

### Game Concept:

The year is 2025 and the Intergovernmental Panel on Climate Change (IPCC) has just published a comprehensive Assessment Report on the imminent dangers of climate change should global greenhouse gases (GHGs) remain at their current net levels. The United Nations turns to 3 government bodies that are not only contributing to the problem, but also have the power to Turn the Tides by 2050.

There are different ways to reduce greenhouse gases:

- A. Reducing Carbon Dioxide (CO<sub>2</sub>): Reduce burning of fossil fuels (oil, natural gas, coal, trees, and wood products)
- B. Reducing Methane (CH<sub>4</sub>): Reduce production/ transport of oil, natural gas, and coal.
- C. Reducing Nitrous Oxide (NO<sub>2</sub>): Reduce synthetic fertilizers in agricultural and industrial activities
- D. Reducing fluorinated gases (Energy): Reduce commercial and household energy use

Of course, reducing any of these GHGs would mean reducing energy and production use, which always has an impact on the economy. Tradeoffs will be necessary. Each government has chosen their own climate objectives that they must weigh against available funding, global influence for GHG reduction, and the importance of technological investment.

### How to Win:

- Each government has been given different objectives that translate into victory points (VPs). After Turn 10, each government will tally VP. The government with the highest VP is announced as the winner. If tied, government with the highest \$ wins. **BUT if the game ends with at least 2 GHGs in the red zone, no one wins the game.**

### Action Order:

Each turn, every player will roll to assess who will go first (highest die roll wins), then play to the right. The active player will negotiate deals with other governments. Deals can only be made with the active player. After discussion, the active player may do 1 of the actions below:



#### Reduce one GHG:

- Declare which GHG you plan to reduce (only 1), and announce if you are attempting to reduce this GHG by yourself, or propose a negotiation with another player.
  - If reducing GHG alone, declare amount of committed \$ and roll.
  - If proposing a negotiation, offer player(s) a deal.
- More \$ = higher probability of a successful roll and the degree of GHG reduction. See success conditions on the next page.
- \$ is paid even if the roll is unsuccessful.
- If unsuccessful, any player involved in the deal can use available tech to reroll. See Tech table below.
- If successful, active player will reduce the GHG and gain global influence for reducing GHGs by receiving a Popular Opinion Point (POP).
  - Receive +1 POP for every 25% of GHG reduction (+2 POP for 50% of GHG reduction, +3 for 75% of GHG reduction).
  - Division of POPs can be negotiated among players, but must be agreed upon prior to rolling for success.

#### POPs:

- POPs represent global influence for each player.
- **If you have +3 POPs prior to rolling to reduce GHG, you will receive +\$1 on a successful roll. However, if you have negative POPs, the probability of a successful roll decreases by POP count.** Ex: -1 POP = -1 on probability of success, -2 POP = -2 on probability of success.

#### Roll for Event:

- 1-3 = \$ increases by die roll; 4-6 = one GHG increases by 25%.

#### Tech Investment:

- Pay \$2 for one Tech icon. 1 tech/turn. See Tech table below.

#### Increase Production:

- Roll to increase \$.
  - 1 or 6 is a fail.
  - If successful, increase any GHG by 25%, then increase \$ by number rolled. (Ex: If you roll a 4, increase \$ by 4)
  - If all GHG's are at 100%, active player **MUST** lose 1 POP.
  - If any GHG's are less than 100%, one GHG (active player's choice) **MUST** increase by 25%.
  - Active player loses 1 POP **OR** pays \$1 for an information campaign that would blame another country for the increase in GHG. Active player chooses another player and directs them to lose 1 POP.



# Turning Tides

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## Tech Investments Table

Turns 1-4:	Pay 1 Tech Investment to reroll up to 2 times
Turns 5-8:	Pay 1 Tech to reroll up to 2 times <b>OR</b> Pay 2 Tech to buffer GHG increase by 25%
Turn 9-10:	<b>As an Action:</b> Pay 3 Tech Investments to guarantee any GHG reduction by 75% (receive 3 POPs)

**Set Up:**

- Select an objective card and take any pieces matching the color of your objective card.
- Each player's \$ indicator starts on 10; Each GHG indicator starts on 100%; POP starts on 1.
- 1d6 dice
- pencil

Gov. Funding \$	Success conditions	GHG reduction impact
\$1	roll 1	reduce GHG by 25%, +1POP (16.6%)
\$2	roll 1 or 2	reduce GHG by 25%, +1 POP (33.3%)
\$3	roll 1-3	reduce GHG by 25%, +1POP (50%)
\$4	roll 1 or 2	reduce GHG by 25%, +1 POP (33.3%)
	roll 3 or 4	reduce GHG by 50%, +2POP (33.3%)
\$5	roll 1 or 2	reduce GHG by 25%, +1 POP (33.3%)
	roll 3-5	reduce GHG by 50%, +2 POP (50%)
\$6	roll 1-4	reduce GHG by 25%, +1 POP (66.6%)
	roll 5 or 6	reduce GHG by 75%, +3 POP (33.3%)

	A. CO2 Net Growth Carbon Dioxide	B. CH4 Net Growth Methane	C. NO2 Net Growth Nitrous Oxide	D. Energy Net Growth Fluorinated Gases
Red Zone	100% (Start)	100% (Start)	100% (Start)	100% (Start)
	75%	75%	75%	75%
	50%	50%	50%	50%
Green Zone	25%	25%	25%	25%
	0%	0%	0%	0%

Gov. Funding for Reducing Climate Change											Gov. Funding for Reducing Climate Change											Gov. Funding for Reducing Climate Change										
0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
Popular Opinion Points (POPs)											Popular Opinion Points (POPs)											Popular Opinion Points (POPs)										
-2	-1	0	1	2	3	4	5	6	7	8	-2	-1	0	1	2	3	4	5	6	7	8	-2	-1	0	1	2	3	4	5	6	7	8

+\$1 when negotiating with other governments 
 Levy taxes to gain +/- 1 on die roll 
 + 1 POP when negotiating with other governments

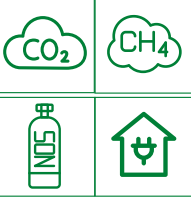
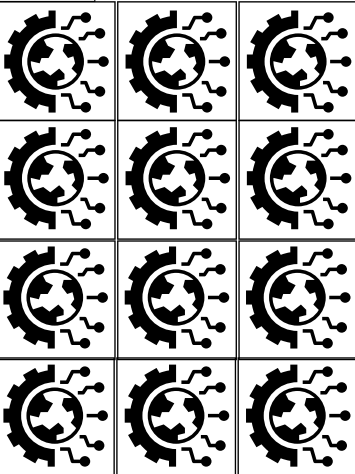
Turn 1: 2025	Turn 2: 2026	Turn 3: 2029	Turn 4: 2032	Turn 5: 2035 If all 4 GHGs are in the red zone, all players lose 2 POP	Turn 6: 2038	Turn 7: 2041	Turn 8: 2044	Turn 9: 2047	Turn 10: 2050 If 2 GHGs in the red zone, no one wins
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Timeline marker.  
Start on Turn 1.

# Print and Cut

Tech Investment  
Icons.



Greenhouse Gas (GHG) indicators: Cut out shapes and place on corresponding Greenhouse tables. All indicators start at 100%.



Government funding (\$): Cut out shapes and give to each player. All countries start with \$10.



Popular Opinion Points (Pops) marker. Everyone starts with 1.

## Frequently Asked Questions:

1. Can I use my player bonus as a bargaining tool?

*Yes, but you can ONLY use your bonus when you are the Active Player. It is a bonus move, so you can use your bonus in addition to your action.*

2. If reducing only 1 GHG with another player, can we split the global influence for that reduction?

*No. You can only receive 1 POP for every 25% reduction. If reducing a GHG by 50% (+2 POPs), you can split the POPs. Active player receives POP by default.*

3. Can I bargain with future promises?

*Yes, but you are not held to that promise. If you renege on that promise, it could impact future negotiation opportunities.*

4. Should we reveal our objectives?

*Players can choose to reveal objectives, or hide them until the end.*

5. Why does Tech change over time?

*Tech in this game is meant to represent general green tech that, if implemented early, can have a deeper impact in future years or showcases the evolution of more impactful tech over the years. At the beginning of the game, tech can act indirectly to help reduce GHG or buffer increased net levels of GHG despite increased production use. At the end of the game, tech can act in a more direct way to reduce GHG.*

6. Why is the developing world not present here?

*I picked 3 governments that were not only some of the larger contributors to the problem, but governments that also have the ability to turn the tides. As mentioned below, this game could be customized for different players as desired.*

7. How did you pick these objectives? Are you saying that US not care about reducing C?

*The objectives chosen for this game are not meant to represent real life objectives for each of the government bodies represented in this game. I chose these objectives on purpose to emulate the limited cooperation in climate change action. As the game is meant to highlight competing interests, I balanced the objectives for each player to surface existing tensions.*

Team US Objective:



- By 2050, reduce A, B and D GHGs to the green zone (1 VP for A, B, or D GHG in the green zone, BUT receive 4 VP for all A, B, and D in the green zone).
- Receive +1 VP if A is at 0%.
- Have higher POP than anyone else = 4 VP.

**Active Player Bonus:** +\$1 to use when negotiating with another government to reduce a GHG (3 times only).

Team European Union



Objective:

- By 2050, reduce C and D GHGs to the green zone (1 VP for C or D GHG in the green zone, BUT receive 3 VP for C and D in the green zone).
- Receive +1 VP if C or D GHG is at 0%.
- Have equal or greater POP than US = 4 VP.

**Active Player Bonus:** Levy taxes to gain +/- 1 die roll (3 times only).

Team China Objective:



- By 2050, reduce any 3 GHGs to the green zone (3 VP).
- At the end of the game, can exchange tech icons for VP (2 tech = 1 VP).\*
- US does not have the highest POP = 5 VP.

\*Ex: If China ends the game with 3 tech, China gets 1 VP.

**Active Player Bonus:** Receive +1 POP when negotiating with another government to reduce a GHG (3 times only).

Player objectives card: Cut out cards and give to each player. Note: Feel free to customize different cards to represent a variety of different countries/governments.