Global Warming Game

This is a simple card game that illustrates the economics of global warming. Each of you represents an industrial country that emits greenhouse gases. Each of you will be given four cards, two of these cards are red (hearts or diamonds), and two of these cards are black (clubs or spades). The number on the card does not matter. The exercise will consist of a number of rounds. When a round begins, I will come to each of you in order, and you will play two of your four cards by placing these two cards face down on top of the stack in my hand.

Your earnings in dollars are determined by what you do with your red cards. For each red card that you keep you will earn four dollars for the round, and for each black card that you keep you will earn nothing. When you keep a red card you are choosing to continue to emit greenhouse gases. The net benefits (benefits - costs) your country receives in the polluting industries is $4. When you give up a red card you are choosing to cut back on your emissions of greenhouse gases. The net benefits your country receives in the polluting industries is $0.

Red cards that are placed on the stack affect everyone�s earnings in the following manner. I will count up the total number of red cards in the stack, and everyone will earn this number of dollars. This represents the gains to society from the avoidance of global warming (e.g., avoidance of sea level rise, skin cancers, etc.). Black cards placed on the stack have no effect on the count. When the cards are counted, I will not reveal who made which decisions. I will return your own cards to you at the end of the round by coming to each of you in reverse order and giving you the top two cards, face down, off the stack in my hand.

To summarize, your earnings for the round will be calculated as:

Earnings = $4 � # of red cards you keep + $1 � total # of red cards I collect

Use the earnings record sheet to record your decisions, your earnings, and your cumulative earnings. At the end of the game, one person will be selected at random and will be paid X% of his or her actual cumulative earnings, in cash, where X is the roll of a 6-sided die. All earnings are hypothetical for everyone else.

Source: Charles A. Holt and Susan K. Laury, "Classroom Games: Voluntary Provision of a Public Good," *Journal of Economic Perspectives*, 11, 4, pp. 209-15, 1997.