

# MAKE THE SWITCH

THE QUEST FOR GREENER LAND TRANSPORT

## ADVENTURE GUIDE

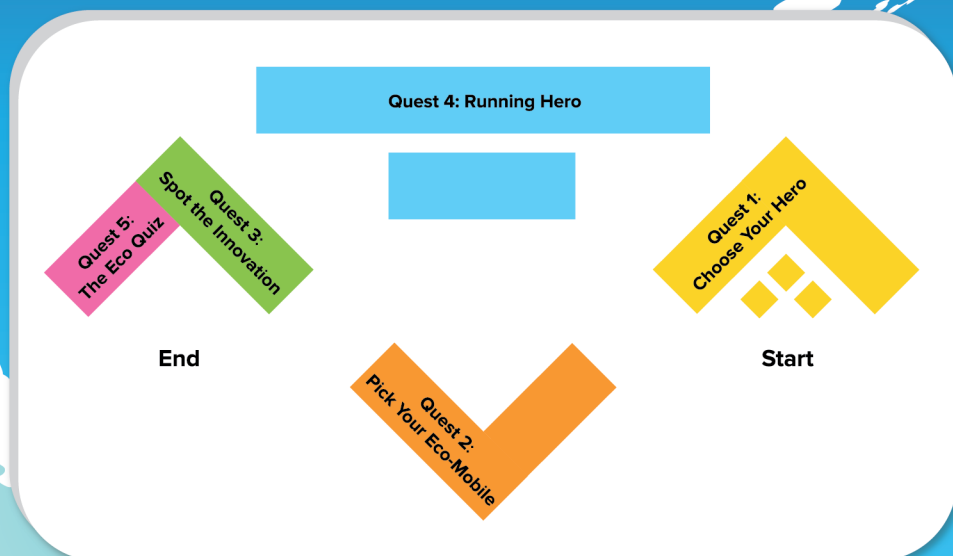


# Greetings!

Welcome aboard our quest for a greener land transport future. Discover how you can help make our land transport ecosystem a more sustainable one!

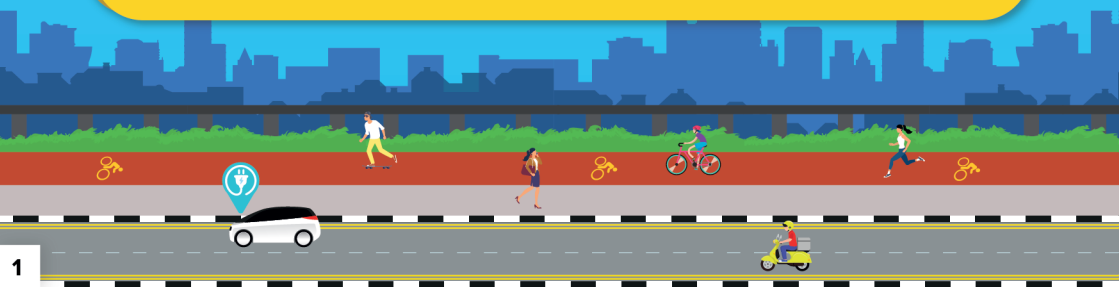
Use this guide to uncover informational tidbits and activities to enhance your exploration of the exhibition, or to simply learn more about our green land transport journey.

## Map



### ! Tips:

- This book is best viewed when you are at the exhibition. Refer to this e-booklet while you navigate the quests for additional content and activities.
- You are encouraged to complete the quests in sequence.



# Explore at Your Own Pace!

While this exhibition is designed for self-exploration, you can tap on one of our friendly Eco-warriors to help you navigate through the quests.

They have unique abilities and interests, and exclusive tasks in this guide too!

## Meet Your Eco-warrior!

Which Eco-warrior do you identify with?



### Active Athlete

A super speed runner who also loves getting around by walking and cycling to reduce carbon footprint.



### Expert Explorer

A navigator with super memory who can recite bus routes and the MRT station maps by heart.



### Tech Whizz

A technophile who is excited about all things clean and green with transport such as electric cars and buses.



# Why Bother About Climate Change?

Human activities that cause excessive emissions of greenhouse gases (GHGs) are warming up our planet fast, accelerating the rate of climate change. These activities include the burning of fossil fuels, deforestation, and land transportation. If GHG emissions are left unabated, climate change can disrupt our lives in many ways.

## ! What are Greenhouse Gases (GHGs)?

GHGs include naturally occurring gases such as carbon dioxide (CO<sub>2</sub>), methane and man-made ones like fluorinated gases.

Naturally, GHGs trap heat in the atmosphere to warm the planet just enough to make it liveable. But too much of them alters temperatures beyond what the environment can bear.

Rank these climate change effects in the order of which would impact you the most! (1 being the most disruptive effect on your daily life)

Rising sea levels that cause extreme weather

Higher temperatures that cause discomfort and heat stress

Warmer climates which give rise to vector-borne diseases like dengue

Intense rainfall and strong winds that affect clean water and food supply

Rising temperatures endangering the unique biodiversity that call our island home

## ! Did You Know?

On average, a Singaporean generates about nine tonnes of carbon emissions a year, thrice the sustainable limit of three tonnes to keep temperature rise below 1.5°C!



# Singapore Commits to Fight Climate Change

Singapore recognises the urgency to raise our climate ambitions to transition to a low carbon future in our fight against climate change.

Under the Singapore Green Plan 2030, we aim to reach net zero emissions by or around 2050.

## ! What is Net Zero?

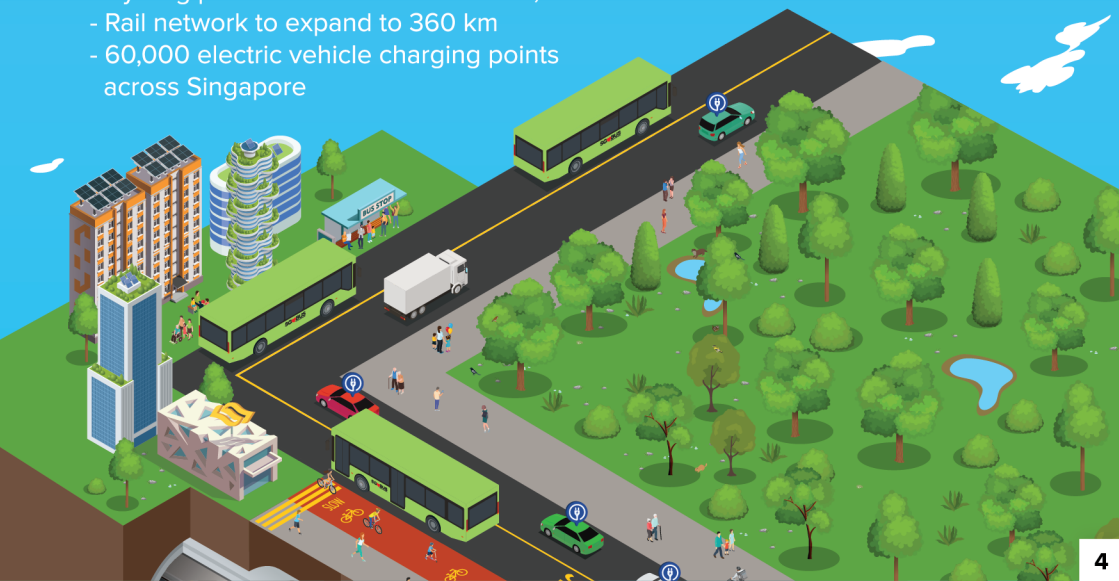
Put simply, we achieve net zero carbon emissions when the amount of GHGs produced is no more than the amount removed from the atmosphere.

## Why Does Land Transport Matter?

The land transport sector is the third largest carbon emitter, accounting for about 14 – 15% of national emissions today. Greening our land transport system will therefore bring us closer to our climate goals.

We have charted out key targets to get us there! By 2030, we aim for:

- 3 out of 4 peak period trips to be taken on mass public transport
- Cycling path network to increase to 1,300 km
- Rail network to expand to 360 km
- 60,000 electric vehicle charging points across Singapore



# Cleaner and Greener Ways to Travel

A key step to transforming our land transport is to encourage greener modes of travel.

Instead of riding cars powered by Internal Combustion Engines (ICE), we can:

1

## Shift to Public Transport or Active Mobility

With more people taking public transport and Active Mobility modes, the average emission from each passenger falls!

**Reduce your carbon footprint by:**



Walking/  
Cycling

**100%**



MRT

**90%**

2

## Green Our Bus Fleets

Replacing our bus fleets with ones that run on cleaner energy reduces emissions!

**Reduce your carbon footprint by:**



E-Public  
Bus

**70%**

3

## Green Our Cars

Consider switching to electric cars which do not run on fossil fuels like petrol or diesel to cut emissions!

**Reduce your carbon footprint by:**



Electric  
Car

**50%**

## ! Did You Know?

Our public transport operators are exploring powering buses with solar energy.

The stored energy will be used to charge the batteries on buses and help reduce the load on bus engines, potentially reducing 3.7 tonnes of carbon emissions per bus per year!

# Which Vehicle is Greener?

Depending on how you choose to travel, some modes of green transport can be greener than others.

Can you pick out the eco-friendlier transport mode from the pairs below?

1



ICE Car

VS



Electric Car

2



Electric Bus

VS



Diesel Bus

3



Diesel Hybrid Car

VS



Electric Car

4



Electric Bus

VS



ICE Car

5



Electric Car

VS



Walking/Cycling

## ! Did You Know?

On-demand shared Autonomous Vehicles (AVs) help to reduce our need for private cars, thereby reducing carbon emissions and supporting our green vision.

Find out more about AVs in the main gallery!

Answer: 1. Electric Car; 2. Electric Bus; 3. Electric Car; 4. Electric Bus; 5. Walking/Cycling

# Greening Behind the Scenes

To create a truly green land transport ecosystem, it is important that our infrastructure and operations are constructed and run sustainably too! Here are some lesser known green initiatives that we have embarked on.

## Reusing Electricity in Public Transport



When our Downtown Line trains brake, they generate enough electricity to power 370 5-room HDB flats for a year.\* This electricity is rerouted to power nearby trains or train stations to save that precious energy!

## No Leftovers in Construction



Leftover gravel, sand and crushed rock are recycled to create concrete aggregate to supplement the concrete mixture for construction. This practice not only reduces construction costs but reduces cement and water consumption.

## Trash to Treasure

Our new trains will be designed for 92% recyclability, with the potential of raising up to 98% with future technology improvements.

Old train parts can either be repurposed or upcycled into memorabilia. Here are how these parts find new life!



In August 2021, LTA donated a decommissioned train to the Singapore Police Force, who will be repurposing it for their public transport security training.



MRT seats have been repurposed into rest spots for the community. Other parts have also been used to recreate the train interior for projects such as residents' libraries at HDB void decks!

\*Based on regenerative energy generated by the trains over a year.



# Hidden in Plain Sight

Can you find all ten words related to green transport infrastructure and operations hidden in the puzzle below? Hint: These are words found on page 7!

T H R S M C R T H N O S Y X X R J C  
E L E C T R I C I T Y X I U K R Q O  
C Z C O P E R A T I O N S X Y V G N  
H Q Y D P Z C H T W D A R I M R T S  
N I C Z L I O W P T N M R E Q J Y T  
O N L K M K I E N E R G Y E E J W R  
L U I C O M M U N I T Y L N U N J U  
O I N D E C O M M I S S I O N E D C  
G M G S U S T A I N A B I L I T Y T  
Y L D H C A L C I G O E B E E V R I  
E R E P U R P O S E E J F Q I A G O  
X A N P N K W P D M F W Z W H T H N

**SUSTAINABILITY**

**TECHNOLOGY**

**ELECTRICITY**

**ENERGY**

**CONSTRUCTION**

**OPERATIONS**

**REPURPOSE**

**DECOMMISSIONED**

**RECYCLING**

**COMMUNITY**

## Spot the Innovation – The Expansion

We have hidden additional items that would interest your Eco-warrior at Quest 3. Can you find them all?

### Active Athlete

- A Safe Rider
- A Sheltered Crossing
- Two Joggers

### Expert Explorer

- A Bus-only Lane
- Tactile Floor Markers
- An MRT Train

### Tech Whizz

- Three Electric Cars
- Two Engineers
- Two Recycling Bins

# All Aboard Our Public Transport

Public Transport is one of the greenest modes to get around. Besides improving public transport accessibility, we also want our commuters' journeys to be more inclusive and enjoyable!



**Priority boarding** for seniors, expectant mothers, and people with disabilities improves the ride experience for those in need!

98% of our bus stops are **barrier-free** so commuters in wheelchairs or on personal mobility aid devices can board and alight safely!



To support passengers with invisible illnesses who may not be able to stand for too long, the **“May I have a seat please” initiative** alerts other commuters of their need for a seat.

Under LTA's **Move In Groove (MIG)** programme, MRT trains and stations are creatively transformed for more vibrant and pleasant commutes!



With the **Thoughtful Bunch**, commuters are encouraged to spread graciousness to make journeys more pleasant amidst the daily rush.



You can play your part to create a pleasant commuter journey for others by showing care too! Learn how in this video.

# Green Transport Bingo

Challenge yourself to score a bingo with the Green Commutes sheet below by completing five items in a row (horizontally, vertically or diagonally)! You can also compete with your friends to see who can collect more bingos!

Walk or jog to your destination five times within a week

Count the number of steps you take to get from your home to the nearest MRT station

Take zero trips in a private vehicle for a week

Spot an electric bus on the roads of Singapore

Board a themed train

Share about green modes of transport with six people

Spot an electric vehicle charging station in Singapore

Read five articles about inclusive travel on public transport

Take public transport 50 times in one month

Spot a priority boarding area at a bus interchange

Take public transport at least 10 times within a week

Spot five different artworks in our MRT stations

Complete Quest 5 at the exhibition in person

Visit an MRT station that you have never been to before

Travel to a new neighbourhood you have never visited by public bus

Give up your seat to someone who needs it on the public transport

Cycle to your destination twice in one week

Travel at least 20 km on our cycling network

Imitate the MRT train announcement in the four official languages

Spot 10 safe riders on our cycling network

Travel on at least three different MRT lines in a day

Spot a "May I have a seat please" poster in the MRT station

Board a three-door, double-decker bus in Singapore

Visit the Singapore Mobility Gallery

Say "thank you" to a bus captain



# About the Exhibition

“Make the Switch: The Quest for Greener Land Transport” invites you to discover how small changes in our transport habits can make a huge difference in our fight against climate change.

Our land transport system takes centre stage in this exhibition. Learn about what we are doing to go green and find out how you can support our quest for a sustainable land transport future.

Exhibition runs till March 2023.

## About the Singapore Mobility Gallery (SMG)

The SMG showcases various facets of Singapore’s dynamic land transport system and provides a behind-the-scenes look at how LTA plans, designs and builds our land transport system.

Visit [go.gov.sg/smg](https://go.gov.sg/smg) for more info.

