Climate Realities

By ROBERT N. STAVINS NYT: SEPT. 20, 2014

Credit Mikkel Sommer

CAMBRIDGE, Mass. — ON Tuesday, world leaders will converge at United Nations headquarters in New York for a summit meeting on the climate that will set the stage for global negotiations next year to reduce greenhouse gas emissions and the threat of global climate change. The summit is titled “Catalyzing Action,” a decidedly hopeful characterization.

I wish I were so hopeful.

It is true that, in theory, we can avoid the worst consequences of climate change with an intensive global effort over the next several decades. But given real-world economic and, in particular, political realities, that seems unlikely.

There are emerging hints of a positive path ahead, but first let's look at the sobering reality.

The world is now on track to more than double current greenhouse gas concentrations in the atmosphere by the end of the century. This would push up average global temperatures by three to eight degrees Celsius and could mean the disappearance of glaciers, droughts in the mid-to-low latitudes, decreased crop productivity, increased sea levels and flooding, vanishing islands and coastal wetlands, greater storm frequency and intensity, the risk of species extinction and a significant spread of infectious disease.

The United Nations has set a goal of keeping global temperatures from rising by no more than two degrees Celsius above preindustrial levels. (The average global temperature has increased by about 0.8 degrees Celsius since 1880, with two-thirds of the warming occurring since 1975.) Meeting this goal would require a worldwide reduction in greenhouse gas emissions of 40 to 70 percent by midcentury, according to the Intergovernmental Panel on Climate Change. That's an immense challenge.

The reality is that 300 years of economic growth in the industrialized countries have been fueled by the combustion of fossil fuels — coal, petroleum and natural gas. We still depend on these. And the large emerging economies of China, India, Brazil, South Korea, Mexico and South Africa are rapidly putting in place new infrastructure that is also dependent on burning fossil fuels.

Two points are important to understand if we're going to be serious about attacking this problem.

One, it will be costly. An economic assessment might be "difficult, but not impossible." And two, things become more challenging when we move from the economics to the politics.

Doing what is necessary to achieve the United Nations' target for reducing emissions would reduce economic growth by about 0.06 percent annually from now through 2100, according to the I.P.C.C. That sounds trivial, but by the end of the century it means a 5 percent loss of worldwide economic activity per year.

And this cost projection assumes optimal conditions — the immediate implementation of a common global price or tax on carbon dioxide emissions, a significant expansion of nuclear power and the advent and wide use of new, low-cost technologies to control emissions and provide cleaner sources of energy.

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If the new technologies we hope will be available aren't, like one that would enable the capture and storage of carbon emissions from power plants, the cost estimates more than double.

Then there are the politics, which are driven by two fundamental facts.

First, greenhouse gases mix globally in the atmosphere, and so damages are spread around the world, regardless of where the gases were emitted. Thus, any country taking action incurs the

costs, but the benefits are distributed globally. This presents a classic free-rider problem: It is in the economic self-interest of virtually no country to take unilateral action, and each can reap the benefits of any countries that do act. This is why international cooperation is essential.

Second, some of these heat-trapping gases — in particular, carbon dioxide — remain in the atmosphere for centuries, so even if we were to rapidly reduce emissions, the problem would not be solved immediately. Even the most aggressive efforts will take time to ramp up.

These realities — the global nature and persistence of the problem — present fundamental geopolitical challenges.

Reducing greenhouse gas pollution will require the unalloyed cooperation of at least the 15 countries and one region (the European Union) that together account for about 80 percent of global carbon dioxide emissions. This will mean resolving deep divisions between industrialized nations and developing countries, which argue they should be able to build their economies, just as the West did, without having to reduce or slow the growth of their emissions. This dispute has prevented progress internationally.

In the United States, the issue is mired in partisan politics, and the outlook is not promising for an effective national climate policy that would encourage carbon-friendly innovation and cost-effective emission reductions by putting a price on carbon emissions — either by taxing them or using a national cap-and-trade system that would make it more expensive to pollute. Rather than rewarding today's voters with benefits financed by future generations, as Congress typically does, solving the climate problem will require costly actions now to protect those who will follow us.

Making matters more difficult, climate change is essentially unobservable by the public. On a daily basis, we observe the weather, not the climate. This makes it less likely that public opinion will force action the way it did 50 years ago when black smoke rose from industrial smokestacks, and chemicals and raw sewage were dumped untreated into rivers, famously causing one to catch fire.

Similarly, in China, which leads the world in carbon emissions at 29 percent of the total, the prospect in the near term for a meaningful climate policy appears dim, because of the country's predominant focus on economic growth.

China may achieve its goal of reducing the carbon intensity of its economy (the ratio of carbon dioxide emissions per unit of output) by 45 percent below its 2005 level by 2020. But the country is growing so fast that its coal consumption and greenhouse gas emissions are expected to continue to increase. China is expected to add the equivalent of a new 500-megawatt coal-fired electric plant every 10 days for the next decade, according to projections by the United States government.

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The dispute between the developing and developed world over carbon-emissions reductions has its roots in a series of international agreements in the 1990s, when the industrialized nations alone, but not the large emerging economies, agreed to reduce their greenhouse gas emissions. As a result, since 1990, emissions have been flat or declining in the industrialized world, while increasing rapidly in the large, emerging economies, particularly China.

In the face of current United Nations efforts to develop a promising new approach that would require emissions reductions by all nations, most countries in the developing world continue to insist that these reductions should be made only by industrialized countries.

Despite these obstacles, a developing convergence of interests of the two key emitting countries — China and the United States — offers hope for progress.

While America's annual emissions in 1990 were almost twice the level of Chinese emissions, by 2006 China had overtaken the United States. And China will surpass the United States as the top cumulative global emitter of carbon dioxide over the coming decades.

The Chinese government is deeply concerned about worsening local air pollution, which contributed to an estimated 1.2 million premature deaths in 2010. Most actions to improve local air quality will also curb carbon dioxide emissions.

Both countries are moving forward with regional, market-based programs to reduce emissions. China expects to link its local and regional cap-and-trade programs together in a nationwide system. In the United States, the failure in 2009 of a meaningful carbon-pricing policy in Congress led the Obama administration to turn to regulatory action, including its June announcement of carbon dioxide regulations for existing power plants, which are likely to be met in many states through cap-and-trade systems. The linkage of such systems both within countries and across international borders holds promise as an environmentally effective and cost-effective approach to reducing emissions in coming years.

If the 20th century was the American Century, then leaders in China anticipate (or at least hope) that the 21st century will be the Chinese Century, one of global leadership, not obstruction.

Of course, the political climate in the United States presents its own challenges. It will require immense effort — and profound good fortune — to find political openings that can resolve the debilitating partisan divide on climate change. But if destructive politics have been at the heart of the problem, the best hope may be that creative politics and leadership can help provide a solution.

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