



# Facilitator's Guide

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## Welcome

Congratulations on taking on the important work of engaging participants in working towards a stable climate through the World Climate Exercise. World Climate is a climate negotiation role-playing exercise that explores the science and geopolitics of international agreements on climate change, and is grounded by a computer simulation of the dynamics of the climate system, C-ROADS, that has influenced the actual global negotiations. World Climate has been played by more than 30,000 people, from middle-school students to UN officials in dozens of countries worldwide. By facilitating World Climate for a group, you have an opportunity to help participants gain insights into the causes of climate change and to see the possibility of success in addressing the climate challenge.

As you read this guide, recognize that you can alter this exercise to fit many purposes and schedules, or use it exactly as prescribed below.

You also have other resources available, including:

- A facilitator's video,
- Videos of experts leading the exercise,
- A reference guide and FAQs for the computer simulation that frames the exercise.

These resources and more can be found on the resources for World Climate facilitator's page: <https://www.climateinteractive.org/tools/world-climate/instructor-resources/>

If you run a World Climate Exercise, please let us know by registering it: <https://www.climateinteractive.org/programs/world-climate/register-event/> . This will help us in conducting research on the impact as well as track the spread of our tools.

Thanks!

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This facilitator guide provides detailed suggestions about how to lead a World Climate event and deliver the key insights of the experience to participants.

## A World Climate Exercise in Brief

Tell participants that you are the UN Secretary General or the UN Framework Convention on Climate Change (UNFCCC) Executive Secretary and they are delegates representing nations from around the world tasked with limiting global warming to no more than two degrees Celsius above pre-industrial global temperature. Split them into groups and describe their country groups briefly. Tell the 'Other Developing Countries' to sit on the floor. Display the C-ROADS World Climate simulator and guide the delegates through the basics of climate science. Show each group their emissions line and the resulting future temperature.

Tell the participants they need to pick a year to cap carbon dioxide (CO<sub>2</sub>) emissions growth, a year to start reducing emissions, and how fast they will reduce. Hear proposal speeches from each group. Ask them what temperature would result from their proposed actions. Run the scenario with C-ROADS World Climate. Discuss the results.

Let the groups negotiate and propose new actions. Run the simulation with each new pledge.

When a scenario is created in C-ROADS World Climate where CO<sub>2</sub> emissions are roughly flat point to the rising temperature in the atmosphere and accentuate how counterintuitive this is. Introduce the bathtub view of carbon dioxide in the atmosphere (see Appendix B) and explain that the temperature only decreases, if the emissions are less than removals.

Allow groups to have 2 or 3 rounds of negotiations to achieve the objective of staying well below two degrees Celsius warming above preindustrial levels.

After the negotiations, invite everyone out of their roles, and debrief. If they didn't keep temperature rise below 2 degrees take time to show what it would take. Then hit the following topics: 1) their feelings, 2) the real world of UN negotiations, 3) insights about the Carbon Bathtub, speed and scale of action, the tragedy of the commons, and social justice, 4) hope and 5) their possible role in this challenge.

## Purposes

As you facilitate World Climate, keep three purposes in mind:

1. **Insights and Understanding.** World Climate offers an opportunity for participants to gain insights into the carbon and climate system, as well as the social and international geo-political dynamics of the climate challenge. Specific insights are listed later in this guide.
2. **Learning and Leadership.** Provide a non-dogmatic experience for participants to think and explore, for themselves, about their possible role in addressing climate change and experiment in a role-playing environment how to advocate for positive action.
3. **Diffusion.** Give participants an opportunity to take what they have learned and translate it into real-world action, including leading World Climate with another audience.

## Preparation and setup

### Time Required

We recommend three hours for the entire session, two hours for the role-playing exercise and one hour for the debrief. For class settings with limited time, you can stretch the exercise over several days. A 30-60 minute abbreviated version with limited role-playing and no negotiating is also possible (even in an online webinar setting), though it is a less impactful learning experience.

We have also adapted the game into a less interactive presentation format that you could adopt when you have a much larger group (e.g., [for 400 people in Sweden](#)) or a much shorter amount of time (e.g., [in 17 minutes for a TEDx talk](#)).

### Dividing Participants

There are two primary ways to divide up participants to play World Climate:

**Six Regions** – This version allows for larger groups (more than 18 people) and enables greater participation from all individuals. Participants are divided into negotiating teams representing China, United States, European Union, India, Other Developed countries, and Other Developing Countries (see Table 1). Using the [C-ROADS-World Climate](#) software, pledges from these 6 teams can be entered and analyzed throughout the exercise.

**Three Regions** – This version is good for small groups (6-18 people) or for exercises with less time. Participants are divided into Developed countries, Developing A countries (China, India, South Africa, Mexico, Brazil, Indonesia) and Developing B countries (Bangladesh, Pakistan, southeast Asia, the poorest nations of Central and

South America, most African nations, the island nations of the Pacific, Indian Ocean, and Caribbean, and much of the Middle East) (see Table 2). Also for this version you use the computer simulator C-ROADS World Climate to enter and analyze the decisions teams make.

*Table 1 – Six-Region Groupings for World Climate*

| Six Regions               | MEF Categories                                   | MEF Regions  | Individual Nations  |
|---------------------------|--|--|---|
| United States (US)        | Developed Nations in Major Economies Forum (MEF) | United States (US)   | United States (US)  |
| European Union (EU)       |  | European Union (EU) 27 (EU27) (plus Iceland, Norway and Switzerland) | Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden and the United Kingdom, Iceland, Norway and Switzerland. (includes former Czechoslovakia) |
| Other Developed Countries |  | Russia   | Russia (includes fraction of former USSR)   |
|                           |  | Canada   | Canada (includes rest of other North America)   |
|                           |  | Japan  | Japan   |
|                           |  | Australia  | Australia   |
|                           |  | South Korea  | South Korea   |
|                           | Developed Non MEF                                | New Zealand  | New Zealand   |
|                           |  | Other Eastern Europe   | Albania, Bosnia & Herzegovinia, Croatia, Macedonia, Slovenia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine, Uzbekistan (includes former Yugoslavia and fraction of former USSR)   |
| China                     | Developing Nations in MEF                        | China  | China   |
| India                     |  | India  | India   |
| Other                     |  | Indonesia  | Indonesia   |

|                      |                    |                             |   |
|----------------------|--------------------|-----------------------------|---|
| Developing Countries |                    | Brazil                      | Brazil  |
|                      |                    | South Africa                | South Africa  |
|                      |                    | Mexico                      | Mexico  |
|                      | Developing Non MEF | Other Large Developing Asia | Philippines, Thailand, Taiwan, Hong Kong, Malaysia, Pakistan, Singapore   |
|                      |                    | Middle East                 | Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, Yemen, West Bank and Gaza (Occupied Territory)  |
|                      |                    | Other Latin America         | Argentina, Chile, Colombia, Peru, Uruguay, Venezuela, Bolivia, Costa Rica, Cuba, Dominican Rep., Ecuador, El Salvador, Guatemala, Haïti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Puerto Rico, Trinidad and Tobago. And Caribbean Islands  |
|                      |                    | Other Africa                | Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoro Islands, Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea and Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, South Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zaire, Zambia, Zimbabwe, Mayotte, Saint Helena, West Sahara |
|                      |                    | Other Small Asia            | Bangladesh, Burma, Nepal, Sri Lanka, Afghanistan, Cambodia, Laos, Mongolia, N. Korea, Vietnam, 23 Small East Asia nations   |

*Table 2 – Three-Region Grouping for World Climate*

|              |                           |
|--------------|---------------------------|
| <b>Three</b> | <b>Individual Nations</b> |
|--------------|---------------------------|

| Regions                |  |
|------------------------|--|
| Developed Countries    | United States (US)   |
|                        | Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden and the United Kingdom, Norway and Switzerland. (includes former Czechoslovakia) |
|                        | Russia, Albania, Bosnia & Herzegovina, Croatia, Macedonia, Slovenia, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine, Uzbekistan (includes former Yugoslavia and USSR)   |
|                        | Canada (includes rest of other North America)  |
|                        | Australia  |
|                        | New Zealand  |
|                        | Japan  |
|                        | South Korea  |
| Developing A Countries | China  |
|                        | India  |
|                        | Indonesia, Philippines, Thailand, Taiwan, Hong Kong, Malaysia, Pakistan, Singapore   |
|                        | Brazil   |
|                        | South Africa   |
|                        | Mexico   |
| Developing B Countries | Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, Yemen, West Bank and Gaza (Occupied Territory)   |
|                        | Argentina, Chile, Colombia, Peru, Uruguay, Venezuela, Bolivia, Costa Rica, Cuba, Dominican Rep., Ecuador, El Salvador, Guatemala, Haïti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Puerto Rico, Trinidad and Tobago. and Caribbean Islands   |
|                        | Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoro Islands, Congo, Côte d'Ivoire,   |

|  |  |
|--|--|
|  | Djibouti, Equatorial Guinea, Eritrea and Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, South Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zaire, Zambia, Zimbabwe, Mayotte, Saint Helena, West Sahara |
|  | Bangladesh, Burma, Nepal, Sri Lanka, Afghanistan, Cambodia, Laos, Mongolia, N. Korea, Vietnam, 23 Small East Asia nations  |

## Facilitation Roles

World Climate is most engaging and impactful when facilitators and participants actively play a role. As the primary (or sole) facilitator, you will be playing the role of the UN Secretary General or UN Framework Convention on Climate Change (UNFCCC) Executive Secretary. If possible, enlist co-facilitators to assist you to lighten your load and give them an opportunity to learn how to facilitate. You may also find it helpful to co-facilitate with someone who has knowledge and skills that complement your own (e.g., a scientist or science educator may want to co-facilitate with someone who is more familiar with policy, economics, or business).

Examples of additional facilitation roles are:

1. UN Environment Programme (UNEP) technical lead – You could ask an assistant to run the computer and possibly explain model output and climate science.
2. Ombudsman – Invite a colleague to work with you to help broker a deal.
3. Technical advisors – Colleagues who have played the game before can help the teams figure out the rules and advise them on how to play well.
4. Reflectors – An assistant could write down interesting quotes that they overhear. These quotes can be useful in the debrief.

## Facilitator Preparation

In addition to reviewing this guide, explore the guidance videos and videos from other World Climate exercises: <https://www.climateinteractive.org/tools/world-climate/videos/>

Write out the agenda for your event and practice what you are going to say.

For further background in the systems thinking concepts behind World Climate, take the online course [“The Climate Leader.”](#)

## Familiarize yourself with climate science

It is important for you as a facilitator to have a basic knowledge about climate change, the science, causes, impacts and the politics of your region and globally. Besides the resources we provide on our website, there are numerous other resources on climate change on the internet that you can familiarize yourself with ahead of the World Climate Exercises. Familiarize yourself with the slides to use for the debrief session and use them to prepare a customized presentation for your participants

## Room Setup

The room should be set up with:

- Tables and chairs or areas on the floor for the teams. Each table or area should have:
  - A label with group's name (table tent),
  - Briefing Statements for the team (approximately one per team member),
  - 2-3 Proposal Forms.
- A computer with access to the C-ROADS World Climate simulator (downloaded to the local computer or running online) and PowerPoint slides, a projector, and a screen in the center of the front area.
- A white board (or big pieces of paper) with a large grid for participants to write their commitments that everyone can read from their seats (figure 1).
- A flip chart with pre-drawn diagrams (figure 2 & 3).
- A blue tarp near the area where the 'Other Developing Countries' will sit, which will be used to symbolize sea level rise.
- Somewhere out of sight, such as outside the room or in the back, store your more formal clothes or accessories for acting as the UN Secretary General or as UNFCCC Executive Secretary, *e.g.*, a tie, blazer, or scarf.

Though this is what we have found to work best for us after many events, you can always mix and match pieces to suit your needs.

## Proposal Summary

|                     | Emissions<br>Peak Year | Reductions<br>Begin Year | Annual<br>Reduction<br>Rate<br>(%/year) | Prevent<br>Deforestation<br>(0-100% = max<br>effort, zero<br>emissions) | Promote<br>Afforestation<br>(0-100% = max<br>effort, zero<br>emissions) | Contribution to,<br>or request from<br>Green Climate<br>Fund<br>(\$ Billion/yr) |
|---------------------|------------------------|--------------------------|---|---|---|---|
| United<br>States    |                        |                          |   |   |   |   |
| European<br>Union   |                        |                          |   |   |   |   |
| Other<br>Developed  |                        |                          |   |   |   |   |
| China               |                        |                          |   |   |   |   |
| India               |                        |                          |   |   |   |   |
| Other<br>Developing |                        |                          |   |   |   |   |
| <i>Example</i>      | <i>2075</i>            | <i>2085</i>              | <i>1.0%/year</i>                        | <i>80%</i>  | <i>10%</i>  | <i>\$10 B/yr</i>  |

FIGURE 1

[Signs of global wealth disparity](#). For the richer countries, set up their tables with a tablecloth, flowers, pens, notepads, and snacks. These details are to symbolize the relative wealth of the team who will sit here—the Developed World (or the US, EU, and other developed countries groups). For the moderately wealthy countries, set up chairs but no tables. Then, have the Other Developing negotiating 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.) If you are including auxiliary groups, you might offer candy or fake money to the fossil fuel lobby and sign-making supplies to the climate activists. While they are optional, props make the roles feel more authentic and make the game more engaging.



## Printing

### 6-Region Printing:

|   | Document  | # of copies                  | Instructions                             |
|---|---|------------------------------|--|
| 1 | World Climate Briefings, 6 documents (1 type per group) | # of attendees divided by 6* | Double-sided                             |
| 2 | WorldClimate-Table cards for 6r.pdf                     | 1                            | Single-sided on thick or cardstock paper |
| 3 | WorldClimate-Proposal Form.pdf                          | 12                           | Single sided                             |
| 4 | WorldClimate pre-survey.pdf                             | 1 per person                 | Double-sided                             |
| 5 | WorldClimate post-survey.pdf                            | 1 per person                 | Double-sided                             |

\*Adjust accordingly if adding additional roles (e.g. if including fossil fuel lobbyists, climate activists and/or press corps).

Updated documents are available for free on the Climate Interactive website:

<https://www.climateinteractive.org/programs/world-climate/instructor-resources/briefing-materials/>

## Other items to bring

- Formal clothes for roles
- Pale blue sheet or tarp
- UN flag or flags of countries
- Flowers, water pitcher, glasses, note pads, pencils, fruits or snacks of some type, and table cloth
- Paper or blackboards with pre-drawn diagrams

To draw on paper or blackboards, post on a wall, or project:

- Pledge input table** (figure 1, page 9). Draw large enough that everyone can see from their seats.
- Temperature futures graph** (figure 2). Graph of BAU to date for global temperature and several possible trajectories that might result from the collective proposals. Use this to poll the audience about what effect their proposals will have before running the computer simulation to see the results.

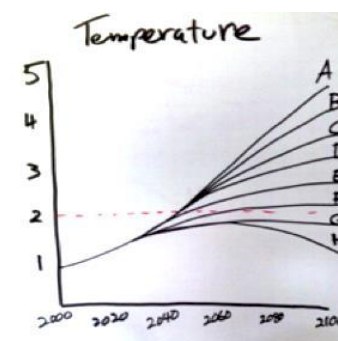
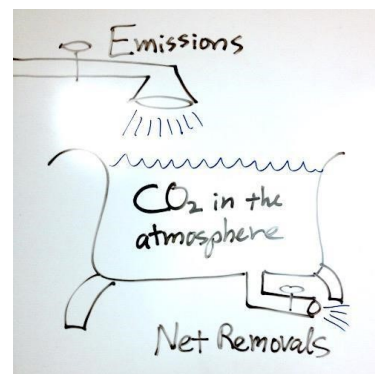


FIGURE 2

- C. **Bathtub drawing** (figure 3) to illustrate relationship between emissions, removals and the atmospheric CO<sub>2</sub> concentration. (see Appendix B). Note several features of the bathtub drawing: The amount of water flowing into the tub should far exceed the flow out of the tub. And the inclusion of the word “Net” in “Net Removals” is important.



**FIGURE 3**

### Inviting media

Where appropriate, we recommend inviting media, bloggers, or videographers to an event and/or releasing a press release about the event. You can also produce your own media by taking pictures, video, and writing about your experience (or have participants help out). For many, role-playing exercises like World Climate are a new approach to learning that offers an opportunity to connect people to a global issue that can seem abstract. Please share what media you get with Climate Interactive by emailing [info@climateinteractive.org](mailto:info@climateinteractive.org).

Past examples include:

- [Local paper in Germany](#)
- [In Science from the American Geophysical Union](#)

### C-ROADS World Climate Software

C-ROADS World Climate enables the pledges that groups propose to be tested in order to determine their impact on atmospheric CO<sub>2</sub> concentration, global temperature, ocean acidification, and sea level rise. C-ROADS World Climate was released in October 2016 and replaces C-Learn and C-ROADS (now called C-ROADS Pro) as the recommended version for use with World Climate. See Appendix A for instructions on how to access and setup C-ROADS World Climate.

|                             | <b>C-ROADS World Climate Features</b>   |
|-----------------------------|---|
| Number of regions possible? | 1, 3, or 6  |
| Runs online?                | Yes   |
| Download to desktop?        | Windows or Mac  |
| Customized pledge units     | No  |
| Languages                   | English, French, Spanish, German, and Turkish.  |
| URL                         | <a href="https://www.climateinteractive.org/tools/c-roads/">https://www.climateinteractive.org/tools/c-roads/</a> |

## Primary Facilitation Hurdles

After running World Climate hundreds of times for groups that vary from twelve-year-old science students to European climate officials to Nobel-winning scientists, we have found the primary facilitation challenges to be:

1. **Be open to emotional reactions, not just technical insights.** At its best, World Climate engages participants deeply both in analytical and quantitative thinking (e.g., negotiating, calculating, strategizing), and in empathetic and aspirational feeling (e.g., seeing others' perspective, facing difficult facts, cultivating hope). Providing an opportunity for participants to explore both analytic and affective responses to the experience will deepen their understanding of climate change.
2. **Retain hope and possibility.** The physics of the carbon and climate system combined with the difficulty of international decision-making can make the global task feel overwhelming. So, during the game, play the role of the optimistic UN leadership, encouraging the parties to work hard to craft a better agreement. Then, during the debrief, follow the guidance listed in this document to cultivate a sense of possibility in the group and share your own reasons to be hopeful.
3. **Facilitate, rather than lecture.** Share enough about the climate system, carbon cycle, international dynamics, the UN process, and other matters (note: you don't need to teach all these topics), but not too much detail. Lecture as little as possible. Set up participants to learn through the process of the game, stretch themselves personally and engage themselves as much as possible. World Climate offers an opportunity to break out of conventional modes of learning and access deeper, active learning pathways. Try to step away from the role of 'lecturer' and, instead, take on the role of a facilitator or guide. Use the game to pique interest and generate questions. Throughout the game, intersperse short presentations with role-play. Make sure to include time for in-depth discussion during the final debriefing session to drive home key insights.

## Steps

### 1. Welcome the Participants

For this section, dress more casually. For example, don't yet put on a jacket, tie or scarf that you might wear when you take on the role of UN Secretary General or UNFCCC Executive Secretary.

Ideally, you will welcome the group in a separate room from the main room, so when they enter the room, they will start playing their roles. If this is not possible, ask participants to sit in the chairs, but not to move them. People who do not have a chair can stand or sit on the floor.

Ask the participants to play their roles fully to the best of their understanding when the negotiations begin.

Tell the group that the simulation will contain elements that are both realistic and unrealistic.

Some realistic elements include: there will be binding deadlines, the behavior of the global biogeochemical system will be determined by our best scientific understanding, and there are differences between the regions of the world. The simulation C-ROADS is used to brief top decision-makers and negotiators at the actual climate negotiations for many years.

Unrealistic elements include: The game is very highly simplified and is much more dissimilar to an actual UN negotiation than it is similar to one.

As such, tell the group they can use this “virtual world” to experiment with international agreements and deals that would be impossible to explore in real negotiations.

## 2. Assign Participants to Teams

Teams can either be divided up ahead of the event or as they arrive. The advantage to assigning teams in advance is that you can give them their briefing materials to review beforehand and they can research their nation’s or region’s negotiating position. The game also works just as well if you hand out the briefing materials after the welcome and before the official opening of the negotiations.

When the group of participants includes a high level of international and/or political background diversity, assign people to roles that are as close as possible to the opposite of their lived experience. Doing so provides an opportunity for players to see the world from a new perspective and can greatly expand their understanding of geopolitical and social drivers of decision-making. You can divide people by asking participants to stand next to the nation, region, or lobby group with which they most identify. Then, assign them to the group that is the most different. Make sure the strongest advocates for (or actual representatives of) the rapidly-developing countries of the world (e.g., China and India) play the role of the Developed world. Similarly, put the people who

identify with wealthier countries into the roles of the Developing Nations, sitting on the floor.

Ask participants to sit in their areas and introduce themselves and read over their group's briefing materials for several minutes. While they chat, add your more formal dress features.



Above: One set-up for World Climate, in a business school. “Other Developing” (made up of primarily North American and European students, on the floor. “United States” (made up of primarily Indian and Chinese students, in the top row.

### 3. Introduce the Negotiations

As you reconvene the group, change your demeanor to reflect a serious, results-oriented, and no-nonsense attitude. Stand at the front of the room. Do not smile. Quickly stop any side talk by asking the delegates to focus on the task at hand. This helps all participants to dive quickly into their roles.

As briefly as possible, introduce yourself as Secretary General or UNFCCC Executive Secretary, and set the context. Assert that climate change is a big challenge and that the nations of the world must create a plan to address it. If necessary, include a short lecture on climate science to make the case. We have provided PowerPoint briefing slides to aid you in facilitating. Express your disappointment that despite over 20 global meetings since 1992, they have not achieved an agreement that would address climate change sufficiently. E.g.,

*“Distinguished delegates, it is with great honor that I welcome you to the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC). As you know, I am the Secretary General of the United*

*Nations [or Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC)].*

*I want to start by congratulating you for ensuring we now have a Paris Agreement which guides us towards achieving our global goal of keeping the global temperature increase at well below 2 degrees Celsius”.*

Set the tone by making the gravity of the situation and the goal of the negotiation clear. For example, you could say:

*“As I look around the room today, I see delegates who are younger than I am and who, within your lifetime and, certainly, within the lifetime of your children, will be faced with the consequences of our decisions here today. **I ask you for nothing less today than to feel the full weight of your decisions on your future and the future of generations to come.** What is the planet that you will leave to the future?*

*Your task is straightforward: in order to avoid dangerous climate change, you must achieve emissions reductions that will stabilize temperature increases below 2 °C above pre-industrial levels and allocate at least \$100 billion per year for climate financing for those who need it most.”*

Introduce each group and what part of the world they represent. You can give the basic statistics for the country groupings: population, GDP per capita, total emissions, per capita emissions, etc.

Typically, we will first show the population and GDP data while referring to the data overview table, then show the stacked graphs of historical emissions, and then explain the statistics about cumulative emissions and future emissions.

Summarize by saying:

*“In summary, most of the money and the emissions to date have come from the Developed world <point there>, most of the future emissions will most likely come from the Developing A Nations, and the effects of climate change will be felt most strongly in the Developing B Nations.”*

During this time, most likely someone will make a joke about sitting on the floor or something. Sternly rebuke them by saying, “*please refrain from any side talk that does not contribute to achieving the goal of a breakthrough agreement.*” Do not smile.

During this time, most likely someone will ask a question about the simulation or the setup of the game e.g., “why is the Middle East in this group?” or “I want to have more information about costs.” Answer questions as briefly as possible. To requests or expressions of concern, say, “*The Secretary General recognizes that the delegate from the Developed World wishes she had more information about costs,*” and quickly move on. You are not here to accommodate. You are here to move towards an agreement given your rules.

At the end of this question period, say, “*do any other delegates require additional clarification?*” Use this sort of official, parliamentary language.

#### 4. Show participants the “Business as Usual” future

Open C-ROADS World Climate and orient participants to the inputs and outputs of the model, including emissions of heat-trapping gases (expressed as CO<sub>2</sub> equivalents) by bloc, resulting CO<sub>2</sub> concentrations, and temperature outcomes. Show them how, under a ‘business as usual’ plan, with no additional climate policy, global surface temperature rises far above the +2°C goal.

Show the temperature future and connect it to information about the impacts of climate change. For example, you could show future sea level rise impacts with a meter stick next to the group(s) sitting on the floor.

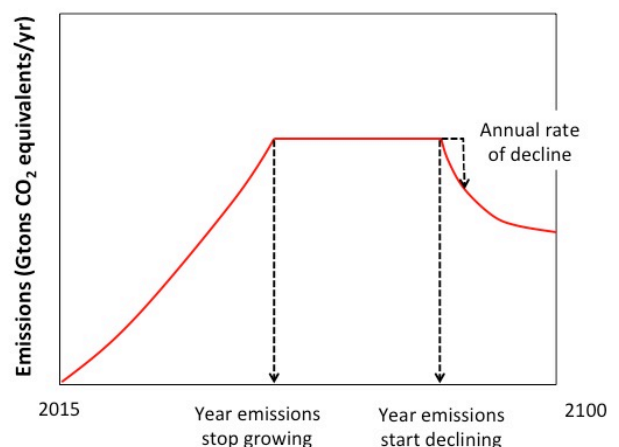
Remind the group of their purpose:

*“Your goal is, by the end of the session, is to achieve an international agreement that will keep global temperature rise at or below 2 degrees C.”*

#### 5. Explain how they will make their decisions

Each bloc must make decisions to address three tasks. Guide participants by explaining these tasks:

1. *Each delegation will set its own fossil fuel emissions targets. You will set:*
  - a. In what year will emissions of heat-trapping gases in your bloc stop growing (if any)?
  - b. In what year, will your emissions begin to decline, if any?
  - c. If emissions will decline, at what rate (% per year)?





2. *Deforestation and land use (REDD) policies. Decide:*
  - a. *Deforestation:* 0 – 100% scale. 0% continues the ‘business-as-usual’ deforestation path (which assumes deforestation declines but is never eliminated this century), while 100% gradually eliminates deforestation over coming decades until it reaches zero in 2050.
  - b. *Afforestation:* 0 – 100% scale. 0% = no new area set aside for afforestation; 100% = maximum feasible area planted with new forests.
  
3. We are creating the “UN Green Climate Fund” for disaster relief, food and water, immigration and refugees, mitigation (investing in any necessary non-cost-saving emissions reductions to achieve Task 1 goals). We are aiming for a total of \$100 Billion per year in financing.
  - a. How much will you contribute?
  - b. How much should others contribute?
  - c. What do you need?
  - d. Terms?

If time is short, you can eliminate the task around the Fund. Decisions about the fund are not directly entered into the computer model, but often lead to heated discussions and agreements that are used as conditions for emissions decisions.



## Proposal Summary

|                  | Emissions Peak Year | Reductions Begin Year | Annual Reduction Rate (%/year) | Prevent Deforestation (0-100% = max effort, zero emissions) | Promote Afforestation (0-100% = max effort, zero emissions) | Contribution to, or request from Green Climate Fund (\$ Billion/yr) |
|------------------|---------------------|-----------------------|--------------------------------|---|---|---|
| United States    |                     |                       |                                |   |   |   |
| European Union   |                     |                       |                                |   |   |   |
| Other Developed  |                     |                       |                                |   |   |   |
| China            |                     |                       |                                |   |   |   |
| India            |                     |                       |                                |   |   |   |
| Other Developing |                     |                       |                                |   |   |   |
| Example          | 2075                | 2085                  | 1.0%/year                      | 80%   | 10%   | \$10 B/yr   |

If you think it would help, you could show an example of the decision a group will make for its emissions path. On a flip chart you could sketch the Business as Usual (BAU) path for one of the regions. Explain the decisions they will make (Emissions Peak Year, Reductions Begin Year, and Annual Reduction Rate) and sketch on the flip chart.

Explain also (with the supporting slide) that each country group will propose how the country groupings should contribute to or draw from the UN Green Climate Fund, which has a goal of \$100 billion dollars.

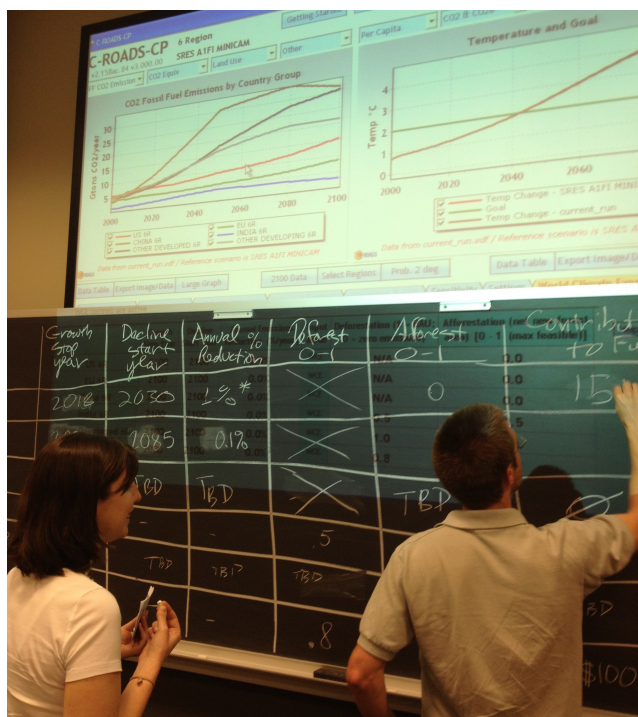
### 6. Ask for first round emissions targets

Pass out copies of the proposal record sheet for documenting each group's NDCs (Nationally Determined Contribution), if teams do not have them already, and give the parties a clear deadline (e.g. 20 minutes) for making a decision on whether to change their default or business as usual actions. Write the time on the whiteboard and explain that, at that time, we will:

1. Confirm submitted new emissions commitments or confirm "business as usual." For example, if groups are unprepared by the end of the time then you may choose to not give them extra time and not enter a pledge this round.

2. Allow for a 2-minute presentation by each group about their emissions reduction commitment and why.
3. Run C-ROADS World Climate to analyze their climate actions and learn whether the groups are on track to meet the goal.
4. If necessary, prepare for the next negotiation round.

Remember to play your role as Secretary General or the climate negotiations Executive Secretary.



Above: Participants input their pledges into the table on a blackboard, with the C-ROADS simulation projected overhead.

## 7. Hear pledges, view simulation results, and explain dynamics

### a. Hearing pledges.

Invite a representative from each team to speak to the group for two minutes about their party's commitment, why they are making it, and what they want the other groups to do.

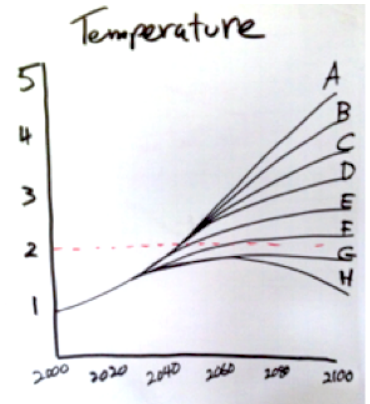
Tell them they have two minutes. Pull out a timer that all can see to show that they will be cut off if they run over time (just like in the UN).

Allow for only minimal additional rhetoric about the difficulty of their situation.  
Do allow for explanations of what it would take for them to reduce more.

## b. Mental simulation

Before showing simulation results, ask participants to mentally simulate (i.e., guess) the outcome of the scenario. We often say:

*“C-ROADS is not a crystal ball or answer machine. Its purpose is to help its users better understand the dynamics of the climate system. To do so, you need first to ‘run the model’ mentally. So, if I input these changes (e.g., Developed Countries cap their emissions in 2040), what temperature outcomes do you think we will see? 5 degrees? 4.5? 4? 3.5? 3? 2.5? 2? 1.5? above pre-industrial levels <Point to the temperature graph on the flip chart>. Write it down right now on a piece of paper. <Pause and wait> Now call out some answers to me.”*



Write the answers informally on a chalkboard. Give an observation, e.g., “Okay, there is a good bit of diversity in views.” Then enter the pledges in the model – and ask the participants to mentally simulate the impact of the pledges on the temperature by 2100.

## c. Contextualizing the results

Enter the first pledges from a team slowly so that all can see the changes as they show up in the model little by little.

Ask, “Do your actions solve the whole problem?” (“No!”)

Ask, “Do your actions help?” (“Yes!”)

Such an approach will help participants learn that no region’s actions are sufficient to address the problem, but each is needed. Continue entering the pledges from the teams until all are entered.

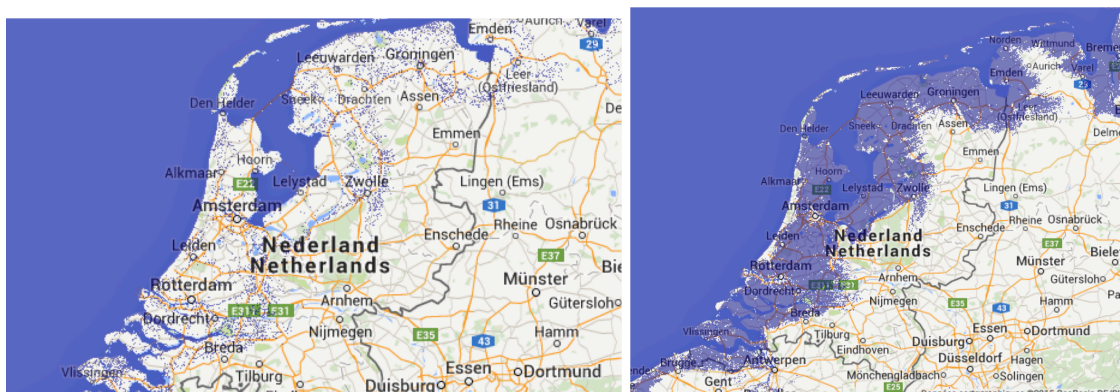
After running the model with the pledges from all regions, identify the progress made and also the necessary results that are needed. E.g., “The good news is that if all countries deliver on their pledges, the 2100 temperature would be 3.7 degrees instead of 4.9. That is a much better world. And yet you can see the gap that remains between 3.7 degrees and the goal of 2 degrees.”

## d. Sea level rise demo

Next, open the “sea level rise” graph in C-ROADS World Climate and show the trend for sea level rise. Say, “*Many of your citizens would be flooded by sea level rise.*” Take the blue tarp (if you have one) and dramatically drape it over the participants sitting on the floor of the other developing countries. Take it off quickly. Note – this action is optional but can be quite powerful.



Another powerful demonstration is to show a picture of a region that participants care about if there was sea level rise. For example, the website <http://flood.firetree.net/> helps you create such maps. Some examples are below.



The Netherlands with +0 meter of sea level rise and +1 meter of sea level rise

In each region, there will be other scenarios that you could use to demonstrate the impacts of temperature rise. For instance, in Africa you can show slides with statistics on disease prevalence following temperature rise, drought, floods, conflicts and migration ([Africa-specific slides available online](#)). You can show participants from Asia the rising sea-level in Shanghai, Shenzhen, or on the border between India and Pakistan. When playing World Climate in Europe, you can show, for example, the coast line of the Netherlands with increasing sea level. Be creative here and consider the contexts which would relate well with your audience.

#### e. Bathtub insight

One of the best opportunities for teaching the dynamics of the carbon and climate system may occur when the groups level emissions, or if their emissions

reductions come too late and are insufficient to meet the 2 degree goal. This would be when total CO<sub>2</sub> emissions cap, likely between 2020 and 2030, and stay roughly level for the rest of the century. This is a good moment to teach the “Bathtub” analogy, or why CO<sub>2</sub> continues to accumulate in the atmosphere even when emissions stabilize. For extensive tips and scripts about how to teach this insight, see Appendix B.

## 8. Subsequent rounds

Continue additional rounds of negotiations until groups meet the goal or start running out of time. Usually in a 3-hour session there are 2 or 3 negotiating rounds.

Ideally, the teams will dispatch negotiators to work out a deal with other teams. This happens either in small group conversations or by someone speaking to the entire group (e.g., “We need to all work together. What if we ....?”) If the latter happens, give the person space and time to facilitate a conversation, but intervene if it drags on too long with little progress.

Often the team playing “Developing B” (in the three region version) or “Other Developing” and India (in the six region version), sitting on the floor, will struggle to get clear about what they can do, given their minimal power. One possibility is to ask them, “*Do you seem to have any power here?*” Once confirming “No”, you could say, “*In the real UN negotiations, delegates from nations such as some in Africa or small island nations will make the case that wealthier nations need to help them for moral and ethical reason, but also because it is in their own interest.*” A powerful illustration of this last point is evident from the computer simulation: ask participants from these delegations to look carefully at projected emissions if no policy actions are taken (‘business-as-usual’) and ask if they think wealthier nations can successfully meet climate goals if they do not also reduce emissions. As future emissions are dominated by the developing world, it quickly becomes evident that their decisions are critical to global success.

Sometimes, depending on the group, at this time we ask the group to favor global considerations over national ones to encourage them away from thinking only in terms of their national interests and see whether this changes anything.

In later rounds, if time is short, the facilitator can bring the group together to negotiate in plenary. This could mean that after two rounds or so, you call out to the groups from the computer to collect their latest positions and enter them as they are announced.



Decide at some point that the groups are not going to make any more progress negotiating. This could be after achieving a two degree scenario or not (sometimes groups don't even get below 3.5 degrees C). Announce, "Congratulations, you have achieved X degrees. As [Secretary General] I declare these negotiations closed."

If the group did not achieve the 2 degree goal, once you are out of role, we encourage you to ask them to continue to offer model inputs until the goal is achieved – an approximate 80% drop in emissions by 2050.

In discussion, the group may explore other approaches to stabilizing CO<sub>2</sub> concentrations and temperature rise. Use the simulator to see the contribution from reducing land use emissions and increasing sequestration through growing more trees.

One variation: if you have time, internet access, and the capacity in your participants, you can give them access to the simulator themselves and have them work in teams to create their own favorite scenario. This could be done during the workshop, between workshops or as a follow-up or homework exercise. Climate Interactive offers some resources for this, including a two-page worksheet, the "[C-ROADS Vision Exercise.pdf](#)."

## 9. Debrief

Ideally, there is time for the group to take a break at this point. During the break, if possible, change the setup of the room to a large bowed theatre, a circle, or similar setup to maximize participants' ability to see and hear each other. Mix up the groups. Change your clothing and demeanor to be more informal, thoughtful, and responsive.

Welcome them back and explain that it is time now to reflect on the experience.

Note that most of what they experienced was very little like the actual negotiations at the UNFCCC, but that we want to learn as much as possible about the real world from the simulated experience.

If time allows, ask participants to jot down their reflections about their experience for 5-10 minutes. Two effective prompt questions are to elicit insights and affective responses are:

- Were there any surprises?
- How did this experience make you feel?

Address as many of the following topics as possible, preferably in this order:

Note – your goals are to facilitate discussion, elicit the insights from the group, and help clarify and summarize. Avoid lecturing.

### 1. Emotion and experience

Ask people to turn to the person next to them and complete the sentence, “When I played my role in the policy exercise, I felt...” (encourage them to talk about actual feelings, not thoughts about climate change or analysis about the exercise. For example, “I feel...”, mad, sad, glad, confused, etc.). Ask them to switch the person they are talking to after a couple of minutes. This could be done in 3s or 4s if need be.

If you have time, ask the group to return their attention to the whole group and ask for a few people to share their experiences with all participants. If they need prompting, remind them that you asked them to play a role that was quite different from their actual life and you are curious how that felt. This feeling may be particularly acute for some people. Acknowledge any emotions that come up, but remain non-judgmental. People will react in different ways.

For a more kinesthetic learning approach, ask participants to move to the part of the room to represent their feeling. Name different areas as "anger," "fear," "sadness," "joy." Some people may stand between several spots to represent they have mixed feelings.

### 2. Real world

Use the slides in the slide deck to explain, briefly, the actual proposals to the UN in the actual negotiations. Explain that:

Most of the 193 countries have their own position, although many of the countries work together, such as in the game).

The pledges currently make a good bit of progress over the reference scenario but would have much further to go to limit warming to two degrees.

If you have time, show the slides on the current state of the global climate deal as agreed in Paris in 2015. Also, you may show the Paris outcome in C-ROADS World Climate by clicking on “View” and “Show Paris Outcome”.

### 3. Insights

Recap the primary dynamic insights from simulating the pledges with C-ROADS World Climate. If you have time, ask participants *“What do you think were the most important insights from this experience? About the climate system, the international issues, politics, sustainability, economics?”* Have them write their answers on paper and then have several share with the group. Look for and summarize as many of the following as possible:

i. Carbon Bathtub

Point to the sketch of the bathtub. Make the point that capping emissions near current levels fails to stabilize CO<sub>2</sub> in the atmosphere because the system behaves just like a bathtub (see Appendix B for details). “If we cap emissions above net removals, concentrations must rise.” To reach climate goals, emissions must peak within the next few years and then decline to near zero by the middle to later part of this century. In other words, this is an urgent problem that requires action on a massive scale.

ii. Required speed and scale

**Required speed.** The longer the world waits to reduce emissions, the harder it is to meet goals. You could recreate a test to show that if the “Start Reduction Time” is delayed five years, then the “Percent Reduction” required is increase by several tenths of percent. To limit temperature increase to two degrees, global peaking of emissions within the next 5-10 years is necessary.

**Required scale.** Because of the dynamics of the carbon ‘bathtub,’ reduction of CO<sub>2</sub> emissions by over 80% is necessary to stabilize CO<sub>2</sub> in the atmosphere.

These insights are also easily demonstrated using a glass to represent our finite atmosphere and water to represent atmospheric CO<sub>2</sub>. As CO<sub>2</sub> is emitted, or water is poured into a glass, it accumulates. Thus, in order to stabilize the level of either CO<sub>2</sub> in the atmosphere or water in a glass, net inflows must be zero (see Appendix B).

iii. Tragedy of the commons

Elicit from the group that this game is an example of a classic system archetype or system trap, “the tragedy of the commons,” in



which individuals acting independently and rationally according to each individual's self-interest behave contrary to the best interests of the whole group by depleting some common resource. Garrett Hardin best described this trap in his essay "The Tragedy of the Commons." You could share [the article by Hardin](#). Point to the solution — **mutual coercion mutually agreed upon** — and thus the need for international cooperation. Perhaps make the connection to other "commons" that require such mutual coercion—traffic lights, fisheries, rangeland, parks, taxi fares. Note that we traditionally think of a commons as something we draw from, i.e., a source. In the climate challenge, the commons is something we dispose into, i.e., a sink.

#### iv. Social justice

The game illuminates many of the tensions between the most developed and less developed countries, particularly related to fairness, historical responsibility for greenhouse gas emissions, and future economic development. Thus, many believe that social equity and justice must be addressed. Otherwise, the developing world will be unable to act.

Further, the simulator shows that, to limit warming to two degrees C, regions of the world would need to be 'all in' – the developed, developing A, and developing B nations all need to engage in ambitious action.

#### 4. Hope

Cultivate the possibility that global society could address climate change. Ask the group, *"You can see that huge shifts in global society would be necessary to address climate change. What gives you hope that the shifts could happen?"* Perhaps have people talk in small groups and share with the plenary. Summarize and support their answers.

And, to the extent that you believe it to be true, share your own answer. Some possibilities include:

1. Many trends are in our favor. Show slides from the Facilitator deck related to the growth in renewable energy, energy efficiency, and support for climate action.

2. Human society has made large shifts before. Ending the slave trade in England, stopping Apartheid in South Africa, achieving peace in Northern Ireland, gaining civil rights for African-Americans in the US, and tearing down the Berlin wall are all examples of powerful shifts people have made.
3. Remind people that hope is a choice, not an assessment. We can choose hope to motivate our actions.

#### 5. Possible role in action

This exercise could be done individually, in pairs, or in small groups.

Ask, *“There are many possible roles that are needed in this work. What role interests you?”*

Ask, *“To be successful, who do you need to be?”* (Here you would be asking more about what sort of leader or citizen. That is, what qualities would they need to bring out of themselves – bravery, diligence, clarity, resolve, strategic thinking, perseverance). Bring the group back to together. Ask for people to share what they said or heard.

For those interested in raising awareness of and engagement with the climate challenge, facilitating it themselves may be of interest. If you feel it is appropriate, please share our open approach and encourage participants to use all of the free online materials and to facilitate their own World Climate session with others.

## 10. Closing

Close the session by thanking the participants and any sponsors, hosts, or facilitators. As a facilitator, you are part of a larger community of World Climate expert facilitators. We deeply value the insights from you and your participants on how best we can improve our tools and the whole exercise. Help us to evaluate the impacts of World Climate exercises by passing around our post-survey and sending the results back to us. Surveys for participants and facilitators are available at: <https://www.climateinteractive.org/tools/world-climate/instructor-resources/evaluation/>. Please send any completed evaluations to [info@climateinteractive.org](mailto:info@climateinteractive.org).

## Advanced Facilitation Tips

1. **Remember your audience.** Consider what your goals are for the event and what participants will most appreciate from it. For example, if you are

presenting to a community audience that might want to get involved further, make time for them to discuss follow-up actions in the debrief.

2. **Minimize your advocacy.** Let the game do its work—in most settings, someone will step forward to advocate for improvements. One purpose of the game is to create the conditions for someone to find that voice inside themselves. Often it requires you as facilitator (even playing an UN official) remaining silent.
3. **Stir the pot and bring the drama.** Accentuate the inequity between the groups in creative ways in order to prompt an experience of the global power gap between different parts of the world. For example, in your introduction you could thank the rich countries for funding the UN and providing your pleasant accommodations last night. Make sure you have one team sit on the floor. And, when you visit the team sitting on the floor (for example, while the teams read their briefings and before you dive into the role of the UN General Secretary or the UNFCCC General Secretary), ask them what power they think they have in the game (i.e. not much).
4. **Engage minds, hearts, and bodies.** We believe that the exercise works best when participants engage all three. *Minds* – thinking about strategy, analyzing the numbers, negotiating well. *Hearts* – giving speeches, negotiating with other parties, or experiencing the impacts of climate change. *Bodies* – participants typically walk around the room to visit other parties and use their posture and gestures to convince others.
5. **Ask participants to mentally simulate model runs.** As described above, take the time to have participants guess the result of a simulation run before seeing the result with C-ROADS World Climate. This practice increases learning.
6. **Give space for reflection and feeling.** Oftentimes, once you have created a scenario with temperature with a good chance (given uncertainty) of creating a temperature increase of no more than two degrees (e.g., 2.0-2.5 degrees C), you can say, “*Consider, for a minute, the possibility that we could make this future happen.*” Go on to show with C-ROADS World Climate what the various parts of the world are doing – peaking and dropping emissions. “*How long do we usually allow ourselves to consider a scenario of success and imagine what it takes to make it happen? Could everyone, for one minute, be silent while we consider this possibility.*” Wait 60 seconds (which will likely feel like a very long time) and then return to the discussion.

7. **Land the “bathtub” insight.** Take the time to ensure that participants understand the counterintuitive dynamics of the carbon and climate system and understand how the bathtub (or “stock and flow”) metaphor is a powerful way to think. See appendix B.
8. **Get grounded in Systems Thinking.** To build on the last point, it could help to enroll in the entire free Climate Leader online training series that teaches Systems Thinking for climate leaders. Sign up for it:  
<https://www.climateinteractive.org/the-climate-leader/>
9. **Develop your own closing speech.** In final 5-10 minutes, share your own personal view on why you remain committed to the work of creating a sustainable world, what you think your role is, and/or why the world should remain committed. We provide possibilities – for example, John Sterman’s materials on how the world needs a social movement similar to the civil rights movement in the US. Or the final two minutes of [this presentation](#) by Drew Jones to the Smithsonian Institution. We also have many PowerPoint slides with encouraging trends. But you may find your own approach.

## Sequence of play

1. Welcome and introductions
2. Participants assigned to roles, take seats and read briefing memos
3. Secretary General calls the Conference of the Parties to order and addresses the delegates
4. Negotiation Round 1
  - a. Negotiations among parties
  - b. Two-minute plenary addresses by one representative of each delegation outlining their proposals
  - c. Proposals entered into C-ROADS World Climate
  - d. Results shown and discussed
5. Negotiation Round 2 (steps a-d)
6. Negotiation Round 3 (steps a-d)
7. Secretary general brings negotiation to close
8. Debriefing
  - a. Participant reactions, comments, feelings; shifts (if any) in negotiating positions across rounds noted and discussed.
  - b. Implementation: can emissions be cut? Costs and barriers to implementation of participant proposals
  - c. How can we catalyze change (participants’ theories of change)

- d. Wrap-up: Personal aspirations and commitments to action
9. Thankyous; participant evaluations and feedback

## Variations

There are many variations people have developed for World Climate. Here are a couple. If you develop a new approach we would love to hear about it—send us an email at [info@climateinteractive.org](mailto:info@climateinteractive.org).

### Added lobbyist and activist roles

At the actual climate change negotiations there are many other parties besides the official negotiating teams that provide input and represent groups of interests. We have briefing materials available on our website for fossil fuel lobbyists, who support continued fossil fuel use, and environmental activists, who advocate bolder policies to slow climate change, if you would like to add these dynamics to your exercise. You might also add a role for someone to represent indigenous peoples, non-human species, or another group of your choice.

Briefing materials and other facilitator resources are available at <http://climateinteractive.org/simulations/world-climate/instructor-resources>

### Microcosm of global population

One variation for setting up the group can be to base the group size on the relative sizes of the actual populations. In the three region version, ~20% would be Developed, ~50% Developing A, and ~30% Developing B. In the six region version ~5% US, ~6% EU, ~7% Other Developed Countries, ~17% China, ~17% India, and ~48% Other Developing Countries. There is a spreadsheet to help you calculate these group sizes at <https://www.climateinteractive.org/programs/world-climate/instructor-resources/>

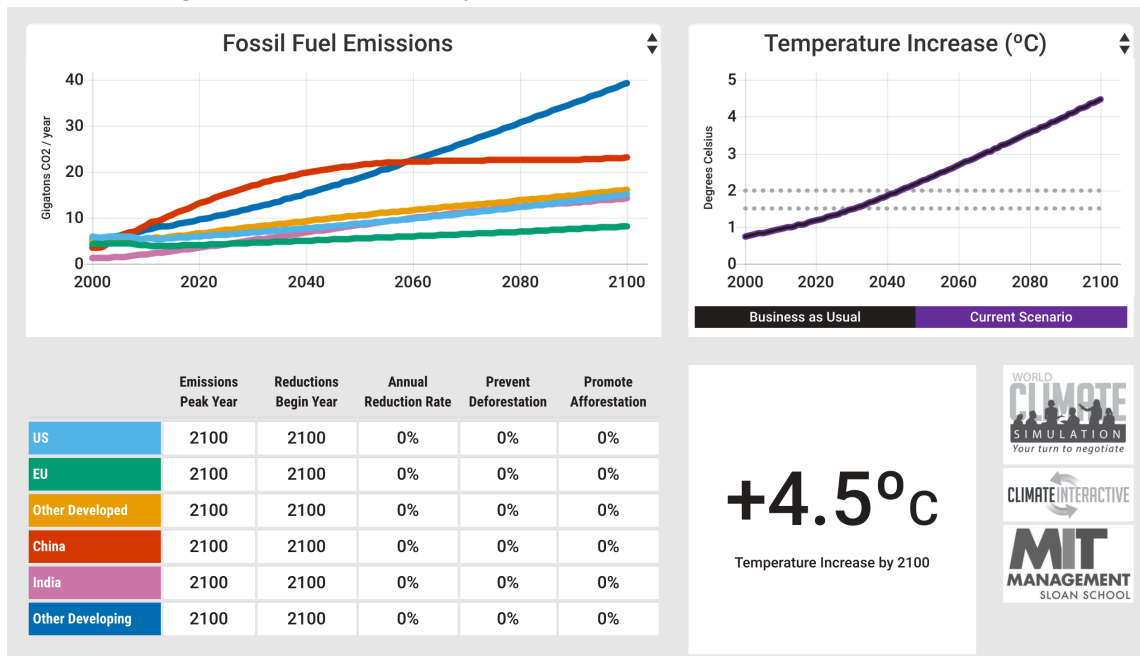
## Appendix A: Using the C-ROADS World Climate Software

There are two version of C-ROADS. Both can be used with World Climate, but it is recommended that facilitators use C-ROADS World Climate, rather than C-ROADS Pro because it is more accessible to general audiences. C-ROADS World Climate is available for download or to run online.

To download:

1. Visit: <http://www.climateinteractive.org/tools/c-roads/>.

2. Click on « **DOWNLOAD C-ROADS World Climate** ».
3. Fill in your information and click « **Submit** »
4. A link will appear to download C-ROADS World Climate to your computer.
5. Once downloaded, open CROADS from your desktop.
6. After taking a moment to load you should see this:



- The default left graph shows the modelled fossil fuel emission trajectories of the six delegations (China, USA, EU, India, Other developed countries Other developing countries).
- The default right graph shows the temperature increase until 2100 associated with your scenario.
- View different graphs by selecting the two triangles to the right of the graph title.
- Enter pledges into the table at the bottom. After each pledge is entered into the table the model will update and the results will be reflected on the top graphs.

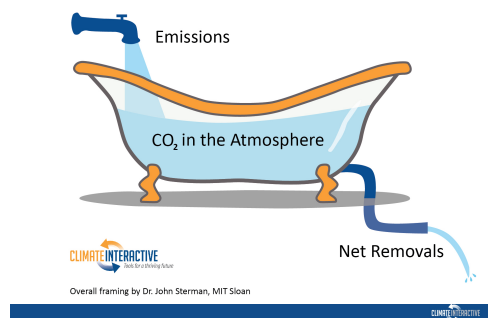
## Appendix B: Explaining the Carbon Bathtub Insight

One of the best opportunities for teaching carbon dynamics may occur when the groups achieve a leveling of emissions or fall short of their goal by doing too little too late, i.e., when total CO<sub>2</sub> emissions stop growing, likely between 2020 and 2030, and stay roughly level for the rest of the century. This is a good moment to teach the “Bathtub” analogy.

There are several resources for you as you prepare to make this point.

- [Climate Interactive’s bathtub simulation and resources](#)
- [Dr. Juliette Rooney-Varga’s video on systems thinking to understand climate.](#)
- Drew Jones’ video as part of the “Climate Leader” MOOC, which teaches [about “stocks and flows” and uses the Carbon Bathtub as a main example.](#)

Note – during this time you are acting less like the UN chair and more like a technical advisor. Open a graph of Total CO<sub>2</sub> emissions (it should be somewhat flat).



First, make sure the participants understand the basics of the biogeochemistry of the carbon cycle. Say something like:

*“This graph shows the behavior of total global emissions of CO<sub>2</sub>, which is <point at the spigot> analogous to the inflow—marked “Emissions”—to a bathtub. These emissions come from where?” (elicit from the group – burning coal, oil, and gas, and deforestation).*

*“The emissions are measured in tons per year, a rate over time. Emissions build up the concentration of “CO<sub>2</sub> in the atmosphere,” which is analogous to the amount of water in the bathtub. What is the current concentration of CO<sub>2</sub>?” (elicit from the group: over 400 ppm.)*

*“Does anyone know the goal that most scientists have proposed for the concentration below which we avoid the most damaging effects of climate change?” (elicit from the group – less than 450 ppm).*

*“CO<sub>2</sub> also leaves the atmosphere through “Net Removals,” analogous to this drain in the bathtub. Where does the carbon in CO<sub>2</sub> end up when it leaves the atmosphere?” (elicit from the group – trees, plants, and soils, and oceans). “It says ‘net’ because a large amount of carbon is constantly moving between the biomass, oceans, and atmosphere.”*

Second, elicit participants’ mental models about how the system behaves – i.e., given a graph of flattening emissions (and removals), ask them to draw the resulting graph of atmospheric CO<sub>2</sub> concentrations and temperature trends. Most people use a correlation heuristic and draw a line with the same shape as the emissions trend.

Third, illustrate the actual system behavior using the bathtub analogy. With inputs to C-ROADS World Climate that result in flattening emissions, navigate to the “Bathtub” view and draw attention first to the emissions trend, then to the concentration trend (which continues to rise). In C-Learn, the link to the Bathtub view can be found in the upper right. In C-ROADS, use the CO<sub>2</sub> Emissions & Removals graph found under the first drop-down menu. Using the bathtub analogy, point out that emissions are an inflow, while removals make up the outflow. As we know, in a bathtub, as long water is coming into the tub faster than it is draining from it, water accumulates. Similarly, as long as emissions of CO<sub>2</sub> into our finite atmosphere are higher than net removals, CO<sub>2</sub> accumulates. Therefore, reductions in emissions are needed to stabilize concentrations. In addition, CO<sub>2</sub> accumulates at an even higher rate as long as action is delayed, requiring steeper rates of decline to meet the same concentration or temperature targets.

Fourth, encourage participants to use this insight to improve the outcome of their negotiation, i.e., *“Okay, now you see that we need significant reductions in emissions. Meet with your teams and determine the next round of pledges.”*



## Appendix C: World Climate Event Planning Checklist

This is a step-by-step checklist to assist first-time facilitators to effectively organize a World Climate Simulation Event. Use it as an indicative event planner, but note that the tasks will vary based on how you intend to apply World Climate.

| ✓<br>Completed? | Proposed<br>Timeline               | Tasks  |
|-----------------|------------------------------------|--|
|                 | 1 <sup>st</sup> sitting to plan WC | Identify what other goals you might have in organizing World Climate and integrate them into your planning.  |
|                 |                                    | Identify the audience you are able to reach, and/or would like assistance to reach   |
|                 |                                    | Fix a date and allocate time for the World Climate (typically 3 hours is sufficient)   |
|                 |                                    | Create a list of what you need. E.g., a co-facilitator; online support from Climate Interactive team etc.  |
|                 |                                    | Identify a venue and note the requirements: e.g. type of room?; fee to use?; are you providing meals/ refreshments? etc.   |
|                 |                                    | Register your event<br><a href="https://www.climateinteractive.org/programs/world-climate/register-event/">https://www.climateinteractive.org/programs/world-climate/register-event/</a> and email Climate Interactive <a href="mailto:info@climateinteractive.org">info@climateinteractive.org</a> if you need further support. |
|                 | 2-5 weeks to the event             | Download World Climate slides from the website and organize/edit as required for your specific region/country/host partner   |
|                 |                                    | Create a poster if advertising or download the standard events template from the website and edit the details as per your event. Include the logos of partner institutions.  |
|                 |                                    | Publicize the event. Climate Interactive can help some if you send event information to <a href="mailto:info@climateinteractive.org">info@climateinteractive.org</a> and/or tweet @worldclimate with hashtag #worldclimate   |
|                 |                                    | Download all the required materials from Climate Interactive website and familiarize yourself with them.   |
|                 | 1 week to the event                | Print your materials based on the number of RSVPs received or anticipated.   |
|                 |                                    | Continue outreach if a public event.   |
|                 |                                    | Prepare/Pack other materials – print outs, blue sheet, snacks, etc.  |

|  |                     |  |
|--|---------------------|--|
|  |                     | Confirm venue arrangement – e.g. projector, movable chairs, snacks, meals (if any) etc.  |
|  | Day before event    | Organize the printed briefing notes based on the number of RSVPs and brief any assistants on how to distribute them and other materials.                               |
|  |                     | Prepare and print an attendee sign-in form, if the event is public, so you can follow-up with people.  |
|  | On the day of event | Arrive at least 30 minutes early to confirm the room arrangement or set the room up.   |
|  |                     | Designate someone to take photos   |
|  | EVENT BEGINS        | Register attendees as they arrive  |
|  |                     | Issue research pre-survey and collect before starting  |
|  |                     | Welcome participants; introduce the goals of the event and any other related activities of the day.  |
|  |                     | Give time for participants to introduce themselves   |
|  |                     | Introduce Climate Interactive and World Climate Simulations  |
|  |                     | Issue Briefing notes and Collect pre-surveys at the same time  |
|  |                     | Start World Climate  |
|  |                     | End World Climate  |
|  |                     | Issue research post-surveys when wrapping up the Debrief   |
|  |                     | Ask people for feedback on the session   |
|  |                     | Offer to participants to register their events, join Webinars, the Climate Leader, and the Online Community - share these links on a slide                             |
|  |                     | Collect research post-surveys  |
|  | EVENT CLOSES        | Date all surveys with date/venue of the event. Scan/post the surveys to the Climate Interactive staff you have been contacting.  |
|  |                     | Take photos of all used flipcharts, the whiteboard (summary table) etc. You can send these to Climate Interactive or use them to prepare a summary report or blogpost. |
|  |                     | Collect any unused materials and use them in future events.  |

## Appendix D: World Climate Community

As a facilitator, you are part of the international community of World Climate facilitators, ambassadors and enthusiasts. Therefore, we would like to invite you to join our World Climate Community email list group in which you can meet dozens of facilitators and share your best tips and practices on how to run a World Climate event. If interested, please send a join request via this link: <https://groups.google.com/d/forum/world-climate-community>. You can also join our Facebook group (<https://www.facebook.com/groups/worldclimateproject/>) or follow us on Twitter @WorldClimate (<https://twitter.com/worldclimate>)

## Appendix E: Contact Us

Do you have questions or suggestions for improvement? Don't hesitate to reach out and contact us. Send an email to [info@climateinteractive.org](mailto:info@climateinteractive.org) or visit our website [www.climateinteractive.org](http://www.climateinteractive.org)