EN-ROADS

Climate Action Simulation

Facilitator Guide

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Welcome

This guide is intended to support your facilitation of the *Climate Action Simulation*, a group roleplaying mock UN summit that promotes greater understanding of the causes of climate change and the solutions essential to mitigating it. The game is framed by the En-ROADS Climate Solutions Simulator, which allows participants to explore and rapidly assess the impacts of different solutions to address climate change during the event.

While this guide provides step-by-step instructions for leading the workshop, it is not intended to be your only preparation. A successful session also depends on your ability to explain the dynamics of the En-ROADS simulator with advanced facilitation skills—which you'll build through the [Mastering En-ROADS](#) training.

Climate Interactive also offers similar group activities:

- ***[World Climate Simulation](#)*** – A roleplaying game where participants play diplomats at a UN climate summit, like with the *Climate Action Simulation*. The primary difference is that *Climate Action Simulation* is paired with the En-ROADS simulation model and focuses on how sectors of activity like energy supply, energy use, and land use affect climate change; while *World Climate Simulation* is paired with the C-ROADS model and focuses on when and how much nations must reduce their emissions to reach the international climate goals. Since the *Climate Action Simulation* focuses on more specific solutions, it can be a nice follow-up event for groups who have played the *World Climate Simulation*.

- ***[Climate Solutions Workshop](#)*** – A non-roleplaying workshop format that is also paired with the En-ROADS simulation model. Compared to the game, the workshop can be run within a shorter amount of time or used with groups not interested in roleplaying.

Materials for all of Climate Interactive's group activities are available for free and can be found at [climateinteractive.org](#).

This guide was last updated in February 2026.

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Game Overview

The *Climate Action Simulation* game is premised on a fictitious climate summit organized by the United Nations Secretary-General to urgently address climate change. Influential stakeholder groups have been convened at the summit, and their directive is to work together to create a plan to limit global warming to well below 2°C and aim for 1.5°C above pre-industrial levels, the international goals formally recognized in the Paris climate agreement.

- The game is run by a trained facilitator acting as the UN Secretary-General who has convened the summit. The facilitator may be assisted by co-facilitators.

- Participants are divided into six teams that represent different global stakeholders of business, government, and civil society who can influence climate solutions. The typical groups to include are:

    o **Conventional Energy** – coal, oil, natural gas and nuclear energy producers who deliver 95% of the world's energy supply; and the utilities and firms that deliver this energy to consumers and provide equipment to these industries.

    o **Clean Tech** – renewable energy producers (solar, wind, hydropower, geothermal); bioenergy producers); and the growing clean tech industries including energy storage, electric vehicles, energy efficiency, green buildings and yet-to-be-commercialized zero-carbon energy and carbon capture technologies.

    o **Industry and Commerce** – the major industries that drive energy consumption including automakers, airlines, shipping and freight companies, public transit authorities, industrial machinery, construction, real estate, consumer goods (clothes, electronics, furniture, etc.), information technology, and other large corporations.

    o **Land, Agriculture & Forestry** – agricultural, food, and logging companies; the largest landowners, government ministries of forests and agriculture; and land conservation agencies.

    o **World Governments** – government leaders from developed and developing nations who represents their countries at international bodies like the United Nations.

    o **Climate Justice Hawks** – leaders of the growing climate, social justice, and environmental justice movements; representatives from developing nations and vulnerable communities on the frontlines of climate impacts seeking ambitious climate action that limits warming to 1.5°C.

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- Facilitators can add or remove groups to fit their setting of interest. In the Appendix, we have suggested a version of the game with 8 total teams when World Governments is split into three teams: Developed Nations, Rapidly Emerging Nations, and Developing Nations. In addition, two optional groups can be added: Health Advocates and Banking & Finance. Feel free to write your own briefing sheets and share them with our team at Climate Interactive.

- The game is run in multiple rounds as directed by the facilitator. During the team meeting period, teams discuss their climate solution strategies with each other and may also choose to negotiate with other teams. Then during the plenary presentations, each team proposes one action to be implemented or removed.

- Teams' actions are analyzed in real-time with the En-ROADS simulator to determine their effects on the climate.

- The game is played until a scenario under 2°C warming is reached, or time is up.

- The game is ideal for groups of 20 to 50 people and normally runs for 2 to 4 hours. It is designed to be played by a wide range of audiences, from high school students and community members to industry professionals and policymakers (view the Appendix for tips on running the game under different conditions, such as with a larger group or a more limited amount of time).

Purposes

The *Climate Action Simulation* was developed to address three important purposes:

1. **Insights and Understanding** – Enable participants to gain insights into the factors that affect climate change and what the solutions and possible paths are for equitably and effectively addressing climate change and achieving the international climate goals.

2. **Interactive Learning** – Create a participant-centered, interactive learning experience to explore the best available science on climate impacts and solutions. Participants drive their own learning, so they are more engaged and gain much more than they would through a lecture format. They also learn from each other as they work together to create a new climate scenario for our global future.

3. **Follow-up Action and Diffusion** – Participants gain a meaningful climate leadership perspective and lasting impression through the game experience that can translate into change in the real world. They learn which types of climate policies and solutions make a difference and can advocate for them. They think and explore for

themselves about their own role in addressing climate change. They can share about their game experience or become facilitators themselves.

Preparation and Setup

Event Registration

An enormous amount of work has gone into developing En-ROADS and the materials for this game. When running a Climate Action Simulation, we ask that you register your event so that we can track metrics, evaluate the impact of our work, and continue to receive funding for it. You can choose to register your event before or after you have held it. Register your event here: https://www.climateinteractive.org/register/

Facilitation Roles

The *Climate Action Simulation* can be facilitated by one person, but the ideal facilitation team includes two people – one person more focused on running the En-ROADS simulator and explaining its dynamics and the second person more focused on group dynamics and learning.

It can be helpful to co-facilitate with someone who has knowledge and skills that complement your own. For example, a scientist or science educator may want to co-facilitate with someone who is more familiar with policy, economics, or business. Enlisting co-facilitators also gives them an opportunity to learn how to facilitate. If you are the primary (or sole) facilitator, you will be playing the role of the UN Secretary-General.

For online simulations, a 'host' role is also important for ensuring the virtual meeting software is running smoothly. The host's responsibilities include things like assigning and managing participants in breakout rooms, managing participants' questions and controls (mute/unmute, hand raising, etc.), ensuring the presenter's audio and video are working properly, and sending out important links (such as any game materials) in the chat. You can choose to include an additional co-facilitator to play the host, or take on the host responsibilities alongside your facilitator role.

We encourage you to have a change of clothes accessible to quickly "switch" from a regular facilitator to your role. No matter your role, it's best to look presentable and be ready for improvisations. Test your backdrop, lighting, and audio beforehand. If you plan to use a virtual background, blank walls behind your seat often work well. Make sure to have lots of light in the room you are in to illuminate your face and avoid shadows. The game works best when facilitators and participants actively play their roles, so lead by example and have fun with it!

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Event Setup

Dividing Participants

Participants are divided into groups and given briefing statements describing their respective group. Groups can be divided up and given their briefing statements in advance or during the event. If applicable, place participants in the groups most unlike their real-world role in the climate policy dialogue (e.g., put environmentalists in the conventional energy group).

Once you have divided your participants, provide them each with these materials (found here):

- Briefing Statement (specific to their group)
- En-ROADS Guide to the Control Panel
- Proposal Form
- (optional) Climate Change Fact Sheet
- (optional) Name Tags

For online events, we have created a Teams & Materials Google worksheet with easy access to all materials and links. We recommend copying and pasting the contents of this sheet to your own version so that you can edit and share with your participants. We have also included virtual backgrounds for facilitators and participants to use to liven up the online experience!

Guidelines for Respectful Roleplay

A key feature of the Climate Action Simulation is having participants "get into character" and adopt the perspectives and priorities of the real-world groups they are representing. To ensure that the Climate Action Simulation is a respectful, positive experience for all participants, we encourage sharing the following guidelines. We have adapted them from the American Model UN guidance:

- **Clothing and head coverings**: Participants should not wear the traditional or religious clothing or head coverings of any nation or organization, unless the

participant themself is of that culture or religion and it is a component of their personal practice.

- **Accents:** Participants should not pretend to have the accent or speech characteristics of any nation or group of people they are roleplaying in the game. Such portrayal is inappropriate, could be considered offensive by other participants or observers, and detracts from the goals of the game.

Suggestions: Participants could use a virtual background (available in the [Teams & Materials Google sheet](#)) to represent their group, or create a physical backdrop with poster board or other accessories to illustrate some of their priorities, viewpoints, or messages.

Room Setup

For an in-person event, the room should be set up with:

- A projector and computer that has access to En-ROADS and the PowerPoint slides accompanying this game. The projected image should be large enough and positioned so that all participants can see it clearly.

- Chairs and tables for the groups. Each table should have a table tent sign with the group's name along with the handouts. To show global wealth disparity, set up some tables with a tablecloth, flowers, pens, notepads, and snacks for the richer delegations. These details can symbolize the relative wealth of the Conventional Energy and Industry & Commerce teams. Additionally, you might offer candy or fake money to the Conventional Energy delegation and sign-making supplies to the Climate Justice Hawks. While they are optional, props make the roles feel more authentic and make the game more engaging. For the moderately wealthy delegations, set up chairs and tables, but no snacks. Then, have the Climate Justice Hawks group sit on the floor, perhaps with one chair for the group's wealthy leader. (Note – though it may seem untraditional in professional settings, we almost always ask this group to sit on the floor, even in business settings.)

- Phone or stopwatch to keep track of time during the event.

- Somewhere out of sight, such as outside the room or in the back, store your formal clothes or accessories for acting as the UN Secretary-General during the roleplay period, e.g., a suit jacket, tie, or scarf.

- (optional) A white board or flip chart to sketch possible temperature outcomes that
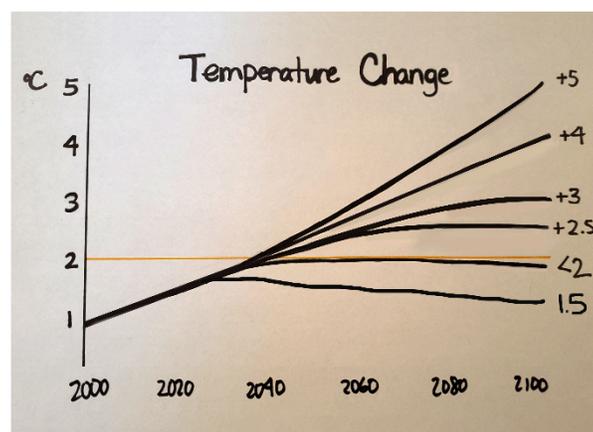
you will use to ask participants to estimate the impact of their actions before inputting into En-ROADS.

- (optional) Internet access for participants to do quick research or test out their proposals.

For an online event:

- Choose an online platform you have access to that has the "breakout room" feature – our team has found that Zoom Meetings work well for this.

- Familiarize yourself with the controls and features of your virtual meeting software. Make sure to learn where any important controls are beforehand – chat boxes, muting/unmuting participants, virtual background controls, etc.

- If you have a co-facilitator(s), we suggest you both practice your virtual meeting software controls together.

- Be aware of the audio and video of both facilitator/hosts and the participants. If you want participants muted at the beginning of the presentation, be mindful of this going into your event, and set up your virtual meeting preferences beforehand.

Agenda

Typically, two to four hours are recommended for the entire session; allow more time for audiences who are new to the topics so they can better develop their game strategies. Ideally you would have about two hours for the initial presentation and roleplaying, and about one hour for the debrief. However, many variations are possible, from making it into a multi-day event to holding an abbreviated version in an online webinar.

Here is what a typical agenda might look like:

1. Introduction	5 - 15 min
2. Group Assignments	10 - 15 min
3. UN Summit Opening Presentation	10 - 20 min
4. Round 1 Team Meetings	10 - 20 min
5. Round 1 Plenary Presentations	15 - 30 min
6. Round 2 Team Meetings & Negotiations	15 - 30 min
7. Round 2 Plenary Presentations	10 - 20 min
8. Additional Rounds of Play	10 - 20 min
9. Debriefing Discussion	30 - 60 min
Total	**2 - 4 hours**

1. **Introduction** – Facilitator delivers informal introductory presentation before officially opening the mock UN summit (in step 3), providing background information on climate change, an introduction to the game play and goals, and a quick look at the En-ROADS simulation model.

2. **Group Assignments** – Participants are divided into 6 roughly evenly sized groups (or more, if the 8-team version is used, or the optional health and banking groups are added) and given a briefing sheet that describes who they represent and what their group's assignment is (this can also be done in advance). Participants take time to read their briefing sheet. Group members can talk within their groups to exchange views and develop a common understanding of their group. During this time the facilitator or co-facilitators can go around and check in with the groups individually.

3. **UN Summit Opening Presentation (roleplay game begins)** – Facilitator takes on the role of the UN Secretary-General and begins the roleplay game by delivering a passionate speech about why the summit has been convened — reinforcing the stakes of climate change, the role each group has in addressing it, and the goal for the summit, which is to limit global temperature rise to well below 2°C and aim for 1.5°C.

4. **Round 1 Team Meetings** – Participants take a little time to individually consider the actions their group should propose versus oppose. Group members then discuss with each other to align on their team strategies and proposed actions so they can fill out their proposal form.

5. **Round 1 Plenary Presentations** – Each group makes a short presentation to the plenary, laying out one proposed action to add or remove from the climate plan that has been created so far. Each proposal is entered (or removed) in En-ROADS to test its impact, and the action is briefly discussed by the whole group. After every group has put forward an action, Round 1 ends with a short discussion about results from the round.

6. **Round 2 Team Meetings and Negotiations** – Teams have time to discuss additional strategies for follow-up actions; and this time the floor is also opened for negotiations. Groups are encouraged to reach out to other groups, seek to understand their positions, and affect their proposals.

7. **Round 2 Plenary Presentations** – Following negotiations, each group gets another chance to lay out a proposed action to be inputted into En-ROADS.

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8. **Additional Rounds of Play** – Teams continue to make plenary presentations and enter the actions into En-ROADS together. The game is played until participants either reach the goal or run out of time.

9. **Debriefing Discussion** – After the mock summit concludes, the facilitator asks everyone to step out of their roles and reflect on the experience, focusing on feelings, hope, and call to action.

Game Facilitation

1. Introduction

Dress more casually than you will dress later, when you are playing the role of a UN official. Begin by welcoming the participants as themselves, not in the roles they will soon play. Briefly introduce the background and motivation for the event, the urgency of addressing climate change (sometimes this is included later with the Secretary-General's Opening speech), the use of the En-ROADS simulator, and the event agenda. There are presentation slides available on the Climate Interactive website to support this introduction, however select what suits your audience and needs. Limit this segment so participants can interact with the model and each other as soon as possible, instead of sitting and listening.

If running the event online, the host should begin organizing the team breakout rooms as the facilitator is giving the introduction (see below for different approaches to group assignments).

2. Group Assignments

After you have made your introductory speech, finalize the group assignments. Group assignments can be made in advance, if you know all the participants ahead of time. Here are three approaches to group assignments:

- Let participants randomly sort themselves into the available seats as they enter the room, or by creating random breakout rooms if running the event online.

- Pre-assign the group members if you have some information about the participants prior to the event that you want to use for assigning them to their roles.

- Let participants choose their groups themselves e.g., "Choose the group with which you would most identify with"; and afterwards, you redistribute them to the groups unlike their preferred choice. Adjust as necessary to ensure groups are roughly evenly sized.

Once all the participants are in their groups, turn their attention to the briefing sheets which describe their group's goals. If running the event online, open the breakout rooms at this point. Give participants some time to read their materials. For an online event, also encourage participants to upload their virtual background and change their participant name to include their team name during this time. Group members can talk within their groups to exchange views and develop a common understanding of their group. The facilitator can go around and check in with the groups individually. *See the Appendix for more tips on managing online breakout rooms.*

While participants finish reading over their briefing statements, step away into another room, or turn off your camera, and put on your official dress as Secretary-General—e.g., tie/scarf and suit jacket.

Sample Script: "Take a few minutes to read the briefing sheet about your group, then discuss with your team to develop a common view of your group's identity and goals. Keep in mind the guidelines for respectful roleplay. When the summit starts, you will not be yourselves – you will be leaders and important representatives from different stakeholder groups. Please play your roles."

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3. UN Summit Opening Presentation

When you are ready to begin the roleplay game, ask someone on your team to introduce you by pounding a gavel or calling the room's attention and announcing:

> *"Ladies and Gentlemen. May I have your attention please. Please rise and welcome the Secretary-General of the United Nations!"*

Stride in. Do not smile. Formally but graciously welcome the group of world leaders (participants) to the climate action summit to address the climate crisis.

The essential features of the opening speech as the Secretary-General include:

A. Welcome and introduction of groups
B. Summit goals
C. Urgency and historical precedent
D. Game mechanics

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  E. En-ROADS overview

A. Welcome and introduction of groups

Welcome participants and describe who is in the room.

> *"Welcome to the Climate Action Summit. Thank you for taking time out of your busy schedules to attend on such short notice. You are gathered here today as key global stakeholders who must work together to determine the best way to address climate change. I would like to start by recognizing the groups in the room. We have six sectors (point at each group and name the six sectors around the room with a brief description of who they are)."*

B. Summit Goals

State that the goal of the summit is to create a scenario that limits warming to well below 2°C and aims to get as close to 1.5°C as possible. For example:

> *"The Paris Agreement, signed by the nations of the world in 2015, outlined a goal of limiting global warming to well below 2°C and aims to get as close to 1.5°C above pre-industrial levels as possible. While this event was pivotal, it was just the start of our journey to solving the climate crisis together. The pledges that countries made, even if fully implemented, fall far short of the goal of 2°C.*
>
> *Therefore, I have brought you together to work within and across our spheres of influence to solve the climate crisis together.*
>
> *The mission of our summit today is to create a feasible roadmap to stay well below 2°C and aim to 1.5°C of warming.*
>
> *Avoiding the worst impacts is still possible, but only if we act immediately. You must balance the need for climate action with that of your own and your stakeholders' needs. I have the utmost confidence in our ability to succeed today. In fact, we need to succeed, because we are running out of time to take meaningful action and everything is at stake."*

C. Urgency & Historical Precedent

Build urgency by using vivid details to describe some of the impacts already happening due to climate change, perhaps citing a recent climate-related natural disaster from the regional news. After making the case for urgency, provide a historical example of bold

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action as proof of humanity's ingenuity to solve big problems and to remind people that change can happen quickly.

To build urgency:

> *"We are meeting at a difficult time in human history. Analysis from the IPCC (Intergovernmental Panel on Climate Change) shows that we must enact sweeping solutions this decade in order to limit warming to 2°C and as close to 1.5°C as possible. Warming above these levels will yield catastrophic and irreversible impacts to the economy and human welfare of all nations. Even going from 1.5°C to 2°C of global warming would expose several hundred million more people to potentially life-threatening climate impacts and poverty.*
>
> *It is also important to understand that the climate crisis doesn't start at 1.5 or 2°C. It is already here today. Greenhouse gases emitted by human activity have already increased global temperature by 1.4°C. Climate change is already a health crisis, driving deadly heat, worsening extreme weather, spreading infectious disease, and overwhelming health systems, especially in the communities least responsible for emissions. Himalayan glaciers that provide water to some 240 million people are already melting. Storms like Hurricanes Ian and Helene and Super Typhoon Yagi are already getting stronger due to climate change. The list goes on."*

To add a fictional personal touch:

> *"Last week I received a call from you, Mrs. [or Mr.] CEO of Fossil Fuel Multinational, Inc. (or insert other name). I was sad to learn that you lost somebody close in the recent forest fires in California, leading you to advocate for this meeting today—a meeting I've been requesting for three years now."*

To provide historical precedence:

> *"While we face an enormous challenge, I am here to remind you that we have what it takes to solve the climate crisis. The decision makers who can catalyze the solutions are here in this room today. Furthermore, humanity has come together and proven our courage and willpower to solve many problems and crises by acting swiftly in other times in history."*

Tell the story of an example for when people have risen together swiftly to face a great challenge. Here are a few, or choose your own:

- Example for U.S. audience – "I'm reminded of another time in history when our nation took swift and bold action after a horrible event. On December 9, 1941, the United States was bombed at Pearl Harbor. President Franklin D. Roosevelt

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immediately invited the Chairman of General Motors, the United States' largest automobile manufacturer, to Washington DC. The Chairman proposed modest decreases to the building of civilian vehicles and modest increases of military equipment such as tanks. Two days later, President Roosevelt had convinced him to eliminate production of civilian vehicles to shift factories to support the war effort. Other programs in metal recycling, rationing of meat, increasing "Victory Gardens," and other public efforts followed."

- U.S. example – In 2019, the U.S. celebrated its 50th Anniversary of the moon landing, which had been considered an extraordinary achievement and engineering feat.

- International example – After the Fukushima nuclear accident caused by an earthquake in 2011, Japan replaced half of its nuclear power capacity with energy efficiency. Japan was in a seemingly impossible situation. A tremendous amount of conventional generation capacity was unavailable, including its entire nuclear fleet, and the country faced the risk of blackouts during summer consumption peaks. Miraculously, in just a few short weeks Japan managed to avert the rolling power cuts through energy efficiency and conservation actions. Moreover, they turned these emergency measures into lasting solutions.

- International example – The 2015 Nepal Earthquake is an example of resilience and solidarity. The 7.8 magnitude earthquake that hit the country on April 25, 2015 followed by a 7.3 magnitude aftershock two weeks after led to more than 8,000 human fatalities and about 600,000 settlements destroyed and several thousand people displaced. Rising above the tragedy, respondents near and far including civil societies, humanitarian agencies, independent volunteers, private sectors, local governments, and foreign countries joined hands to provide emergency response and recovery immediately. A noteworthy example of quick and tremendous partnerships across local, national and global levels.

Link the historical example to today:

"We are in a similar moment that demands the best optimism, cooperation and solutions that humanity can create. In this Climate Action Summit, we have a very limited amount of time to determine a global plan to address global warming and prevent the worst-case scenarios for climate disruption."

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D. Game Mechanics

Before launching the first round of negotiations, take a few minutes to explain the key game mechanics and orient participants to the En-ROADS control panel.

> *"Here is the agenda for today's meeting. You will have some time to discuss strategy and proposed actions with your team and then we will proceed into a round of plenary presentations, where each team will take a turn proposing actions – choosing from the available sliders as shown on your one-page Guide to the En-ROADS Control Panel <lift a guide for participants to see>. I will invite the first team to propose one policy or investment by sending up a delegate to give a short speech to the whole group about their proposed action, as well as one near-term co-benefit and equity considerations for that action. We will input that action in the En-ROADS simulator to examine its impact on global temperature increase as a group.*
>
> *After every group has a chance to go, we will go into a second round of negotiations and plenary presentations to propose more actions. We will continue until we reach our goal or run out of time. Good luck!"*

Find more information on co-benefits and equity considerations in the [En-ROADS User Guide](#).

En-ROADS Overview

This could be a continuation of the Secretary-General's opening speech or an opportunity for a co-facilitator to step in and orient people to the En-ROADS simulator and control panel.

> *"We are about to begin the first round of negotiations. Before we do that, let's take a moment to orient you to the En-ROADS simulator <point to screen> and the set of sliders you can choose from by referring to your Guide to the En-ROADS Control Panel <lift guide>."*

First, show the temperature graph and the Baseline Scenario:

 "If we take minimal additional action, we expect that <point at temperature graph> global temperature will increase dramatically from today out to year 2100.

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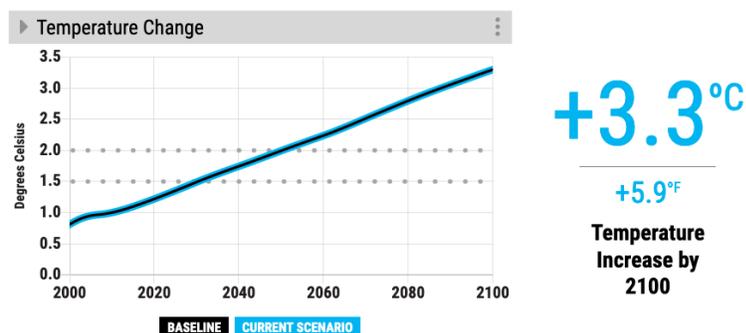
This is a graph of global temperature change from the year 2000 to 2100. We have already heated up the planet by over 1℃ <point>. Our goal is to limit warming well below 2°C, and aim for 1.5°C, which are the dotted lines <point> here."

In the US, some facilitators prefer to use the Fahrenheit temperature scale. You can switch the units in En-ROADS under the View menu and change the goals in your presentation accordingly.

Optionally, show 1-2 graphs or maps under the Impacts section of the Graphs menu to make this temperature change tangible and relate it to your local area. For example:

> *"Temperature change isn't just a number on a graph—it shows up in our daily lives and in our health. <Show the Extreme Heat Days map> If we zoom into our own region, we can see how the number of extremely hot days increases as warming rises. In a world where we don't take action, our local community will face significantly more days where heat poses serious health risks—especially for children, older adults, outdoor workers, and people without access to air conditioning."*

Second, orient participants to the Control Panel:

> *"Using the En-ROADS climate simulator model, you have 19 types of actions that can be proposed to affect future warming. <Point at sliders on screen and guide.> Your Guide to the Control Panel <wave guide or add a link to it in the online chat> is a handy reference to the solutions you can propose during the summit."*

For a brief and simple setup, you could conclude your introduction here and move into Round 1 Team Meetings.

For a longer and more advanced introduction, continue below:

Third, describe the drivers of greenhouse gases from energy consumption by switching to the Kaya Graphs view in En-ROADS [from the dropdown menu at the top select View > Kaya Graphs]:

> *"These five graphs show the drivers of carbon dioxide (CO_2) emissions from our global energy consumption, which reflects about 2/3 of all greenhouse gas emissions. The*

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other third of emissions are from land use changes (CO$_2$), and other greenhouse gases such as methane, nitrous oxide, and the F-gases."

▶ Kaya Graphs

BASELINE **CURRENT SCENARIO**
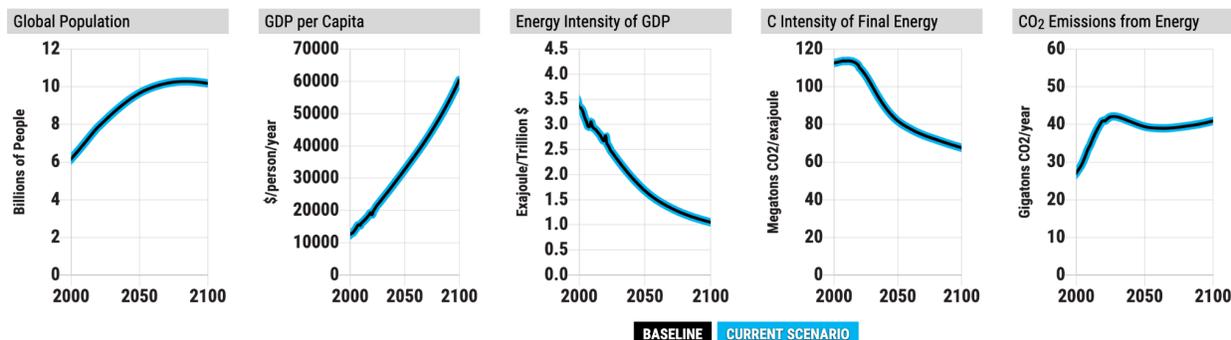
1. *"**Global Population** is growing and the UN anticipates growth to roughly 10 billion by the end of the century. The rate of population growth is slowing over time as people have smaller families."*

2. *"**GDP per Capita** is growing steadily per year, mostly as people in rapidly developing countries such as China, India, South Africa, Mexico, Brazil, and Indonesia attain higher standards of living."*

3. *"Simultaneously, the world economy is becoming more energy efficient, or using less energy per unit of economic output – as shown by the **Energy Intensity of GDP** decreasing over time. Technologies are improving—more efficient cars, buildings, machines and so on—and economies are shifting from manufacturing to service."*

   - *"The product of the first three — Global Population, GDP per Capita, and the Energy Intensity of GDP — is equal to the total amount of energy used by the global economy."*

4. *"**Carbon Intensity of Energy**, the amount of carbon dioxide emitted by energy use, is expected to decline over time. Overall, this downward trend in carbon intensity is attributed to the gradual shifting away from fossil fuels and towards renewable energy sources."*

5. *"Multiply all four factors together, and you can see that overall **Carbon Dioxide Emissions from Energy** is growing each year, leading to the increase in temperature."*

   - *"These factors explain in simple terms, why emissions are going up: the improvements in energy efficiency and decarbonization are not keeping up with the strong growth in population and energy consumption."*

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One way to use these graphs: if someone asks what can be done to reduce carbon dioxide emissions from energy, there are four choices: fewer people, less consumption, more energy efficiency, and less energy from fossil fuels.

Fourth, go back to the main graphs (click the Home icon) and show Global Sources of Primary Energy:

> *"What are our sources of energy? We can see on this graph coal in brown, oil in red, and natural gas in blue. We have renewables, such as wind and solar, in green, bioenergy in pink and nuclear energy in light blue. Finally, a potential new zero carbon energy source will appear in orange if we choose to see a technological breakthrough."*

▶ Global Sources of Primary Energy

COAL   OIL   GAS   RENEWABLES   BIOENERGY   NUCLEAR   NEW ZERO
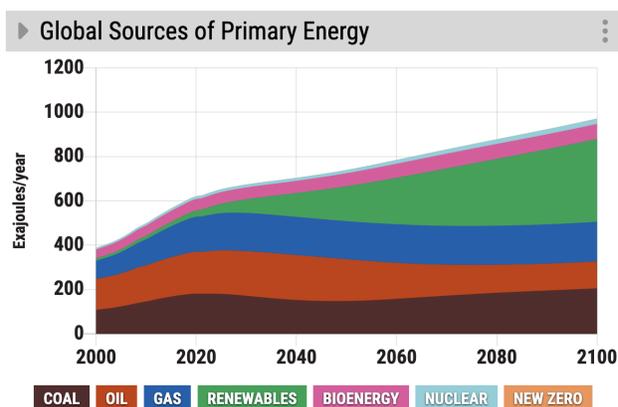
Finally, pause for questions before moving into the team meetings:

> *"So this is the En-ROADS simulator and its baseline scenario at a glance. Any questions about the basic mechanics before we move into Round 1 Team Meetings?"*

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4. Round 1 Team Meetings

Teams have time to meet and prepare proposals for Round 1 Plenary Presentations. In their team meetings, groups should internally discuss their game strategies and align on their proposal for Round 1. Note that it can take some time for groups to build consensus, but there is a lot to cover so be aware of how much time you have. You can start by prompting participants to individually mark their proposals before discussing as a group.

For example:

> *"On your En-ROADS Guide to the Control Panel <lift guide>, each of you should circle the 2-3 actions you think your team would most want to implement, and the 2-3 actions you think your team would oppose. Then talk as a group about your ideas. Align as a group around your one proposed action for Round 1, and your strategies for the summit. Each action can include one step in either direction (left or right) on one of the 19 sliders, or you can reverse another group's action. Fill out your proposal form to guide you throughout the summit. You will have 2 minutes to explain to everyone why your group is choosing the action and what some of the*

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co-benefits and/or equity considerations of the action are. Make your cases as compelling as possible. You have ten minutes for your meeting."

You and your co-facilitators should go around and check in on each group and coach them on their goals and strategies. When time is up, close the team meetings by calling everyone back. *See the Appendix for more tips on managing online breakout rooms.*

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5. Round 1 Plenary Presentations

Open the Plenary Presentations. Remind teams that they should appoint a representative to deliver a less than two-minute presentation of their proposal.

The order of teams you call on does not matter significantly. However, the Conventional Energy and Climate Justice Hawks teams may have more extreme views, so you may wait to have them go after another group or two takes a turn.

Invite a representative from the first team to present their action, why they chose it, and perhaps what they want others to do – within a one or two minute speech. If you have a timer you could hold it up to emphasize the time limit.

Listen closely to their speech, demonstrating the sort of focus you want others to employ. Amidst all the rhetoric, note the specific action that is being proposed. You may need to clarify or correct their proposal. For example:

- Don't allow two actions in Round 1 (many will attempt this). There will be time for additional actions in later rounds. This enables you to discuss one action at a time and pace the gameplay accordingly.
- If they propose a conditional action (i.e., we will do this if they do that) encourage them to make the deal either right on the spot or later in the next team meeting and negotiation period. Conditional actions that are not clearly satisfied are not entered into the model.
- Details about the actions that are outside the scope of the model are encouraged, particularly to make a case for how the action considers the most vulnerable and the co-benefits of that action, but make sure there is some actionable item to test out in the proposal.

At the end of the speech, call for brief applause and thank the delegate.

You will then enter the action into En-ROADS:

Assume for the following example that someone proposes to "Increase Energy Efficiency in Buildings and Industry." You can skip or breeze through some of these steps as the game advances, but for the first time, do a comprehensive overview of the action:

1. **Restate what the participant said** – *"The Clean Tech team has proposed improving energy efficiency in buildings and industry."*

2. **Before moving the slider, ask participants to mentally simulate the impact** – *"How much of a difference do you think this will make? Would temperature increase drop to 3 degrees? 2? Think of a number in your head."*

   Encourage participants to call out their predictions. This is the time when you are helping people surface their assumptions about how the system works.

3. **Input the action into En-ROADS and explain where it fits** – *"This moves the slider called 'Buildings and Industry Energy Efficiency' which you can see here <point>. Let's assume the whole world takes this action starting next year and continuing through the century. This would also include improving the efficiency of commercial and industrial buildings and motors and…."* <Possibly open the "Advanced" pane of

   the slider to show what is being changed more specifically.> *"Efficiency was improving at 1.2% per year. Now we increase it from Status Quo to Increased, for example, to about 2% per year. That means all new capital for buildings & industry entering the economy will improve their energy efficiency by 2% every year into the future."*
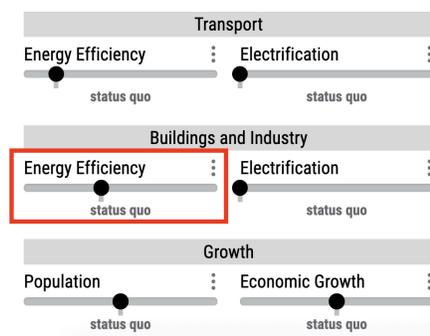
   > Note: Each action should include a single leap in the slider descriptor e.g. from "status quo" to "increased" OR "status quo" to "discouraged". This moderates the amount of change for each proposed action. For more condensed versions, you can decide to move the slider farther.

   Find detailed explanations of slider and model dynamics in the complete En-ROADS User Guide found at: https://docs.climateinteractive.org/projects/en-roads

4. **Show the graph that shows the most direct impact in question and replay the action** – In this case, pull up the "Energy Intensity of GDP" graph under "Population & GDP." Restate the base assumption. *"See the blue line? We've assumed that energy efficiency is going to keep improving on its own."*

"Watch the blue line as I replay the action, turning on and off the proposed action in the model. The blue line departs from the black line as the overall energy intensity of the economy improves even faster."

Move it back and forth 2-3 times using the Undo and Redo buttons or the Replay Last Change button on the top toolbar of En-ROADS.
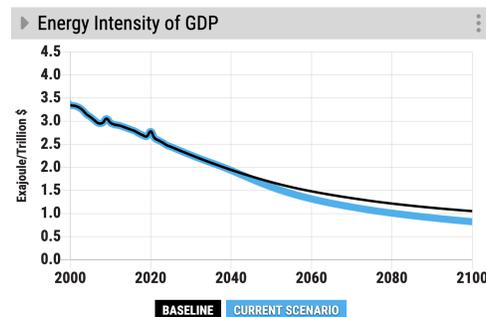
5. **Direct participants' eyes to the graphs that show more distant impacts** – In this case, you could go back to the default and show the areas for coal and natural gas shifting down (left graph) and then the impact on greenhouse gas emissions (right graph).
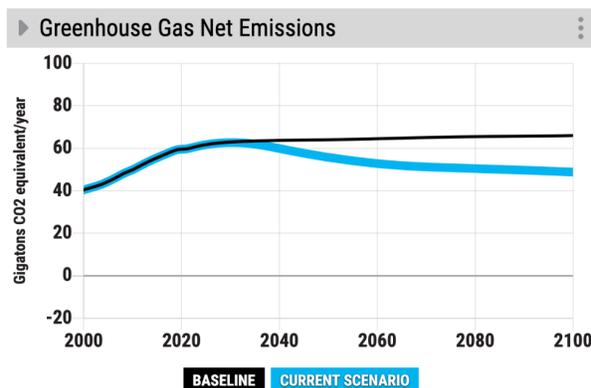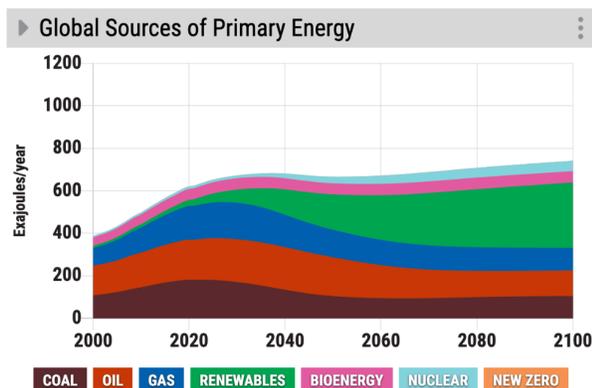
6. Again, replay the action several times. *"The world is more and more efficient, so energy demand goes down relative to what it would have been otherwise, so we burn fewer fossil fuels and emissions go down, so temperature change decreases."*

7. **Explain model behavior** – Explain briefly why the action has the result it does in the model. When possible, cite reasons involving the structure of the system; for example, the long delays in energy transition, competition between energy sources, the reinforcing "learning" feedback loop and so on, as described in the En-ROADS User Guide: https://docs.climateinteractive.org/projects/en-roads.

8. **Summarize** – *"If the whole buildings & industry sector improved its energy efficiency every year, then we'd burn less coal and gas, reducing emissions and temperature."* Then ask, *"Did it solve the whole problem?"* (No!) *"Did it help?"* (Yes!) *"This action is not a silver bullet. It could be part of a suite of actions that, together, could help meet climate goals."*

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You shouldn't go through all these steps with each proposal for the sake of time. After the first proposal, move on to the next group and keep the proposals moving along. You will add each proposal to the same En-ROADS scenario, but you can also choose to open another tab with En-ROADS to show the unique impact that an action has on the Baseline Scenario with no other sliders touched.

Discuss results from Round 1 proposals (if there is time):

After each group has had a turn, summarize where the plan that has been proposed gets us and take a little time for reflection on the results.

Optionally, show 1–2 graphs or maps under Graphs > Impacts to demonstrate that the action so far has already created a healthier world. For example, show the "Air Pollution from Energy" graph to highlight how cutting fossil fuels immediately saves lives. If viewing a map (such as "Extreme Heat Days"), toggle between the Baseline and Current Scenario to visualize how these actions are already lowering risks for vulnerable populations. Encourage participants to use these health impacts to strengthen their arguments and strategies for the next round.

En-ROADS Model Insights & Dynamics

Along the way, you will likely mention several or many of the top insights about the dynamics of the energy-land-agricultural-economic-climate system in order to answer questions about why the model is behaving as it does. It is important that you have reviewed the [Mastering En-ROADS training](#) and the [En-ROADS User Guide](#) in order to understand the En-ROADS model dynamics before running a game.

As the game advances, the dynamics of the multiple sliders interacting in the model may become more difficult to predict or explain. You may run into unexpected twists and combinations of policies that you aren't familiar with because of the ability to propose actions and take them away. Since En-ROADS is a nonlinear model that incorporates the interactions between many sliders, policies will have less impact if other policies impacting the same part of the system have already been put in place. It's okay if you can't predict what the result of an action will be, and don't feel like you need to have an explanation for everything. In fact, it is better to be honest and say that you don't know an answer and will look into it. The [En-ROADS User Guide](#) and the [Support page](#) will be your two best resources for finding answers about model dynamics, or you may contact our team if you cannot find an answer.

6. Round 2 Team Meetings & Negotiations

Open the Round 2 Team Meeting & Negotiations period, giving teams time to consider additional actions or reconsider already proposed actions in light of the results so far. With the floor now open for negotiations, encourage groups to reach out to other groups to discover their positions and lobby them to change their strategies if necessary.

> *"Now that we've established our first round of actions, we have a second period of team discussions. This time, I encourage negotiations between groups. You may go to other groups to learn about their strategies and lobby them to change their strategy as necessary. Take a few minutes to align within your groups about how to approach this negotiations round. We suggest keeping a couple representatives at your table and sending the rest to talk to other groups. You have 15 minutes for Team Meetings & Negotiations, starting now."*

If running the event online, see the Appendix for more tips on managing online breakout rooms and navigating negotiations using an online platform.

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7. Round 2 Plenary Presentations and Additional Rounds of Play

Enter the final rounds of plenary presentations where groups once again propose actions that are tested in En-ROADS. Continue allowing the teams to take turns with proposals until the group feels that their summit goal has been met or time is up. If you want to speed up the game, you may enable teams to propose up to two actions per turn after Round 1.

Available Variation: You may decide to make access to the En-ROADS simulator available to participants after Round 1, so people can use the simulator in their discussions to come up with proposals. It is better to restrict access to the model in the first round as the learning experience is enhanced when leaving the results of the actions a surprise.

As you continue through the rounds of play, remind everyone of the game's top insights about climate strategy:

- **There is no one solution that can address climate change as many people may say or hope**. Many actions in many sectors are required. Some actions may be much lower leverage than people think, while others like carbon pricing and energy efficiency might be higher leverage than people expect.
- **Climate solutions should consider equity ramifications and co-benefits before being enacted.** Climate change impacts affect those already most vulnerable, so

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climate action should aim to support these populations and incorporate their best interests in transition planning.

- **We can do it.** Avoiding the worst-case future is still possible. If participants express frustration that the game is hard to "win," remind them that En-ROADS is grounded in the best available science, so this is representative of how enormous the challenge is that we really face. You can discuss this more in the debrief.

If your group's scenario does not meet the goal of less than 2°C rise:

You could emphasize the consequences and show 1-2 impacts graphs or maps (under Graphs > Impacts) to underscore what is at stake. Then step back to allow the participants to quickly propose ideas for better results outside of their roles.

Note that it can be difficult to lower future temperature from, say, 2.4°C down below 2°C with what participants think are realistic proposals. This is a feature of the world and the limited time we have remaining to take serious actions, not a flaw of your facilitation, the game, or the model – since over 1°C of temperature rise has already occurred.

You may need to direct the group toward graphs that reveal what is pushing temperature up. The two best candidates are:

- **Greenhouse Gas Net Emissions by Gas – Area** – This graph shows greenhouse gas emissions by type and allows you to see which greenhouse gases are continuing to drive emissions up.
- **Final Energy Consumption by Source–Area** – This graph shows the amount of energy consumed by each type of energy source, allowing you to pinpoint which energy sources are still being predominantly used in your scenario.
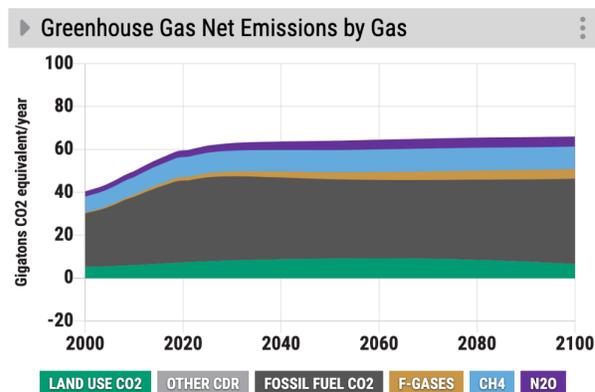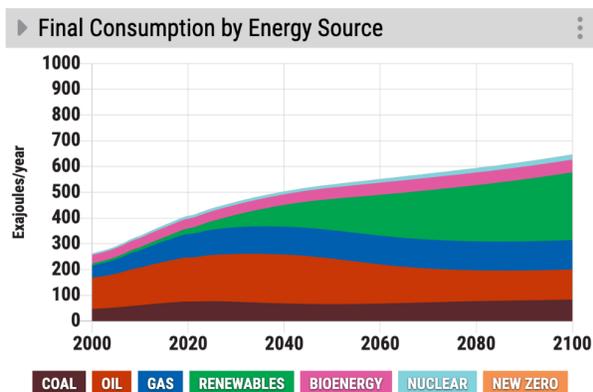
8. Closing the Summit

Eventually the group will either create a scenario in En-ROADS that could limit warming to 2°C or 1.5°C, or the group will run out of time. When the participants are successful, congratulate and lead them in a huge applause for their accomplishment, acknowledging the possibility of this future. If they are not successful, state the progress they made and that "we still have crucial work to do." Recap the major inputs and outputs of the group's scenario. Conclude by showing 1-2 impact graphs or maps, demonstrating that every fraction of a degree they avoided translates to real benefits in the world.

For example:

> "Delegates. Our proposals today successfully limit warming to 1.7°C. We will get there by investing in energy efficiency, reducing deforestation, etc. <Summarize the elements of the plan.> According to the En-ROADS simulator, this future is technically possible. Now we must figure out how to make it a reality. We have taken a huge step forward today by working together across key stakeholder groups to create a vision for a future that avoids the worst of climate change. Yes, the journey will be tough, but now we are equipped with a plan. We can and we must do it!"

9. Debriefing Discussion

Once the roleplaying period ends, it is important that you take participants through a discussion to reflect on the experience and draw out insights from it before they leave the event. Even if it is short, the debrief will help ensure participants take the most away from the experience.

Begin Debrief and Moment of Silence

Remove your tie and/or blazer and scarf. Ask your participants to step out of their roles by rearranging their chairs, or removing their virtual backgrounds if running an online event.

> "Hands up if you thought that was an intense experience. <wait for hands> I just asked you to play a role you've never played, one that is perhaps quite different from your actual role in the world."

Invite your participants to take one minute of silence to reflect on future possibilities. You could say:

> "When we talk about future scenarios for our climate, we spend most of the time focused on how bad the worst-case future looks or how difficult change will be.

Instead, I'd like for us to spend just one minute silently considering the possibility that we could create this better future."

Start a timer, stop talking, and don't speak for a full 60 seconds. This is a very important moment of the workshop and initiates a period of increasing hope and possibility. Participants may be invisibly prepping themselves to find resolve, a vision of a better future, and commitment to do something about it. Treat the moment with respect.

If you want, you can follow up with a second prompt:

"Think of something you would love about being part of this sort of future."

Ask participants to turn to the person next to them and share their answer. Perhaps ask if a few want to share what they said with the whole group. If running the event online, ask people to share their answers in the chat box or breakout participants into smaller groups of 3 or 4 for a few minutes if you have too large a group where speaking up may be difficult.

Explore Feelings

Ask your participants to explore how they're feeling. If in-person, ask them to stand and go to a part of the room that best describes their feelings at this point. Designate different parts of the room for anger, sadness, hope, mixed feelings. If online, ask them to write into the chat box. After participants sort themselves accordingly, ask for comments on why they chose the place they are in.

One reason that we ask people to talk about their feelings is that people often have strong experiences and develop strong emotions in the game. Maybe they didn't know climate change demands so much change or maybe the gameplay got particularly intense. Because this is a group activity, it helps for people to name these emotions in the group and process some of them before they leave the room.

Building or Rebuilding Hope

Now help participants recognize that although the challenge is big, there is much that can be done, and we are in it together. Three approaches you could take to build hope:

Your Own Hopefulness – Explain why you are personally hopeful. Some approaches include:

- **Use a personal story** – maybe you have a story about overcoming great odds that you or someone you know was a part of. Perhaps a time when you thought the path ahead looked very hard and you were able to overcome great odds to succeed.

- **Humans have addressed "impossibility" before** – We can look to human history for evidence of success and adopt the approach of addressing climate change. (Read this New York Times Op-Ed by Climate Interactive's Co-Director Drew Jones for more on this).

- **Hope is a choice, not an assessment** – You could say:

   "Hope is a choice, not hinged upon an assessment of the likelihood of future success. Being hopeful is about choosing to prevent this huge problem every day because it is the right thing to do, not because you know that we are going to win."

Highlight good news trends – You can cite evidence or tell stories of significant recent progress. Examples include:

- Falling cost of wind and solar coupled with peaking emissions of carbon dioxide from coal.
- Increasing public awareness of climate change and support for climate action from polling.
- More companies, cities, and states pledging to go 100% renewable or take other climate actions.
- The increasing number of young people demonstrating for more ambitious action against climate change.

Emphasize co-benefits to climate action (multisolving) – Emphasize the many co-benefits beyond the direct impacts to the climate, which may make successful adoption of climate solutions all the more possible. Common examples include:

- Shutting down a coal power plant also improves local air quality which reduces health impacts like asthma that come from local air pollution.

- The clean tech industries, including renewables and energy efficiency, can be a major source of new (and often more rewarding and healthier) jobs.

- More examples of co-benefits can be found throughout the En-ROADS User Guide.

Their Hope – Often participants will have their own stories that inspire hope and possibility. Give people space to share their experience.

- Give them a few minutes to write down why they are hopeful.
- Have them reflect in pairs.
- Ask them to share with the group.

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The Call to Action (Don't Skip This!)

The purpose of this workshop is to motivate effective action in the real world, so now is the time to make it happen. Helping people see what they can do to channel their emotions (both positive and negative) into constructive ends. Approaches vary from very simple to quite elaborate. At the simplest level, just say:

> *"Share with the person next to you, or write in the chat box, one thing that you feel called to do after this experience."*

Give people time to talk and process. There is a broad range of possible actions, from changing one's personal impact on climate change, to participating in collective action with others, to learning more and talking with others. Sometimes this might just mean going home and talking about the event with those they live with. Then have a few people share their plans with the group.

From here you can wrap up the exercise and thank everyone for their participation and engagement—or include some of the additional activities below.

Additional Discussion (optional)

Depending on the time available and your goals for the game, you could facilitate a discussion by asking some of these questions:

- What surprised you about the results you achieved and the difficulty (or ease/possibility) of achieving them?
- To what extent did your proposals taken together produce the result you expected, or hoped for? Why or why not?
- How was energy consumption, greenhouse gas emissions or other key parameters, affected by your proposals? Can you imagine humans living in that kind of world?
- (If <2℃ goal was not ultimately reached) What might you have proposed that could have helped us to achieve our goal? You may use the model for a couple of rounds of speculation.
- If time allows, run sensitivity tests in En-ROADS, in which all sliders are reset, and individual sliders are adjusted one by one to see their individual impact. This exercise is helpful for learning about the leverage of different individual actions, which can be difficult to see amongst the many other sliders that are changed during the game.
- What impact do you envision the result you achieved will have on the interests you were representing in the roleplay?

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- To what extent is the result you achieved feasible? From an economic standpoint? A political standpoint? A social, technical, or cultural standpoint?

Treaty Signing (optional)

If you have time, you may choose to hold a mock treaty signing to honor the group's commitments from the experience. Delegates may file in a line to sign the treaty to give it a feeling of importance. If running the event online, you could circulate a digital copy of the treaty for your participants to sign.

Group Photo

Gather everyone around the projector screen with the final scenario in En-ROADS to take a group photo to share. Have someone in the front hold the signed treaty if there is one. We also encourage you (or your co-facilitators) to take photos during the event.

If possible, quickly distribute the group photo (or photos) to participants for them to share on social media, tag us at @Climateinteractive, #EnROADS, or share them with us via email at multimedia@climateinteractive.org.

Please remember to register your event and do not hesitate to reach out to us and share your experience and feedback: support.climateinteractive.org

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Appendix

Advanced Facilitation Tips

- *Bring the drama!* We encourage the facilitator role-playing as the UN Secretary General to do their best to fully commit to this role. Do what's needed to immerse participants from the beginning – this will make for a more engaging and rewarding experience.
- The format of the Climate Action Simulation provides many opportunities to be creative and improvise. Have fun with it and encourage improvisation from both facilitators and participants if you are comfortable with it. A few examples that have worked well:
    - o "Leaking" the link to the En-ROADS simulator halfway through plenary rounds.
    - o Hosts taking on new roles partway through – such as the "UN Security Detail" to mute participants who are protesting other groups' actions.
    - o Encouraging good-spirited banter, in the chat box or in person (be sure to keep things friendly and fun!)
    - o Bringing in other topics relevant to climate solutions – such as geo-engineering or current events – to spark conversations and "stir the pot."

Additional Guidance for Running the Simulation Online

- When you send participants into their breakout rooms, set a clear time frame: *"We will be meeting back in the main room at 1:15pm."*
- While testing actions in the simulator, be sure to keep your participants' attention by using verbal cues for where participants should be directing their eyes – e.g. "Look at the red line for oil. It is going up when you move this slider because…", using the "Replay" button frequently to maintain visual interest and keep participants engaged, and enlarging your cursor so participants can see clearly what you are pointing to on your screen.
- Encourage use of the chat feature to ask participants for their input on simulation experiments, their questions, their emotional reactions, and so on. This is especially important for large groups in order to include more participants in the discussion.

Tips for using breakout rooms with the Zoom platform specifically:

- Encourage participants to use the "Ask for Help" button if they have a question while in their breakout rooms.
- Use the Broadcast Message feature to send important messages to participants while they are meeting with their groups.
- During the second round of negotiations (and forward), we encourage you to allow for teams to cross-negotiate with other stakeholder groups. To do this, participants can leave their breakout rooms to return to the "Main Room" where they can ask the host to manually move them into another breakout room.

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- o **Pro-Tip:** While in the main room, after the host manually moves a participant from one breakout group to another (if a Clean Tech rep wants to speak to someone in Conventional Energy), be aware the participant will **not be prompted by Zoom** to join the new room. They will need to click the "Breakout Rooms" button in the corner of the screen to prompt their entrance to the new room.
- Send a facilitator or host to breakout rooms to check in and see if anyone needs help or has any questions. However, we recommend leaving one leader of the game in the main room at all times.

Gameplay Variations

The approach described in this Facilitator's Guide fits many of the conditions that a facilitator will encounter, but we strongly encourage you to adapt it to match other settings. Some common variations are described below.

Larger Groups (Over 60 people)

Generally when working with large groups we tend to use the [En-ROADS Climate Workshop](#) over the game format because of the challenges of facilitating large groups. This is especially true for online settings. However, here are some suggestions for how to adjust the game for larger groups:

1. **Consider using less time** – It is difficult to manage enough depth in the team meetings with lots of people, so one approach is to limit the amount of discussion within and between groups. This could cut the whole event to 1 hour.

2. **Abandon group breakouts** – This is the most important modification. Without group breakouts, teams do not need to achieve consensus on proposals beforehand. Ask participants to turn to one or two others and talk about what action they want to propose in En-ROADS. After 5-10 minutes, ask someone to call out their preferred action. Say, "Raise your hand if you had the same proposal." Ask for someone who had a different proposal. Ask for another raise of hands of people who had that different proposal. Choose the one that got more votes. Move to the next group and continue getting actions that way. To limit the amount of time it takes even further, you can just call on a person with each group to propose an action and then implement it and discuss the result.

3. **Instigate the negotiations** – After six actions (the first round of actions from each group), ask the teams to send several delegates to visit the other groups to lobby them on what actions they should be proposing. Welcome the chaos that ensues for five minutes and then end the negotiation period by asking everyone to return to

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their original teams. To further condense the amount of time, you might leave out this part entirely.

4. **Take charge** – You will need to facilitate the crowd quite assertively. This will mean interrupting people and calling the group back to attention.

Younger Participants (under 18)

Here are some suggestions for how to adjust the game for younger participants:

1. **Just do it** – The *Climate Action Simulation* works well with this age group, because young people just turn on and engage with their roles and with each other.

2. **Bring the drama** – Start the session casual – no scarf, no tie, no jacket. Act warm and friendly. After the setup, return fully in character as a UN leader. You can do this with a simple costume and UN gravitas. One time, a young delegate asked Climate Interactive's Co-Director Drew Jones when he played the UN Secretary-General, "Are you a different guy?"

3. **Minimize the introduction** – Ten minutes maximum. Five is better. Really. No more than a two-minute introduction to climate science and the UN. They won't be listening until the game starts anyway. Hand out the briefing sheets beforehand to give students some time to identify with their roles. You or your co-facilitators could also go around and coach the participants on what their roles are, rather than have them read the briefing statements.

4. **Teach when they are confused** – Lecture on climate science, the UN, and energy solutions as needed, during game play. Explain only on an as-needed basis.

5. **Use less time** – If you have less than an hour, follow the tips above for big groups.

6. **Or spread out the event across multiple days** – If you have the time to go more in depth with one group of students, you can choose to break up the exercise into multiple parts and days.

7. **End with hope** – Ask participants to take off their roles and in your closing speech, as yourself, not the Secretary-General, talk about why we should be hopeful.

Short Amount of Time

Here are some suggestions for how to adjust the game when you have less time:

1. **Abandon the handouts and PowerPoint slides** – Just display the En-ROADS interface.

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2. **Use the condensed briefing sheets** – 1-page versions are available, and you can also create your own.

3. **Adjust the groups and introduce them verbally** – Three teams, four, six, it doesn't matter as long as you have somewhat conflicting views. When in doubt, include the Conventional Energy, the Climate Justice Hawks, and Land/Ag/Forests groups.

4. **Just ask any person in a team to propose an action** – No time for group discussion nor consensus-building.

5. **Be sure to land the main insights (as you won't have time for much more)** – There's no silver bullet. It takes many seeds to plant a garden, i.e. important solutions across many sectors. It's possible.

6. **Remind them that a deeper dive in the model is needed.**

Splitting into 8 Teams

If you have a larger group or more time to play, you may choose to play with a game variation that splits the World Governments team into three groups so they can better represent the complicated dynamics of these different types of nations. Thus, instead of the typical six groups you would play with the following eight teams. We have briefing sheets available for this variation:

- Conventional Energy
- Clean Tech
- Industry & Commerce
- Land, Agriculture & Forestry
- Developed Nations Governments
- Rapidly Emerging Nations Governments
- Developing Nations Governments
- Climate Justice Hawks

When splitting the participants into eight teams, showing global wealth disparity is even more apparent. Here, the richer delegations entail Conventional Energy, Industry & Commerce, and the Developed Nations Governments. Set up their tables with a tablecloth, flowers, pens, notepads, and snacks. As props, you might offer candy or fake money to the Conventional Energy delegation and sign-making supplies to the Climate Justice Hawks. For the moderately wealthy delegations, set up chairs and tables, but no snacks. Then, have the Developing Nations Governments and the Climate Justice Hawks negotiating group sit on the floor, perhaps with one chair for the group's wealthy leader.

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A possible room layout for an in-person event is shown in Figure 11. A possible sequence for groups proposing their policies or actions could be: Developed Nations, Ag & Land, Emerging Nations, Clean Tech, Industry & Commerce, Climate Hawks, Conventional Energy, and Developing Nations. This reflects a useful sequence of alternation of possible steps in the game.
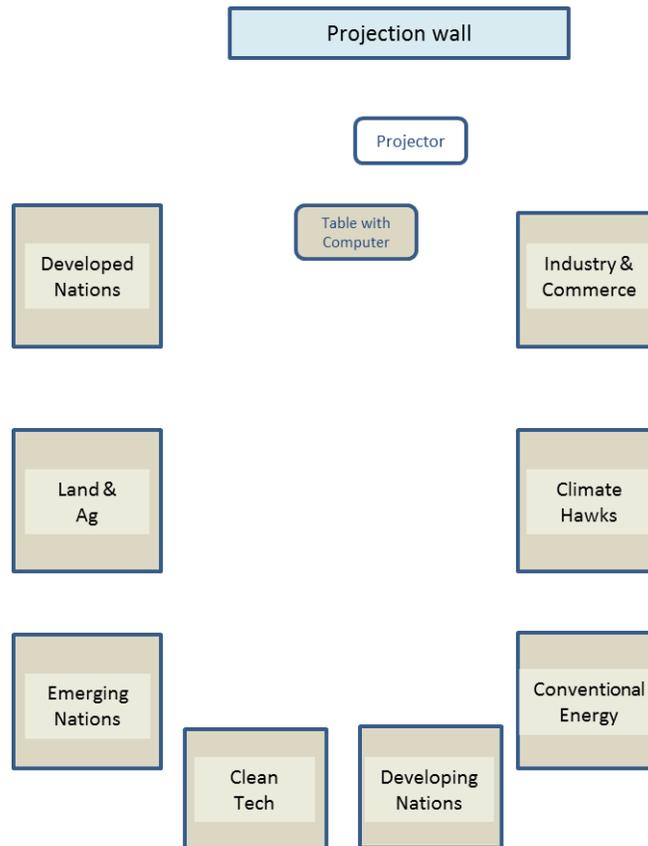
Also consider adding the optional Health Advocates and/or Banking & Finance groups. Feel free to write other briefing statements to add other groups of interest as well. If you change the groups, one consideration is to be aware of the balance of groups actively supporting climate action and those that might hold it back. Roleplay varies from group to group, but it will generally be more engaging with some tensions within and between groups. A two-to-one ratio of groups strongly pushing for reducing emissions versus groups holding back progress has worked well.

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Following a World Climate Simulation

Facilitators may play the *Climate Action Simulation* (based on En-ROADS) directly after the *World Climate Simulation* (based on C-ROADS). Moving into En-ROADS from C-ROADS is a way of enhancing the audience's knowledge of how to achieve the enormity of the Paris climate goals through specific policies and solutions:

Group Assignments

To reduce confusion, participants can stay in their roles from the *World Climate Simulation*. Here, the delegates of the UN Climate Summit represent their countries and blocs, which in the 6-Region version would include:

- US
- EU
- Other Developed Countries
- China
- India
- Other Developing Countries

There are also lobbying groups (optional), including:

- Fossil Fuel Lobbyists
- Climate Activists
- US Cities and States

How to Transition Between Games

We have identified two options of how to continue into the *Climate Action Simulation* following the *World Climate Simulation*.

1. Directly after the delegates in the *World Climate Simulation* have reached the goal of limiting global warming to below 2 °C.
   - Pro: Delegates are still in their role.
   - Con: *World Climate Simulation* has already taken time and a lot of energy. It might be challenging to keep up the energy level with the audience.

2. With a break after playing the full *World Climate Simulation* game with a debriefing discussion. The second game could occur on the same day, next day, or the following week in a class.
   - Pro: Audience feels fresh and has had time to reflect on their findings from the *World Climate Simulation*.
   - Con: Participants will need to get back into their roles after taking a break.

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Game Sequence

1. Say, in your role as the UN Secretary-General:

   "Dear Delegates, I congratulate you on having reached the Paris climate goal with your pledges. You have realized that we need to act now, act with great ambition, and act all together. Now, the challenge for our world is to identify the right policies and solutions with which we will achieve your pledges. We will be using another climate simulation model, En-ROADS, to support our second round of negotiations."

2. Introduction to En-ROADS simulator after handing out the guide to the control panel.

3. Conduct a simplified opening presentation to minimize duplication from your prior speech for the *World Climate Simulation*.

4. Run the Negotiations and Plenary Presentations Rounds as you would, except with the *World Climate Simulation* teams.

   - Sequence of presentations: US, EU, Other Developed, China, India, Other Developing, Fossil Fuel Lobbyists, Climate Activists, US Cities & States. The rest as described above.

5. If the *World Climate Simulation* didn't get its own debrief, conduct a debriefing discussion that encompasses both experiences.