alignment with Singapore's goal of achieving net-zero emissions by 2050, and recognising our climate-related risks and opportunities, we continue to foster a sustainable transport ecosystem through joint efforts with our stakeholders. We also engage our employees, partners, commuters, and the wider community to promote environmental awareness.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

## CLIMATE CHANGE ADAPTATION AND MITIGATION

SBS Transit disclosed its climate-related financial disclosures in four key areas — 1. Governance, 2. Strategy, 3. Risk Management, and 4. Metric and targets as recommended by the Task Force on Climate-Related Disclosures (TCFD)[10]. A standalone report has been published in December 2023, providing information and greater understanding on our management strategies relating to climate-related risks and opportunities to our stakeholders. In 2024, the IFRS S1 and S2 standards, under the IFRS Organisation, now fully incorporate the TCFD recommendations. As such, SBS Transit continues to align our reporting with these standards, particularly the IFRS S2 climate-related requirements, which is referred by the SGX RegCo in its enhanced sustainability reporting regime for listed companies.

### Identifying the climate-related risks and opportunities across our operations

To understand the climate-related risks and opportunities associated with SBS Transit within specific timeframes under two climate scenarios, we conducted a screening exercise dedicated to identifying climate-related risks and opportunities. The screening process identified potential risks and opportunities applicable to SBS Transit. Building on this, we conducted a robust scenario analysis, which quantified the financial implications of these risks and opportunities under various climate change projections. The detailed parameters and scope of analysis done are presented in the table below (Table 1).

**TABLE 1: SCOPE AND PARAMETERS OF CLIMATE-RELATED RISK AND OPPORTUNITY SCREENING**

| PARAMETERS | SCOPE | |
|---|---|---|
| **Countries** | Singapore | |
| **Baseline year** | 2022 | |
| **Timeframe** | • Short-term: up to 2030<br>• Medium-term: up to 2040<br>• Long-term: up to 2050 | |
| **Scenarios explored** | • 1.5°C warming (NGFS Net-Zero by 2050, IEA NZE 2050 & RCP 2.6)<br>• >3°C warming (NGFS Current Policies, IEA STEPS & RCP 8.5) | |
| **Risks** | Transition risks<br>• Carbon pricing<br>• Changing customer expectations<br>• Low carbon economy transition policies and regulations<br>• Reputational risks<br>• Technology shifts | Physical risks<br>• Floods<br>• Heatwaves (Rising mean temperatures)<br>• Storms and cyclones<br>• Wildfires<br>• Rising sea levels<br>• Droughts (Water scarcity) |

The comprehensive climate scenario analysis conducted in 2023 was based on a snapshot of our business in 2022 (the baseline year) and used two distinct scenarios: a 1.5°C warming scenario and a >3°C warming scenario. The 1.5°C scenario, known as the orderly scenario, assumes the implementation of climate policies and significant decarbonisation efforts. On the other hand, the >3°C scenario, referred to as the hot house scenario, assumes limited and inadequate climate policies and actions to address the impacts of climate change.

The different short-, medium- and long- term timeframes defined serve as a guide in our target setting and strategic decision making. We aligned the time horizons for this exercise with those used in our strategic risk management planning. This enables us to effectively prioritise and select appropriate interventions for key sustainability related risks and opportunities that may arise in the given time horizons, while also enabling us to future-proof our strategies.

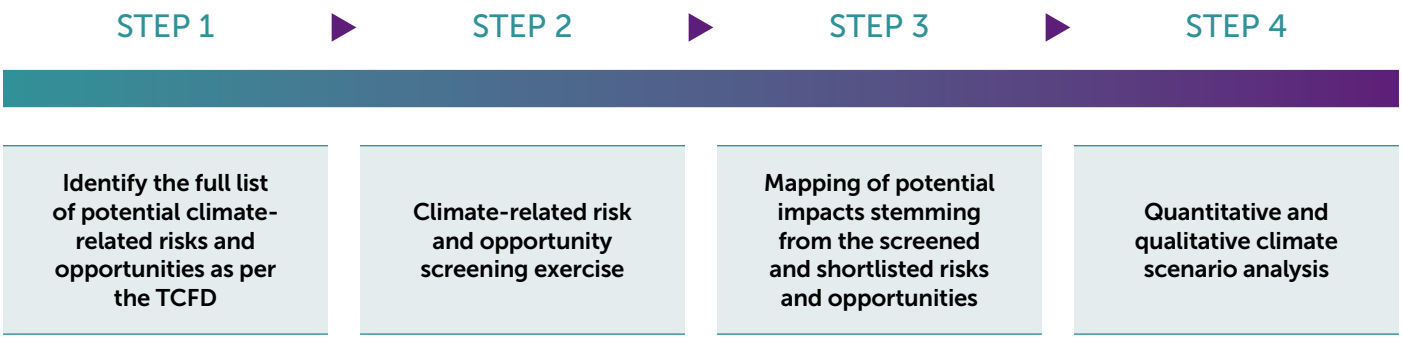
10 A standalone report has been published in December 2023, providing information and greater understanding on our management strategies relating to climate-related risks and opportunities to our stakeholders.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

The full process of the climate risk scenario analysis is summarised in the illustration below (Figure 2).

**FIGURE 2: FOUR STEPS OF CLIMATE SCENARIO ANALYSIS**

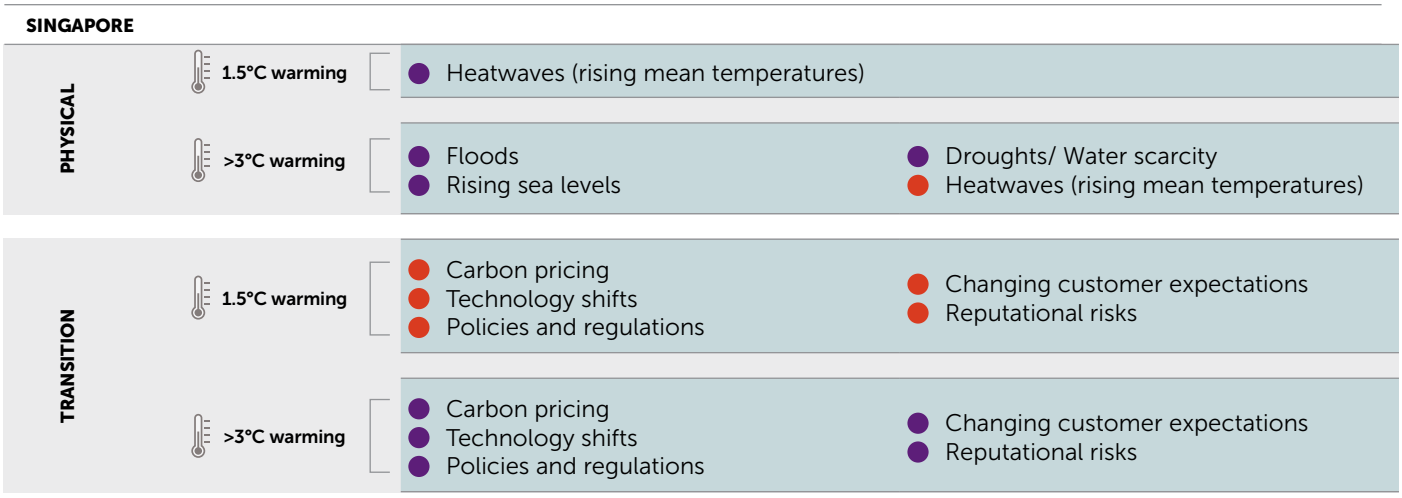



The screening analysis considered both transition and physical risks and opportunities over the time horizons within each scenario. Examples of climate-related risks were taken from Table 1 of TCFD's Final Recommendations Report[11].

Transition risks emerge from actions associated with transitioning towards a low-carbon economy. These risks can arise from newly implemented climate policies and regulations, the adoption of low-carbon technologies, the implementation of carbon pricing mechanisms, or shifts in consumer preferences and market sentiments. Physical risks, on the other hand, result from the direct consequences of climate change. These risks can be chronic, occurring gradually over time (e.g. increasing temperatures or rising sea levels), or acute, manifesting as extreme events (e.g. floods, storms, or wildfires).

The outcomes of the screening exercise are summarised in Figure 3, which highlights the potential risk levels. This figure illustrates selected climate-related risks that are assessed to have a moderate or high impact on our business operations and financial performance.

**FIGURE 3: CLIMATE-RELATED RISK SCREENING RESULTS**




**Legend**

Potential impact magnitude[12]:

- Moderate risk
- High risk

11 Recommendations of the Task Force on Climate-related Financial Disclosures.

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

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

**Climate scenario analysis overview**

Based on the mapped risks, we then performed a detailed quantitative climate scenario analysis 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 (Step four in Figure 2), specifically by modelling the vulnerability of our assets to extreme weather conditions. It must be noted that the analysis results for physical risks were determined on the assumption that no action was undertaken by SBS Transit to mitigate and adapt to the pertinent climate risks. The results were consistent across business segments, as the impacts were concentrated in Singapore. This analysis focuses on SBS Transit's direct operations and business model; however, this year we also began a qualitative exploration of impacts on other parts of the value chain.

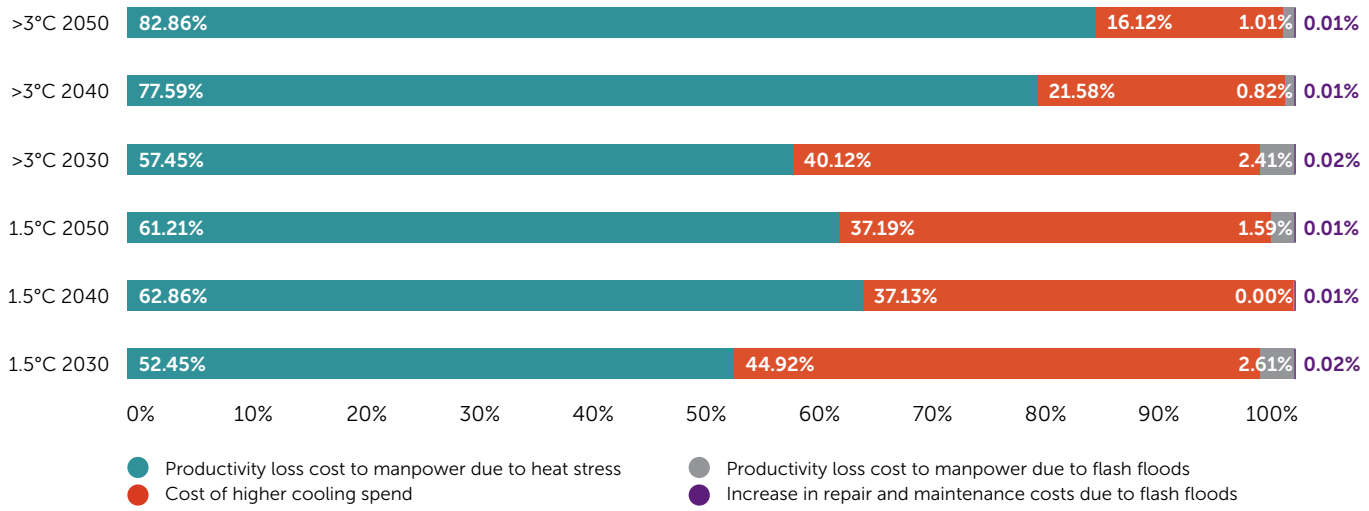
Overall, in the assessment of both physical and transition risks, it was determined that some risks apply directly to SBS Transit as 'first-order' risks, which are expected to have a direct and material impact on the business. For example, physical risks such as floods can cause damage to our property. On the other hand, 'second-order' risks have a more indirect impact and are experienced by SBS Transit through cost pass-through. For example, SBS Transit does not experience direct implications of carbon taxes. Due to the nature our operations, however, the indirect impact of increasing carbon taxes may be seen through the potential rise of electricity prices in the future. As carbon taxes do not directly affect SBS Transit currently and remain as a second-order risk (risks related to the value chain), the transition risk of rising carbon prices is excluded from the overall direct financial impact diagram below (Figure 4). However, as this risk is relevant when considering the transition to a lower carbon economy, it is explored separately under a 'what if' scenario in the section below.

Through the scenario analysis, we can conclude that unmitigated climate risks result in potential additional financial impact for the respective year. Among the quantified physical risks, costs of higher spending on cooling due to rising temperatures appears to be the most significant[13] first-order risk across all time frames and scenarios.

Regarding second order risk, carbon taxes are expected to have significant impact, as they may account for a large proportion of the additional financial costs in future. The impact from carbon tax has been modelled on a 'what if' scenario basis, i.e. if carbon taxes were applicable to SBS Transit, the potential impact was quantified. If left unmitigated, carbon taxes could approximately account for 47 to 61% and 23 to 31% of SBS Transit's total financial impact caused by climate-related risk under the 1.5°C and >3°C scenarios respectively. For more a detailed explanation on each quantified risk, please refer to our 2023 full TCFD report here[14].

The outcomes of the scenario analysis guides SBS Transit's sustainability and operational strategies for managing climate-related risks and opportunities. This exercise allows SBS Transit to assess the resilience of our existing decarbonisation strategy, determining additional areas that require improvement to mitigate future risks. Additional resilience measures will be further evaluated and may be implemented according to the relevance and magnitude of risks.

**FIGURE 4: PROPORTION OF ADDITIONAL FINANCIAL IMPACT BY CLIMATE RISK**




13 Risk impacts estimated based on our current inputs are considered to be majorly financially material if the financial impact is >5% of SBS Transit's 3-year average EBITDA (FY2020, 2021 and 2022).

14 All assumptions and limitations related to the assessment of climate risk can be found in the Appendix of the full TCFD report accordingly.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

**Identifying the climate-related risks and opportunities within our value chain**

In 2024, SBS Transit further evaluated remaining alignment gaps in our climate disclosures extending the identification and assessment of climate-related risks to the entire value chain.

We conducted an in-depth value chain mapping exercise, gathering information on key suppliers across all geographies to better understand the critical products and services in our operations. Additionally, we assessed downstream supply chain impacts, including our customers, as well as resale and end-of-life activities. As we finalise the detailed analysis of key risks and opportunities and their implications, we are also preparing for a more comprehensive disclosure in our FY2025 report, ensuring full alignment with IFRS S2 reporting requirements.

### Our 2024 Performance and Looking Forward

The climate scenario analysis represents the initial phase in enhancing our comprehension of the challenges confronting our operations. SBS Transit is committed to the continuous improvement of our mitigation and adaptation measures to address the climate risks and opportunities identified within our operations and our value chain. We have implemented essential frameworks, standard operating procedures, and a Business Continuity Management System (BCMS) to prepare ourselves for potential business disruptions, such as flash floods and rising average temperatures. Plans related to climate adaptation, such as haze contingency plans, have been developed to be implemented where needed to manage the effects of climate change and ensure business continuity. These plans are also reviewed and updated annually.

Our Business Continuity Management efforts have been validated by our ISO 22301 certification, with external auditors benchmarking them against the ISO standards. Strategies within our BCMS to manage sustainability-related risks and opportunities include conducting annual Table-Top and Ground Deployment Exercises to practice and validate our Business Continuity Plans. In addition, we place emphasis on training and familiarising staff with the relevant Incident Management Plans, such as the Rail Emergency Preparedness training road map for our rail operators and staff. These resilience strategies and frameworks are tested regularly to affirm the efficacy of the mitigating measures we have put in place. Moving forward, we strive to constantly evolve our standard operating procedures to address new risks and opportunities.

In our ongoing alignment with IFRS S2 reporting requirements, SBS Transit will further review and update its climate scenario analysis. This will include further considerations around the value chain and business model, current and anticipated effects of these risks, and any prevailing assumptions and measurement uncertainties. The analysis will also assess our resilience to these risks and their implications for our overall strategy and business model. Recognising that climate change and our operations can indirectly impact biodiversity, we aim for our partners to align with our Biodiversity Policy. Moving forward, we plan to explore methodologies for quantifying our risks and impacts on nature, and to develop solutions that minimise our biodiversity footprint. These findings will be integrated into our next climate-related resilience review.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

## SUSTAINABILITY ENGAGEMENT

To achieve our organisational sustainability commitments and targets, we are fostering a sustainable corporate culture that extends from our frontline staff to head office. This includes empowering employees across all departments to integrate sustainable practices into their daily work by providing them with the necessary training, resources, and support, thereby fostering a sense of ownership and contributing to our overall environmental goals.

Recognising that sustainability is a shared responsibility, we also engage our customers and communities. We encourage customers to choose sustainable commuting options by utilising public transportation, and partner with the communities we serve to create a greener transportation landscape in Singapore. Our sustainability engagement efforts are structured around two key strategies: Engaging and Training our People, and Involving our Community.

## ENGAGING AND TRAINING OUR PEOPLE

Achieving our environmental objectives requires company-wide involvement. We are enhancing workforce skills and encouraging employees to become environmental champions in their roles.

Our CARES 5.0 'Be Eco-friendly' Standard reinforces environmentally responsible conduct, and staff are regularly informed of sustainability targets and performance to facilitate goal achievement.

This is accomplished through:

- **Sustainability Newsletters** provide updates on company performance and global/local environmental news
- **Depot Report Cards** offer updates on Energy and Water Consumption and Waste Production
- **Sustainability Updates** at Town Halls share company initiatives, performance, and encourage sustainable practices
- **Sustainability Reports** highlight the company's performance and initiatives
- **Sustainability Events** facilitate hands-on learning experiences, such as E-waste site visits and Litter Picking.


Sustainability updates presented at town hall

Exploring Singapore's e-waste landscape as part of our sustainability learning series

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

## Upskilling Our Workforce to Ensure a Smooth Transition to Electric Buses

To ensure a smooth transition to an eBus fleet, we are committed to supporting our staff in becoming proficient with the new eBus models, matching their expertise with traditional diesel buses. This helps us maintain service quality and passenger safety while advancing sustainable transportation.

Since the introduction of the National Electric Vehicle Specialist Safety (NESS) certification in 2022, a total of 122 of our staff members have been trained and certified. Recognised by the Singapore Workforce Skills Qualifications (WSQ) National Credential System, those certified possess the skills and knowledge necessary to safely perform servicing on electric vehicles (EVs) and hybrid EVs in high-voltage environments.

To enhance our knowledge of international best practices, multiple overseas learning trips were organised for key personnel. Our workshop technical specialists and training officers travelled to Sweden, Poland, and Germany to learn from partners like Volvo, Scania, and MAN. They gained firsthand experience in electric bus production, maintenance, and various high-voltage systems, as well as crucial safety protocols, ultimately enhancing their skills and expertise as we transition toward cleaner energy solutions and a greener future.

Volvo Electromobility Engineer and Master Trainer Mr Stefan Fasth (centre) explained the safety controls and features of the electric bus chassis to the team during their visit to the Volvo bus plant in Borås.

Mr Habdas Przemyslaw, Production Manager of MAN Truck and Bus, shared about the fabrication of sub-frame structural parts for electric buses using a laser cutting machine at the MAN eBus factory in Starachowice, Poland.

We are collaborating with the Singapore Bus Academy to establish Singapore's first eBus satellite training centre at Seletar Bus Depot, which is scheduled to be operational by March 2025. This training centre will serve as a hub for drivers, technicians, operations staff and other members within the transportation industry to upskill on eBus operations. The training centre adopts mixed reality technologies to facilitate learning, consisting of a classroom, an Extended Reality training room and practical training area equipped with an eBus chassis and eBus simulators.

Area of Impact: Energy and Emissions | Safety and Health | Customer Experience | R&D, Technology and Innovation

At SBS Transit, we believe that sustainability is a shared responsibility, and our employees play a key role in driving meaningful change. We actively encourage and welcome feedback on sustainability-related ideas and solutions through multiple channels, including internal forums, surveys, and direct discussions. By fostering open dialogue, we ensure that every voice is heard and every idea has the potential to make a real impact. Together, we are committed to building a greener, more sustainable future.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

## INVOLVING OUR COMMUNITY

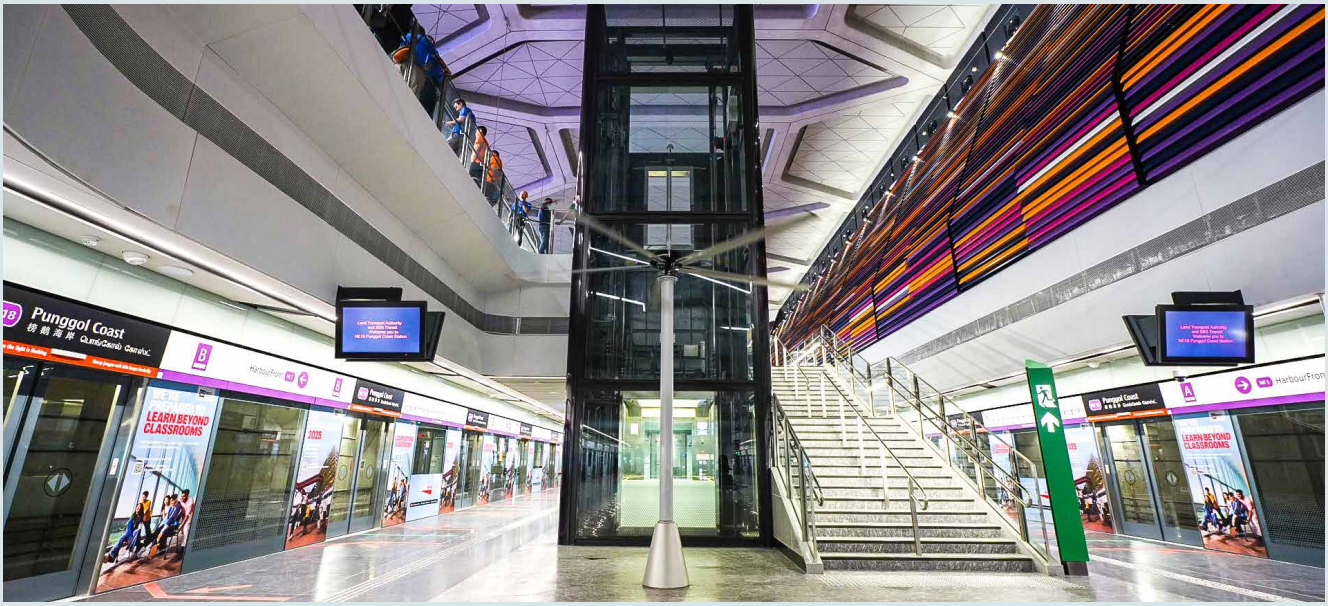
Alongside our employees, the community we serve plays a significant role in our sustainability transition. We strive to provide greater support on the journeys of our commuters while introducing the community to greener solutions, empowering them to become environmental stewards in their own right.

## Enhancing Connectivity and Sustainability: Bringing Greener Infrastructure and Networks to Communities

**Expansion of our current rail operating network**
This year, we welcomed the addition of Teck Lee LRT Station and Punggol Coast MRT Station in nothern Punggol, significantly enhancing transportation connectivity. These stations provide faster and more convenient travel for commuters to the Singapore Institute of Technology's university campus and the JTC Corporation's Punggol Digital District. With direct access to the North-East Line and the Punggol Bus Interchange, residents of Punggol North now have seamless and efficient travel options throughout the city, promoting public transport as a smart commuting choice.

**Sustainable station features**
With an emphasis on sustainability, the Punggol Coast MRT station achieved BCA's Green Mark Platinum Certification by incorporating eco-friendly materials and energy-efficient systems, including a hybrid cooling approach that utilises a District Cooling System.

**Getting aboard Singapore's future rail expansion plans**
In 2024, we were awarded the new Jurong Regional Line (JRL) Operator contract in a joint venture with RATP Dev Asia Pacific. Spanning 24km with 24 stations, the JRL is part of Singapore's goal to expand its rail network to 360km by 2030, enhancing connectivity in western Singapore by linking key areas such as the Jurong Innovation District and Nanyang Technological University. The line will open in three stages from 2027, to serve over 60,000 households.




Hybrid fans at the platform are used in conjunction with the Punggol Digital District's District Cooling System to keep the station feeling cool while utilising energy efficiently.

Area of Impact: Sustainable Transition | Customer Experience | Social Economic Contribution

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

## SUSTAINABLE TRANSITION

**Repair Kopitiam at Tampines Bus Interchange:** In collaboration with SBS Transit, this community-driven initiative, the first of its kind in a transport hub, gives household items a new lease of life while teaching commuters valuable basic repair skills and encouraging sustainable living. With its high footfall and proximity to Tampines MRT station, the interchange provides a convenient location for people to learn these skills, fostering a shift towards a more sustainable lifestyle.

Dr Amy Khor, Senior Minister of State, Ministry of Transport and Ministry of Sustainability and the Environment, tried out her wiring skills on a 3-pin plug at "Repair Kopitiam", with Mr Jeffrey Sim, SBS Transit's Group CEO.

**World Car Free Day:** To promote public transport use on World Car Free Day, upcycling workshops were held at NEL Sengkang and DTL Tampines MRT stations. Participants of all ages transformed discarded cardboard egg cartons and fabric scraps into beautiful windchimes, fostering creativity, sustainability, and community connections.

Members of the public creating their own windchimes at DTL Tampines MRT station.

**Go Green SG Tour:** To highlight the sustainability efforts of the public transport sector, we conducted tours for 100 participants at Seletar Bus Depot, inspiring collective action for a more environmentally sustainable Singapore.


SBS Transit partnered with Anywheel, the largest bicycle-sharing platform, to offer commuters the convenience of reserving bicycles as part of their journeys.

**Walk, Cycle, Ride Campaign – Partnership with Anywheel:** In alignment with LTA's Walk, Cycle, Ride campaign, we have introduced campaigns like monthly giveaways and complimentary rides on the Downtown Line between Tampines East and Tampines West MRT stations. With these campaigns, we expect an increase in public transport usage, reduced traffic congestion, and lower carbon emissions, contributing to a greener and more connected community.

In addition, commuters can now reserve Anywheel bicycles up to 30 minutes in advance, exclusively through the SBS Transit app. This complements the existing feature that lets users check real-time bicycle availability at bus stops. This new reservation capability gives commuters greater flexibility to seamlessly integrate cycling with their bus or train journeys, improving first- and last-mile connectivity.

# DRIVING SINGAPORE'S LOW-CARBON AMBITION THROUGH ENVIRONMENTAL STEWARDSHIP

SUSTAINABLE TRANSITION

## Our 2024 Performance and Looking Forward

SBS Transit is dedicated to consistently delivering dependable and accessible public transportation services that cater to the needs of all users while offering environmentally friendly transport options. As part of our commitment to a sustainable transition, we adhere to all applicable environmental laws and regulations in Singapore. In 2024, we are proud to report that we maintained a flawless record of compliance, with zero instances of non-compliance with environmental laws and regulations.

As part of our commitment to environmental stewardship, we are dedicated to serving our community with sustainable practices. This year, we are proud to celebrate our team's accomplishments, which have been recognised for their outstanding contributions to environmental stewardship through the Sustainable Transportation Infrastructure Award and the Industrial Energy Efficiency Award. Notably, our Group CEO, Mr. Jeffrey Sim, received the Impact Leader Excellence Award in the individual category at the 2024 Sustainability Impact Awards. This prestigious accolade, presented by The Business Times and UOB, acknowledges his unwavering dedication to advancing SBS Transit's sustainability journey.

These accomplishments, both at the organisational and individual levels, underscore our steadfast commitment to sustainability. We are committed to integrating sustainable practices into our daily operations and to serving as a positive example in promoting environmentally responsible practices within our communities. Our aim is to continue to set benchmarks in sustainability and to inspire others to join us in our journey towards a more sustainable future.


SBS Transit Chairman Bob Tan (left) and Group CEO Jeffrey Sim (right) at the Sustainability Impact Awards, presented by The Business Times and UOB.