



What's the Limit?

A number of useful simulations exist on the web to help us connect greenhouse gas emission with greenhouse concentrations and temperature rise. This exercise takes you through two simple simulations to get you thinking about what the greenhouse gas concentration limits should be or if there should be any limits at all. It is to be done in pairs.

Activity A

1. Open a browser (Firefox, Internet Explorer, Google Chrome) and enter the following URL : <http://climateinteractive.org/simulations/climate-momentum-simulation/climate-momentum>
2. Note that there is a slider at the bottom and when you move it to the right the values change.
3. Can you fill in the Table below:

Climate Target	Climate emissions in 2100 (tons of Carbon)	CO ₂ concentration in 2100 (parts per million)	Global temperature change in 2100 (degrees Celsius)	Mean global sea level rise (mm)
BAU - Assuming no significant action to avoid climate change.				
March 09 - Assumes countries follow their publicly stated proposals for CO2 emissions reduction.				
Flatten - Global CO2 emissions are level by 2025 but do not fall.				
Modest - Global CO2 emissions decrease modestly: 29% below 2009 levels by 2040.				
80% - An 80% reduction of global fossil fuel plus a 90% reduction in land use emissions by 2050.				
95% - A 95% reduction of CO2 emissions by 2020.				





4. Which target would you advocate for?
5. Look up on line what targets the small island developing states are advocating. (Use Google to find “1.5 to stay alive” or AOSIS or emission targets). You may also want to look at what other countries/groupings are advocating for.
6. Discuss your results with the pair nearest you. Is there an agreement?

If you have time, attempt also Activity B

Activity B

1. Open a browser (Firefox, Internet Explorer, Google Chrome) and enter the following URL : <http://scripts.mit.edu/~jsterman/climate/master/>
2. Scroll to the bottom of the page and click Challenge 1. (You can do the others in your free time).
 - a. You will attempt to determine at what level of greenhouse gas emissions would stabilize the atmospheric concentrations of greenhouse gases.
 - b. A brief description of how to do this is provided, after reading, close the yellow box with information by clicking the small arrow.
 - c. Note first how much Carbon emission per year we are currently putting out.
Current emissions _____ Gt Carbon/year
 - d. Move the **RED** arrow (note the changing emission levels). Move it to a level you think is appropriate to stabilize greenhouse gas concentrations at 420 parts per million (isn't this kind of high?). Click on the dialog box that pops up, then next. Did you achieve stabilization?
 - e. Now click again the **RED** arrow that says - *drag me*. What should the target emissions be to achieve 420 ppm? The AOSIS target?

Target	Emissions to achieve target GtC/year	% of present emissions
420 ppm by 2100		
AOSIS		

Get ready to discuss your answers.

