"Getting to Zero" How to play
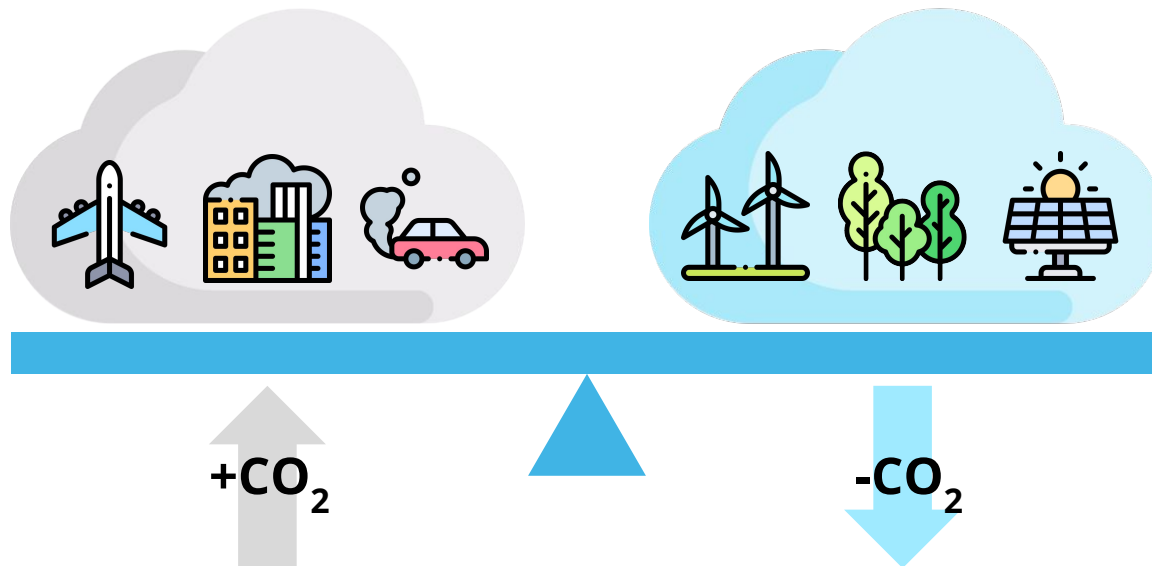
Created by: Ng Wen Xin

Getting to Zero

How to Play

Welcome to Getting to Zero!

This game is about understanding measures Singapore can implement to get us towards **net-zero* greenhouse gas (GHG) emissions**.

Net zero refers to the <u>balance</u> between the amount of greenhouse gas **produced** and the amount **removed** from the atmosphere.

$+CO_2$

$-CO_2$

How to Play

You have been appointed by the government to lead the nation's sustainability efforts. You will be enacting a series of climate policies, and your goal is to **reduce Singapore's GHG emissions as much as possible while ensuring a competitive economy** .
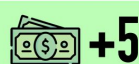
You start with **50** 💵 and **50** 🌡️ .

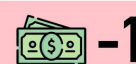Some examples of climate policy cards:

FOSSIL FUEL USAGE

Fossil fuel is burned to generate electricity. Singapore relies heavily on natural gas, a form of fossil fuel, to meet its energy needs.

🌡️ **+8**   💵 **+5**

REFORESTATION

Reforestation removes substantial amounts of additional carbon dioxide from the atmosphere, and is seen as a way to help cool the climate.

🌡️ **−3**   💵 **−1**

How to Play

The game takes place over 3 rounds.

**Before the start of every round:**
1. Shuffle all the cards well and deal the following, depending on the number of players:
    - 3 players: 9 cards/player
    - 4 players: 8 cards/player
    - 5 players: 7 cards/player

2. Place the remaining cards in a pile face-down in the centre of the playing area.

How to Play

x7

Starting a round:

1. To start a round, all players simultaneously choose 1 card from their hands that they would like to keep and place it face-down in front of them.

2. When every player has done this, everyone reveals their chosen cards.
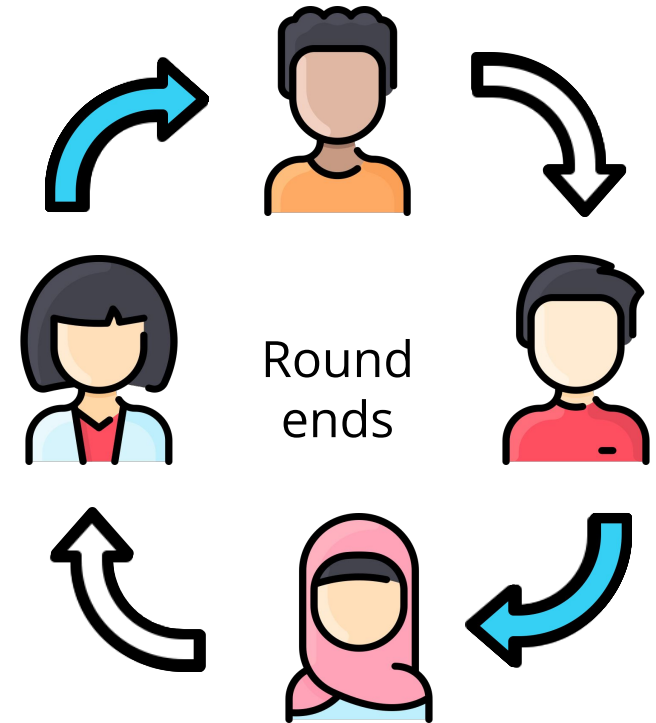
Everyone choose 1 to keep, place face-down

Reveal

How to Play

x0
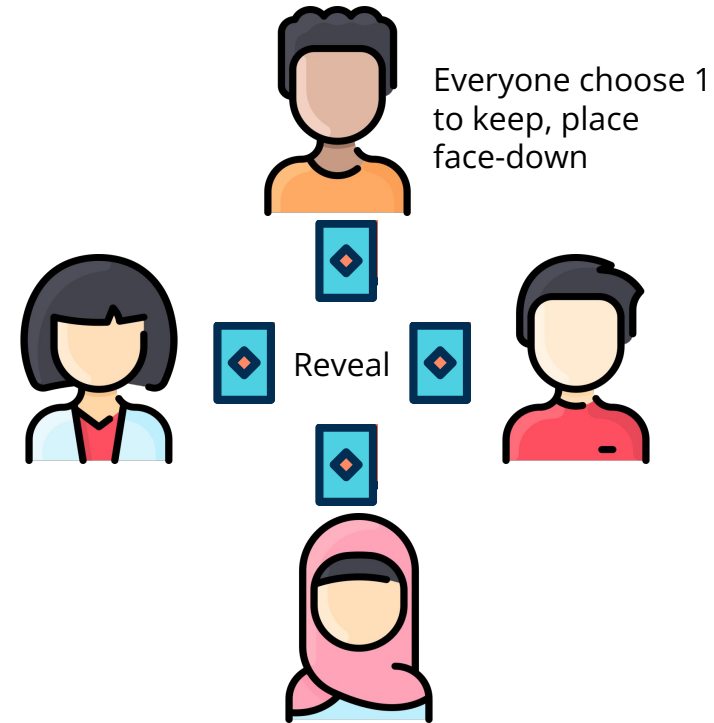
Starting a round:

3. After revealing cards, pass the remaining hand face-down to the player on your left. Everyone picks up their new hands and the next turn begins.

4. The round ends when the final remaining card of each hand is passed on.

Round ends

How to Play

At the end of every round:

1. Tabulate the reduction in emissions and how much money you have left.

2. Use the scoresheet to keep score (one player would be the scorekeeper).

> ** Special rule <u>ONLY</u> at the end of Round 1*
>
> The player with the most 💵 at the end of Round 1 will be awarded a bonus of 10 💵.

1. Discard all your cards <u>EXCEPT</u> **pangolin cards***, which you will keep in front of you. They will to be scored at the end of the game.

How to Play - Power Cards

PANGOLIN

Found in Singapore, pangolins are the world's most trafficked mammal. Pangolins are critically endangered because they are poached extensively for their scales and meat.

END: MOST -5 LEAST +5

How it works:

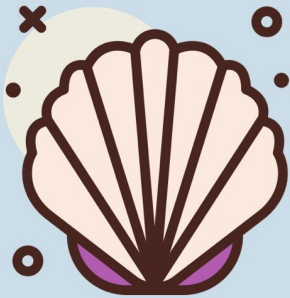- At the end of all 3 rounds, the player with the most pangolin cards gets 🌏 **–5** .

* If multiple players tie for the most, they split the points evenly.

- The player with the fewest pangolin cards gets 🌏 **+5** .

* If multiple players tie for the fewest, they split the penalty evenly.

How to Play - Power Cards

GIANT CLAM

Giant clams — which can grow up to 1 metre long — can be found in the reefs of Singapore's Southern Islands. They provide other marine creatures food and shelter, as well as contribute to reef productivity.

SWAP FOR 2

- If you have a giant clam card in front of you, you may take 2 policy cards on a future turn.

- **How it works:**
  - Choose the first card you would like from your hand as usual.
  - Before everyone reveals their cards, call out "Giant Clam!" and take a 2nd card from your hand, also playing it face-down on the table. Then all players reveal their cards.
  - Before passing hands, put the giant clam card back into your hand. It will now be passed on, and other players may take it to use again.
  - **NOTE:** You may have multiple giant calm cards in front of you but you may only use 1 per turn.

How to Play - **Power Cards**

OTTER

Having dethroned the Merlion as Singapore's (un)official national animal, the otters of Singapore attract the world to their haunts at Marina Bay and Bishan-Ang Mo Kio Park.

ANY COMBINATION OF:
BIOGAS +
SOLAR PANELS + = +8 💵
ASEAN POWER GRID

How it works:

- Having any combination of these 3 cards (Biogas, Solar Panels and ASEAN Power Grid) <u>AND</u> the otter card will give you a bonus 💵 +8 .

- E.g.

How to Play

AND THE WINNER IS...

- Whoever has the **greatest reduction in emissions** wins!

- If multiple players tie for reduction in emissions, the player with the most money wins.

How to Play - Sample Scoresheet

Scoresheet

Objective: **To reduce Singapore's GHG emissions as much as possible while ensuring a competitive economy.**

		Player 1	Player 2	Player 3	Player 4	Player 5
Start	💵	50	50	50	50	50
	🌡️	50	50	50	50	50
Round 1	💵					
	🌡️					
Round 2	💵					
	🌡️					
Round 3	💵					
	🌡️					
Pangolin Points	🦔					
Total	💵					
	🌡️					

Scoring would be done on Google Sheets!

Cards

Giant Clam, Pangolin, Otter

GIANT CLAM

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SWAP FOR 2

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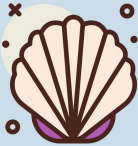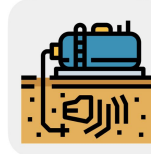
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ASEAN POWER GRID

Causes of Global Warming

FOSSIL FUEL USAGE

Fossil fuel is burned to generate electricity. Singapore relies heavily on natural gas, a form of fossil fuel, to meet its energy needs.

🌡️ +8   💵 +5

COAL GASIFICATION PLANT

A coal gasification plant converts coal into hydrogen and carbon monoxide, gases used in the energy and chemicals sectors.

🌡️ +8   💵 +8

DEFORESTATION

When trees are cut down and/or burned, carbon dioxide is released into the atmosphere. Deforestation also removes the ability of trees to absorb existing carbon dioxide.

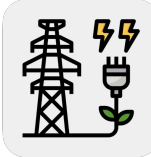🌡️ +7   💵 +7

Alternative Sources of Energy

SOLAR PANELS

Solar panels use light energy from the Sun to generate electricity. This results in clean, renewable electricity.

🌡️ -3   💵 -1

ASEAN POWER GRID

The ASEAN Power Grid allows Singapore to buy green electricity such as hydropower from other ASEAN countries.

🌡️ -5   💵 -5

BIOGAS

Food waste slurry and sewerage are combined to produce biogas, which can be used to replace fossil fuel for electricity generation.

🌡️ -2   💵 -3

Reducing Carbon Emissions

CARBON TAX

A higher carbon price will motivate large polluters to find ways to reduce their carbon emissions.

🌡️ -5   💵 +5

CAR-FREE DAYS

Car-Free Sunday SG is an initiative organised by the URA, where some streets in the Civic District are closed off to vehicles and opened up to cultural events and roadside stalls.

*URA: Urban Redevelopment Authority

🌡️ -2   💵 +1

GLOBAL COOPERATION

A climate change law creates an obligation on the government to meet certain emission reduction targets.

🌡️ -9   💵 -9

Increasing Energy Efficiency

RETROFIT BUILDINGS

Retrofitting* makes homes and buildings more climate-friendly with energy-saving and efficient equipment.

*adding new technology or features to improve existing buildings
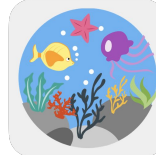
🌡️ -2   💵 -3

GREEN ROOF

Green roofs* can be installed on buildings to cool them, as well as foster the growth and return of urban biodiversity.

*roofs partially or completely covered with vegetation

🌡️ -3   💵 -1

Carbon Sinks

COASTAL RESTORATION

The seas are a carbon sink, absorbing carbon emissions. Restoring the coasts allow the seas to do this better, and protect Singapore from floods due to rising sea levels.

🌡️ -4   💵 -2

REFORESTATION

Reforestation removes substantial amounts of additional carbon dioxide from the atmosphere, and is seen as a way to help cool the climate.

🌡️ -3   💵 -1

Contents (55 cards)

Power Cards
- 8 x Pangolin
- 4 x Giant Clam
- 3 x Otter

Policy Cards
- 3x Fossil Fuel Usage
- 3 x Coal Gasification Plant
- 3 x Deforestation
- 3 x Biogas
- 3 x Solar Panels
- 3 x ASEAN Power Grid
- 4 x Coastal Restoration
- 4 x Reforestation
- 2 x Carbon Tax
- 2 x Car-Free Days
- 4 x Retrofit Buildings
- 4 x Green Roofs
- 2 x Global Cooperation