

A Fast, Cheap Way to Cool the Planet

By ROBERT WATSON AND MOHAMED EL-ASHRY

This month's Copenhagen talks focused on the leading climate change culprit: carbon dioxide. But reversing global temperature increases by reducing carbon emissions will take many decades, if not centuries. Even if the largest cuts in CO₂ contemplated in Copenhagen are implemented, it simply will not reverse the melting of ice already occurring in the most sensitive areas, including the rapid disappearance of glaciers in Tibet, the Arctic and Latin America.

So what can we do to effectively buffer global warming? The most obvious strategy is to make an all-out effort to reduce emissions of methane.

Sometimes called the "other greenhouse gas," methane is responsible for 75% as much warming as carbon dioxide measured over any given 20 years. Unlike carbon dioxide, which remains in the atmosphere for hundreds of years, methane lasts only a decade but packs a powerful punch while it's there.

Methane's short life makes it especially interesting in the short run, given the pace of climate change. If we need to suppress temperature quickly in order to preserve glaciers, reducing methane can make an immediate impact. Compared to the massive requirements necessary to reduce CO₂, cutting methane requires only modest investment. Where we stop methane emissions, cooling follows within a decade, not centuries. That could make the difference for many fragile systems on the brink.

Yet global discussions about climate and policies to date have not focused on methane. Methane is formally in the "basket" of six gases targeted by the 1997 Kyoto Protocol. But its value is counted as if it has the same lifetime as carbon dioxide.

This ignores its much larger, near-term potential. As a result, methane represents only about 15% of the projects under the Kyoto Protocol's emissions offset program. And it is not a major focus of climate protection programs in any nation.

This is huge missed opportunity, and not just for the climate. Methane also forms ozone, the smog that severely damages food crops and kills tens of thousands each year by worsening asthma, emphysema and other respiratory diseases

Captured methane gas can be used as a clean energy source, contributing to energy security and diversification as well as reducing damaging black carbon (soot) and CO₂ emissions. Solving the methane problem will lead to a higher quality of life by cleaning up city and agricultural wastes and odors, and curbing air pollution from dirty stoves and local industries. It will also create local jobs in construction and operation of methane-abating equipment.

Methane comes from a variety of sources: landfills, sewage streams, coal mines, oil and gas drilling operations, agricultural wastes, and cattle farms. For most of these sources, relatively cheap "end of pipe" technologies are available to collect methane and convert it to useful energy rather than venting it to the atmosphere.

These technologies include drilling into coal seams before mining to release and collect methane (this also reduces the risk of mine explosions, which kill hundreds of miners per year); depositing manure into "biogas" digesting tanks where pipes collect methane produced from decomposition; and covering and lining open landfills, shunting methane into a collection pipe.

In most cases, the collected methane can be used to run a village- or city-scale power plant. The Institute for Applied Systems Analysis and U.S. Environmental Protection Agency (EPA) estimate that as much as 40% of the world's projected methane could be reduced at less than \$60 dollars per ton of carbon equivalent. Some methane projects even have "negative" cost, as the value of the captured gas exceeds the investment.

Experience has shown that even with modest incentives, methane projects, which are typically small scale, can move fast. Timberline Energy, a U.S. company, reports an expected construction time of six to eight months for landfill gas projects once financing is secured. And the United Nations Clean Development Mechanism estimates that setting up biogas projects can take as little as five months. Hundreds of shovel-ready projects around the world are ready to go, but are stalled because of uncertainty over future carbon rules.

This is why on Dec. 11, along with a distinguished group of colleagues from the scientific and financial communities, we proposed the creation of a Global Methane Fund to address the specific measures needed to get methane projects off the ground now. This includes a guaranteed price floor for methane projects to allay uncertainty over future carbon prices.

Funded by governments and private foundations, a Global Methane Fund with only \$100 million to \$200 million could leverage tens of billions of dollars for other projects, which will have a quick and measurable cooling effect in the Arctic and elsewhere. Scientific studies, such as the EPA's June 2006 report, "Global Mitigation of Non-CO2 Greenhouse Gases," conservatively indicate that we could eliminate 1.3 gigatons of annual CO2 equivalent emissions—that's half the U.S. power industry's emissions—just by targeting landfills, coal mines, and oil and gas leaks.

Such a fund would benefit melting glaciers in the Arctic, and in the Andean and Himalayan mountains. And it would demonstrate to the world that we can do something to quickly slow climate change.

We need to get moving to cool the planet's temperature. Methane is the most effective place for us to start.

Mr. Watson is former chair of the Intergovernmental Panel on Climate Change. Mr. Mohamed El-Ashry is a senior fellow at the United Nations Foundation, and former CEO of Global Environment Facility, an independent partnership that funds environmental projects in the developing world.