

# **INTERACTIVE ENERGY & CLIMATE SIM GAME WORKSHEET**

Stakeholder Group: \_\_\_\_\_

Number of People: \_\_\_\_\_

Link to instruction video: <http://climate.llnl.gov/media/intro-video.mov>

Link to sim game: <https://climatesim.llnl.gov/>

LLNL's Climate & Carbon Center: <http://climate.llnl.gov/simulation.html>

Steps2STEM website: <http://steps2stem.github.io/>

For each Stage

- 1.) Select a single person to be your representative. They will announce your choices later. Write their name below.

Representative: \_\_\_\_\_

- 2.) Look at the screen. Fill in the information below.

Stage #: \_\_\_\_\_

Budget: \_\_\_\_\_

Carbon Emission: \_\_\_\_\_

- 3.) Review the guidelines sheet (last sheet in this packet). For all stages other than Stage 1, there will have been some random change to your input parameters. Keep that change in mind!

As a group, decide how much of each power source and carbon capture devices you would like to purchase. The cost of item is on the screen. Keep in mind you need to meet the desired energy demand for BOTH transportation and electricity while remaining within budget and limiting carbon emission. Record your decisions below. (3 mins)

Biomass: \_\_\_\_\_

Wind: \_\_\_\_\_

Solar: \_\_\_\_\_

Natural Gas: \_\_\_\_\_

Coal: \_\_\_\_\_

Petroleum: \_\_\_\_\_

Nuclear: \_\_\_\_\_

CO2 Capture: \_\_\_\_\_

- 4.) Have the representative from your group announce your group's suggestions and why you choose them to the other groups. If you are in Carbon Cycle Scientists Group, Civilian Group 1, or Civilian Group 2, have your

representative will give your group worksheet to the Power Company's representative. (5 min)

- 5.) **Power Company Group ONLY:** Review the Carbon Cycle Scientists Group, Civilians Group 1, and Civilian Group 2 suggestions. Decide if you would like to make changes to your selections. If so, revise recorded decisions in 2.). Give the other groups their worksheets. (1 min)
- 6.) **Power Company Group ONLY:** On by one, read your final decisions in 2.), to the workshop volunteer at the screen. The workshop volunteer will input final decision into simulation game. Pay close attention to the bars indicating carbon emission, transportation output, and electricity output.
- 7.) Answer the following questions.

What are your Carbon emission? \_\_\_\_\_

Did you meet the transportation output goal? \_\_\_\_\_

Did you meeting the electricity output goal? \_\_\_\_\_

Did you stay on budget? \_\_\_\_\_

The workshop volunteer will click "next stage." Pay attention to what the game indicates. It will spin a wheel for a random change in parameters. This will have an effect on costs, carbon emission, and/or energy output.

What was the random change? \_\_\_\_\_

- 8.) Next the game will give you an idea of what the net effect your selected energy profile has on global temperature and ecosystem. Answer the following questions.

What was the average global temp change? \_\_\_\_\_

What the effect on the global ecosystem? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 9.) If you passed to the next Stage, start back at 1.) and repeat. If you need another worksheet, please ask one of the workshop volunteers.