SCHOLARS
STRATEGY NETWORK

Workable Policies to Fight Climate Change and Bridge the Interests of Developing and Industrialized Countries

Alice Lépissier, Brown University

Not much progress has been made on climate change since it was first recognized as a danger in the 1970s, and in the years since the signing of the United Nation's Rio Framework Convention on Climate Change in 1992 global carbon dioxide emissions have increased by 60%. Why is the world not meeting this challenge? Reducing emissions costs money and will require major changes in the production and use of energy. Viable steps to deal with climate change must address head on the conflicts between economic winners and losers they unleash.

Global Conflict over Energy and Economics

Economic concerns have fragmented negotiations and blocked efforts to create a unifying path forward in the fight against further human contributions to climate change. Developing countries are the least responsible for creating current problems, but they are the most vulnerable to the impacts of climate change and policies to reduce carbon emissions. Developing countries are unlikely to agree to any deal that seriously limits carbon emissions because such limits would prevent them from taking the path to industrialization that the United States, Japan, and other major developed countries took in the 20th Century. On the other hand, rich countries will resist a climate deal that burdens them with the lion's share of the economic costs of reducing emissions, because many in their electorates would resist paying these costs. To manage these competing positions, the international community must find non-zero-sum ways to address climate and work towards transparent understandings of unavoidable trade-offs and costs involved in different deals. To help policymakers, my research colleagues and I built SkyShares, an interactive web tool that allows users to compute and visualize the environmental and economic implications of various climate deals.

Using SkyShares to Model a Viable Solution

SkyShares works by allowing users to set a target global temperature, decide how to allocate the permissible global carbon budget in a political coalition, and choose whether and how much to allow trading of emissions permits in the coalition of participating countries. Using results modeled by SkyShares, my co-authors Owen Barder, Alex Evans, and I propose a scenario that we think would provide a ***politically feasible*** way forward in the climate negotiations and deliver *a triple bottom line* that safeguards the environment, forwards global social justice, and limits costs. Our solutions feature setting a target to stabilize global warming at two degrees Celsius and using cap and trade regulations to help firms and economies meet that target.

Setting a Firm Goal and Helping Nations Adjust

Most mainstream economists agree that raising the price of carbon emissions would force countries, firms, and households to take account of the true environmental and social costs of carbon energy. Some suggest imposing a simple carbon tax, but we argue that this approach would not guarantee the needed emissions reductions, because the tax might be set too low. Instead, we support a cap-and-trade scheme, where a ceiling is set on the maximum allowable amount of carbon dioxide all countries can produce, while market trades facilitate different approaches to meeting national targets under the ceiling.

What about the conflicting interests of developing and developed countries? Annual carbon dioxide emissions in Luxembourg currently average 17 tons per person on average, whereas the average per person is just 0.18 tons in Sierra Leone. In order to hold warming at 2˚C, global per capita emissions need to be around 1.8 tons a year by 2050 and decline to zero by the end of the century. There is simply no ethical justification for granting developed countries emissions rights that are two orders of magnitude higher than those allowed to

developing countries. SkyShares' allocation rules offer a realistic way to bridge current gaps.

Typically, it is easier for developing countries to keep their emissions below a ceiling than for industrialized countries already locked into carbon-intensive production to reduce future emissions. Our model suggests that the best way to deal with this divergence is to let developing countries sell surplus carbon allowances to countries that need them. In this scenario:

- High emitters would reduce the extra costs they inevitably must face to reduce emissions. For instance, total U.S. costs would represent 0.73% of GDP in 2025. However, if no trading of permits were allowed and the United States was forced to meet its target solely by reducing emissions at home, the cost would be 2% of U.S. GDP in 2025.

- Low-income countries would benefit from starting with lower per capita emissions. Ethiopia, for example, could increase its GDP by 25% under this system, and Bangladesh would net 10.96% of its GDP by selling its unused emissions rights. Selling permits would create new revenues for impoverished countries, which they choose to invest in the low-carbon technologies needed to leapfrog a fossil fuel-dependent path to industrialization.

Developed with the aid of our new SkyShares Model, our proposal not only identifies the optimal way for the international community to keep the shared costs of global carbon reduction as low as possible. Our approach also points to a practical way for leaders of nations in very different economic circumstances to form a coalition of the willing to advance the fight against deleterious climate change and, in the process, create winners on all sides.

Read more in Owen Barder, Alex Evans, and Alice Lépissier "A Global Emissions Budget" ***Climate 2020 – Facing the Future*** **(United Nations Association-UK, 2015): 121-124; Owen Barder, Alex Evans, and Alice Lépissier, "SkyShares: Modelling the Economic Implications of a Future Global Emissions Budget"** ***Center for Global Development Policy Paper 067*** **(Center for Global Development, 2015); or visit SkyShares.org**