REDEFINING PROGRESS
FOR PEOPLE, NATURE, AND THE ECONOMY

CLIMATE CHANGE ISSUE BRIEF
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THE PRICE SCARE WILL BE A FALSE ALARM

by Paige Brown

"The end of free TV!" warned the major television networks when policymakers considered charging broadcasters for their use of public airwaves. Industries have often responded with "the price scare" when asked to pay for their use of common assets such as fisheries, minerals on public lands, or clean air.

The Earth's atmosphere is another valuable common asset. Private interests have recorded larger profits thanks to the free use of the atmosphere they enjoy for their greenhouse gas emissions.

Redefining Progress believes policymakers eventually will heed scientists' warnings and require reductions in the greenhouse gas emissions that are disrupting the global climate. When they do, it appears likely they'll pursue a *tradable emissions permit system* because private industry, many Congressional members, and a number of non-governmental organizations (NGOs) support the idea.

If policymakers rely on emissions trading rather than taxes or command-and-control regulations to slow global warming, they will have a choice: to auction emission permits or give them away.

We anticipate that some policymakers will resist auctions based on the mistaken notion that auctioning permits will lead to higher costs for consumers.

This paper anticipates and refutes the argument that we can prevent rises in fossil fuel prices by giving emission permits to industry. The fact is that any policy that limits carbon emissions will cause fossil fuel prices to rise. The important question is: who benefits from the inevitable price increase?

A policy that reduces greenhouse gas emissions will cause fossil fuel prices to rise. Collecting permit fees enables government or citizens (through rebates or tax cuts) to collect those price increases. If the government gives away pollution rights by grandfathering emission permits, the extra money consumers and businesses pay will stay in the pockets of the select corporations granted pollution rights.

An earlier policy brief in this series, *Fair and Low-Cost Climate Protection*, summarizes these and other arguments for auctioning emissions permits.[1]

ECONOMESE 101: SCARCITY AND OPPORTUNITY COST

Why would firms not charge customers less if they received permits for free rather than if they bid for them in a competitive auction? The answer lies in two economic concepts: scarcity and opportunity cost.

Scarcity explains why limiting greenhouse gas emissions *by itself* leads to an increase in fossil fuel prices and the creation of scarcity rent. Opportunity cost explains why companies pass these price increases onto consumers *whether emission permits are given away or auctioned.*

SCARCITY AND SCARCITY RENT

The relative scarcity of a good and the demand for it interact to determine a good's price. Scarce goods that are in demand command a high price. Abundant goods, in contrast, typically command a low price, even if they are vital to human survival. ***Box 1*** on the next page describes three cases—water, diamonds, and oil—that illustrate how the interaction between scarcity and demand that creates a good's price.

Capping greenhouse gas emissions is equivalent to restricting access to the atmosphere, which was formerly used freely by emitters. This restriction gives emission permits their value. Whether polluters are charged or not, any efficient policy that limits greenhouse gas emis-

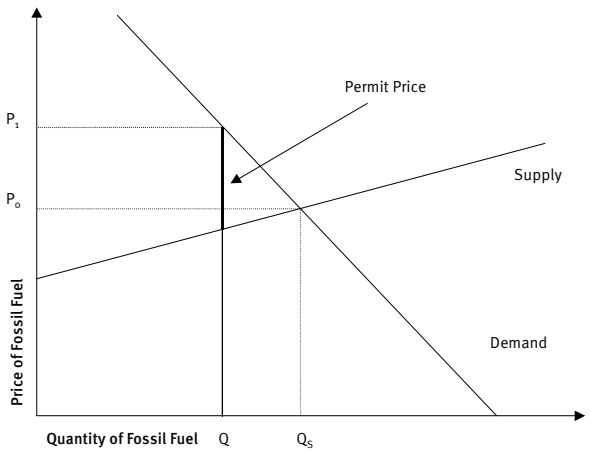
sions will cause fossil fuel prices to rise. If greenhouse gas emissions are restricted, fossil fuel burning is effectively restricted. It is the increased scarcity of the ability to burn fossil fuels that results in higher prices, not whether polluters are charged. Therefore, under *every* feasible, broad market-based emission reduction policy, prices will rise to reflect the increased scarcity of rights to emit greenhouse gases.

Figure 1 illustrates the price effects of restricting the available quantity of the rights to use of the atmosphere. Under efforts to slow global warming, hypothetical greenhouse gas reductions would restrict emissions from Q_S, to Q. Because of the emissions restrictions, fossil fuel use—the source of greenhouse gas pollution—will also become more scarce than before the restrictions. As a result, more fossil fuel use will be demanded than can be supplied, thus driving the price higher, until low-carbon fuel substitutes can be found. As a result, prices will increase from P_0 to P_1.

When goods have a fairly fixed supply, and someone owns the rights to that scarce good, they charge "rent" for its use because the good is scarce. Scarcity rent can be easily illustrated by the recent beanie baby phenomenon, where high demand plus restricted supply led to higher prices. Beanie babies are traded among collectors and occasionally "retired" from production by Ty, Inc.,

FIGURE 1

PRICE CHANGE DUE TO RESTRICTION ON FOSSIL FUEL BURNING



BOX 1

WATER, DIAMONDS, AND OIL

Do you think this business of scarcity and scarcity rent is confusing? You bet. It took economists years to figure out that the interaction between a good's scarcity and demand determines a good's price. The Water-Diamond paradox confounded early economists. Water permits life, therefore it is extremely valuable, but paradoxically, commands a very low price. Diamonds, however, have little practical use, but command a high price relative to water. Economists then realized that scarcity relative to demand determines a good's price, not its intrinsic usefulness. Because water is plentiful, no one values a single glass of it very highly. However, if water were to become scarce, you would be willing to pay an enormous sum for one glass because it would then have scarcity value.

OPEC clearly understands the value of scarcity. Between 1973 and 1980 energy prices rose by about 60 percent, mainly due to OPEC's tighter control of its oil production. The price did not increase because OPEC faced increased production costs, but simply because they decreased the supply of oil. The market responded with increased prices. The OPEC example illustrates that a supply restriction will raise prices by itself. Therefore whether emission permits are auctioned or given away, prices will increase by the same amount.

But the OPEC example also offers a second lesson, which is that people and economies respond to higher prices by using that good more efficiently and finding alternatives. During the oil crisis, the world began to use energy more efficiently because it was more valuable. Demand increased for more fuel-efficient and smaller cars and more efficient industrial machines were developed. So, while prices rose by 60 percent, the nation became more energy efficient, using 20 percent less energy for every dollar of gross national product.

OPEC's control of supply and the resulting impact on gas prices is a recurring dynamic of American life. In early 2000 OPEC restricted the oil supply again, demand for oil outstripped supply, and oil prices increased. OPEC nations began pocketing the scarcity rent. In response, some politicians began calling for a repeal of gas taxes. Many economists noted that repealing gas taxes would be more likely to profit OPEC than help out U.S. consumers. This is because OPEC can pocket scarcity rents because demand for oil is greater than supply; decreasing taxes will not change this equation. OPEC also knows that U.S. consumers will buy gas at the current price and still want more. If the gas tax is repealed, OPEC can keep charging the higher price and pocket all or part of the tax (Anderson 2000).

Anderson, J.W., 2000. The Surge in Oil Prices: Anatomy of a Non-Crisis. Resources for the Future. April. Discussion Paper 00-17.

the manufacturer. Once Ty retires a beanie baby the supply is restricted and the price increases.

If you paid the retail price for the beanie baby, you could then collect the scarcity rent from selling it and profit from the scarcity. For example, the unretired Sarge the German Shepherd fetches a mere $2.50, but the retired Sparky the Dalmatian sells for $45.[2]

As Peter Barnes of Sky Trust says, "Scarcity rent is what landlords—or any owners of highly demanded things whose supply is fairly fixed—get to collect from other people just because of scarcity. The scarcer (relative to demand) things like buildable land, Van Gogh paintings, Mark McGwire home run balls, taxi medallions and slivers of the broadcast spectrum become, the higher their scarcity rents waft."

OPPORTUNITY COST

Opportunity cost is, for many, a more difficult concept to grasp. Why would someone pass along the costs of *not selling* something? If firms receive valuable permits for free, why would they charge customers for the value of the permit? Think about beanie babies: if you bought the now-valuable Sparky the Dalmatian for the pre-retirement retail price of $2.50, would you sell it for the original retail price or the post-retirement $45 market price? Usually the answer is $45; why pass up the extra $42.50?

Similarly with emissions permits, it will not matter whether the companies receive the permits for free or buy them. When firms receive permits, by auction or grant, they now have an asset valued on their books. As they use a permit, the total value of their asset is reduced, because the permits are like tickets that are "punched when spent."

So, in using that asset they have incurred a cost from polluting—the cost of not being able to sell the permit. Economists define this cost as a sacrificed opportunity to purchase something else.

A firm holding permits has the option to burn less fossil fuels and sell the remaining permits to another firm. They make that decision based on the net benefit of using that permit to produce more goods and emissions, compared to the market price of the permit.

If the market price for emissions is $100 per ton, then the company mahy either sell the permit and reduce its emissions by one ton, or use the permit and produce more goods (and emissions). If the opportunity cost (the foregone benefit) of not producing is less than the market price ($100 in this case), the firm will sell permits.

For the firm to use the permit, their own opportunity cost—the value of producing more goods, which must incorporate the emissions cost—needs to be greater than the emissions permit price. Including this emissions cost into the opportunity cost means passing the cost along to consumers. So, once again we see that the initial means of distribution of the emissions permits, whether it is by auction or giveaway, is not a determinant in the price firms set.

Land prices make a useful analogy to emissions permits. Like emissions permits, land has a fixed supply and can be sold. If demand for land in a particular location increases relative to the supply of that land, the land could be sold for much more per acre than previously. If instead the landowner chose to rent the land, he or she could also increase the rent.

Rents typically rise to reflect the increased opportunity cost of not selling the land. For example, suppose someone owns land that they've leased to a rancher at $50 an acre. That rental price is determined by what else the land could be used for. If few other opportunities exist, the rental will be low. However, if demand for the land increases, perhaps because a highway exit is built nearby, then it the owner has a new option: to build a profitable convenience store at the highway exit.

The landowner would likely pass along the opportunity cost in the land rental because she would want to be compensated for the opportunity cost of not putting up a convenience store.

The final price of land, beanie babies, or emission permits is not influenced by what was originally paid for it, it is determined by current market price. Therefore, whether permits are auctioned or given away, a company will be faced with the choice of using the permit, or selling the permit for its market price. Using the permit will still present the firm with an opportunity cost that it must be able to pass along to its customers.

CONCLUSION

The cost of burning fossil fuels will increase when we restrict the use of the atmosphere. It is the limit on the use of the atmosphere that give permits value. Creating a market for the permits and limiting fossil fuel

burning leads to opportunity cost and creates scarcity rent. It is scarcity—not permit auctions—that cause fossil fuel prices to increase. The increase occurs whether or not companies pay for their use of the atmosphere.

The only difference is in who captures the scarcity rent. If the government gives away these valuable pollution rights, the extra money that consumers and businesses pay will stay in the coffers of the corporations that were granted the windfall. Instead, if we require polluters to pay for their carbon emission permits, then the revenue can be returned to citizens and businesses through tax cuts or direct rebates.

In the future, if you hear a politician or industrialist claim that auctioning permits will cost consumers more than giving free permits to firms, you know who will profit.

NOTES

1 This is the fifth paper in a series highlighting why it is imperative that the U.S. require polluters to pay for their greenhouse gas emissions by auctioning emissions permits or taxing pollution. The first paper in this series, *Fair and Low-Cost Climate Protection*, summarized why charging polluters and returning the revenue to citizens and investors improves economic well-being, social equity, and environmental protection. Please direct comments, queries, or requests for additional information to Redefining Progress, 1904 Franklin Street 6th Floor, Oakland, CA, 94612 Phone: (510) 444-3041.

2 Similarly, the retired Velvet the Panther goes for $10, while the unretired Sneaky the Leopard goes for $2.50. Prices can be found at <http://www.beaniex.com>. Accessed July 17, 2000

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Other Publications

The Economics of Climate Change, by Stephen J. DeCanio (1997)

What's Fair? Consumers and Climate Change, by Ansje Miller, Gautam Sethi and Gary Wolff (2000)

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REDEFINING PROGRESS is a nonprofit organization that develops policies and tools that reorient the economy to value people and nature first.

Redefining Progress does this by developing policies and tools to internalize the economy's hidden social and environmental costs (the **Accurate Prices Program**), to transform the human use and distribution of the Earth's natural resources (the **Sustainability Program**), and to restore the value of shared social and natural assets (the **Common Assets Program**).

These three goals come together in Redefining Progress's advocacy of fair and low-cost policies to reverse climate change (the **Climate Change Program**).

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