

## The Thingamabob Game Role Sheet

**Y**ou are managers of a company that produces thingamabobs. You are in competition with other thingamabob companies. Even though you have important and highly paid managerial jobs, these jobs are not necessarily secure. As with any capitalist company, you need to continually grow and make a profit. Fail to return a sufficient profit and you'll lose your job.

But the threat of global warming raises some questions about your thingamabob business. Here is what the best science tells us: Over the past 350 million years or so, the sun's energy has been stored on Earth in the form of carbon—especially in oil, coal, and natural gas. Burning carbon-based fuels provides energy that runs our cars and heats our homes. This carbon-based energy also produces and transports your thingamabobs. But here's the problem: Burning carbon-based fuel releases carbon dioxide gas. Carbon dioxide (CO<sub>2</sub>) traps the sun's warmth within the atmosphere—which is why it's called a "greenhouse gas." The main threat is that as CO<sub>2</sub> and other greenhouse gases build up in the atmosphere, Earth's temperatures rise. And as temperatures have begun to warm, the Earth faces dire situations: Glaciers are disappearing; permafrost in Alaska and Siberia has started to melt; corral reefs in the Indian Ocean and South Pacific are dying; species are going extinct at an increasingly rapid rate; weather patterns are changing, leading to more intense storm activity. And the seas are rising, which jeopardizes every coastal area in the world.

Since the 1700s, CO<sub>2</sub> alone has increased in the atmosphere from about 275 parts per million (ppm) to around 400 ppm. Most of this increase has taken place since 1950. And today, it's rising by 2.1 ppm every year. In this period, according to NASA, global average temperatures have risen 0.8° Celsius (1.4° Fahrenheit). No one can predict for certain the impact of, say, 450 ppm CO<sub>2</sub> or 550 ppm CO<sub>2</sub>. Continuing on this course could have catastrophic consequences.

Naturally, the production of thingamabobs is not the only cause of rising greenhouse gases. How we heat our homes, how we get to work, even how our food is raised plays a role. But production of thingamabobs definitely increases the concentration of CO<sub>2</sub> in the atmosphere. Some of this is from

the mining and shipping of raw materials to make the thingamabobs; some is from thingamabob production itself, which requires a great deal of energy; some is from the shipping of thingamabobs from China, where most of your factories are located.

### Rules of the Game

Each company begins the game with \$1,000 in capital. Each thingamabob costs \$1 to produce. You will make \$2 off of every thingamabob you produce and sell. (So, for example, if you produce 100 thingamabobs in round one, you will spend \$100, but you'll get \$200 back, and end up with a total of \$1,100.) Of course, with every thingamabob produced, the Earth comes one step closer to ecological disaster. In the game, production of each 1,000 thingamabobs adds an estimated 2 ppm carbon dioxide to the atmosphere. The world in the Thingamabob Game begins at 380 CO<sub>2</sub> ppm.

To simulate the real-life consequences, here's how scoring will work. There will be five "production" rounds. At the end of the fifth round, you will be rewarded not on how nice you are to each other, or to the Earth, but on how much profit you've made for the company:

#### Rewards:

Top two groups:	Candy for every group member
Group 3	Two candy bars to split between group members
Group 4	One candy bar to split between group members
Group 5	Nothing
Group 6	Nothing
Group 7	Nothing

If all groups tie, each group will receive one candy bar to share.

Here's the catch: If the total production of thingamabobs for all groups produces CO<sub>2</sub> concentrations over the trigger number—somewhere between 420 and 460 ppm (that is, between 20,000 and 40,000 thingamabobs)—the Earth's environment will be damaged beyond repair, and no one will receive any candy. ☹