International Herald Tribune
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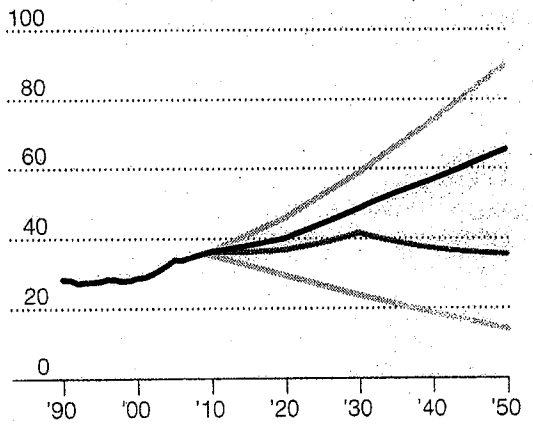
Will it be enough?

The chart shows the estimated impact of proposals put on the table by major countries in Copenhagen. "Business as usual" is what the Intergovernmental Panel on Climate Change believes will happen if no effort is made to curb emissions. Confirmed proposals are official pledges, while potential proposals include reductions merely under consideration as well as those with conditions. The low-emissions path is roughly the amount of reductions scientists say are necessary to limit the rise in global temperatures to acceptable levels. A substantial gap remains between that level and what has been proposed so far.

Global emissions of CO_2
In billions of tons, annually



Source: Climate Interactive's Climate Scoreboard

	Atmospheric CO_2 in 2050 in parts per million		
	CO_2	CO_2 equivalent	Temperature increase*
"Business as usual"	**965**	1,410	**4.8° C** (2.9° - 7.7°)
Confirmed proposals	**755**	990	**3.8° C** (2.3° - 6.1°)
Potential proposals	**590**	725	**2.9° C** (1.8° - 4.7°)
Low-emissions path†	**450**	505	**1.9° C** (1.1° - 3.0°)

*Increase over preindustrial levels in 2100. †Meant to limit the rise in global temperatures to less than 2 degrees Celsius through a 50% reduction in and stabilizing of emissions by 2050.
Note: All proposals are as of Tuesday.

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A 'grand experiment,' both social and political

COPENHAGEN

While accord is possible, many vital details remain to be defined next year

BY ANDREW C. REVKIN

What just happened here?

After two tumultuous weeks of climate talks involving nearly 200 countries, workers are getting ready to clear the vast Bella conference center — to make way for a home-design trade [illegible] show. But even if the negotiations end and some sort of pact is signed, a number of unanswered — perhaps unanswerable — questions will echo through the emptying halls.

Will the Earth's atmosphere ever "notice" a change? Will communities facing risks from shifting climate patterns and rising seas benefit from the hundreds of billions of dollars that have been pledged? Will the money even flow from rich to poor?

To a large extent, clear answers will only come in hindsight, largely because much of what is being attempted by the international community has never been tried before, at least not on the scale of the global energy system and climate.

It took 17 years to move from the 1992 Earth Summit in Rio de Janeiro — which produced the first pledge to avoid dangerous human-driven climate change — to Copenhagen, where countries are on the verge of essentially defining the word "dangerous" by establishing an average temperature ceiling for which to aim and are laying out a suite of incomplete plans to avoid reaching that threshold.

"This is a grand experiment," said James G. Titus, who has been studying the impact of global warming since the 1980s for the Environmental Protection Agency. "Not just geophysical, but social, economic and political."

(It is worth noting that in 2005, Mr. Titus hedged his bets, spending $20,000 to elevate his summer house and yard on the New Jersey shore by about five feet, or 30 centimeters.)

On paper, a political accord has nearly been reached — involving 193 countries — on steps to curb greenhouse gases, save rain forests, shield vulnerable people and share the costs.

But to generate a global consensus among states as varied as Italy and Indonesia, enormous compromises had to be made. Vital details, in diplomatic parlance, are "to be elaborated" next year. The most vexing differences arose from an epic tussle between China and the United States, the economic titans that are the dominant contributors to the human-amplified greenhouse effect.

In the meantime, the slowly reviving global economy and steadily rising human populations guarantee that emissions of carbon dioxide, the long-lived heat-trapping gas at the heart of the climate challenge, will soon rise again.

This virtually guarantees substantial warming and — according to scientific assessments built on decades of work and independent of recent controversies over leaked e-mail messages from scientists — rising risks.

By many assessments, even if countries live up to commitments on gas emissions, there remains a stark gap — measured in tens of billions of tons of projected flows of carbon dioxide — between the combined national pledges of action and the overall long-term trajectories that would be required to limit climate risks.

Many seasoned climate scientists and energy experts, some of whom walked the halls here like an admonitory Greek chorus, still expressed optimism that the century-long spike in emissions from burning fuels and forests was poised to bend downward from the path long labeled on graphs as "business as usual."

"Is Copenhagen the watershed or just another missed opportunity?" asked Michael Oppenheimer, a Princeton climate scientist who attended the talks.

"There's no way to tell yet."

But, he added, even without a binding international agreement, the individual targets set by a host of important countries in the run-up to the meeting already represented a victory.

But some specialists in this arena doubt that the driving force behind such changes are the annual meetings of thousands of globe-hopping diplomats, lobbyists and campaigners trying to sustain and build on the original climate pact, the Framework Convention on Climate Change.

Rather, they say, it is more the result of rising awareness of the need to change energy norms and seek new sources of power, not just to be virtuous but for a variety of more prosaic reasons, from national security fears related to finite oil supplies to the drive to save money by cutting energy waste.

Jesse Ausubel, an energy and environment expert at Rockefeller University in New York, said in an e-mail message that climate negotiations from 1992 to today had enshrined a natural trend, with plenty of bumps and dips, toward less carbon emissions from energy production.

"Politicians are mostly pulling on disconnected levers," he said.

There are also lots of questions about whether the main strategy pursued by many countries — and many U.S. lawmakers — can work. That goal is essentially to steadily increase the price on emissions of carbon dioxide and other greenhouse gases to propel the refinement and diffusion of nonpolluting, but more expensive, energy technologies.

A recent analysis of climate plans by the International Energy Agency in Paris concluded that it would take until 2025 or later for a carbon price to reach a level sufficient to start driving big changes in energy technology, Thomas Kerr, an analyst at the agency, said.

To accomplish anything substantial before then, Mr. Kerr said, the world's major economies — the United States, Europe, Japan and China — need to spend somewhere between three and 10 times more than current levels on directly funding research, development and large-scale demonstration of technologies that could be game changers.

Such investments were not a major focus of the Copenhagen talks.

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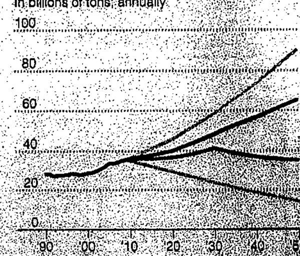

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