Center for Clean Air Policy
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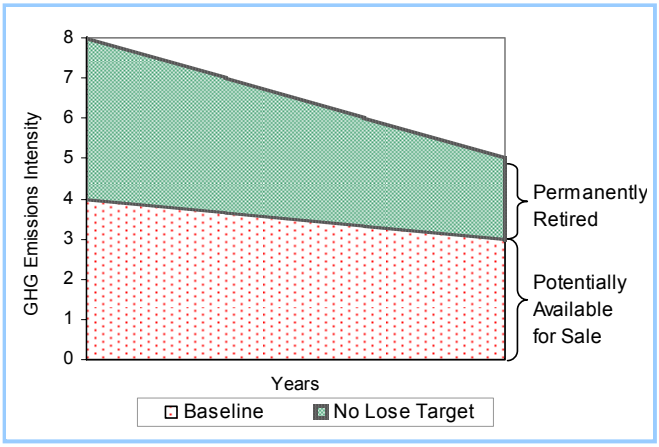
THE SECTORAL PLEDGE APPROACH

A New Proposal for Stabilizing Global Emissions Post-2012 via Major Industry Sector Targets in Developed and Developing Countries

The Sectoral Approach[1] is a clearly defined, innovative and increasingly popular recommendation amongst both developed and developing nations for reducing greenhouse gas emissions (GHG) after the completion of the first commitment period of the Kyoto Protocol in 2012. It emerged from a three and a half year dialogue[2] facilitated by the Center for Clean Air Policy (CCAP) involving senior climate policy negotiators from 15 developed (Annex I countries), 15 developing countries (non-Annex I countries), and select company representatives. Indeed, some of the world's largest emitters of greenhouse gases already have praised the Sectoral Approach and expressed support for its serious consideration by other governments.

The Sectoral Approach offers a means for developing countries to adopt voluntary GHG intensity targets (e.g. GHG/ton of steel) in key industrial sectors and to receive technology incentives from developed countries and international financial institutions to adopt more aggressive targets. Achieving these targets would constitute new contributions to the reduction of atmospheric concentrations of GHG emissions by developing countries. Also, this proposal addresses concerns about competition by encouraging the participation of all the major operators in a sector (in both developed and developing countries) and establishes a process for setting sector targets that uses a consistent, bottom-up technology-based assessment at the start.

Voluntary "No Lose"[3] Pledge
Key developing countries would pledge to achieve a voluntary sector "no lose" GHG intensity target (e.g., GHG / ton of steel) in major energy and heavy industry sectors (e.g. electricity, cement, steel, oil refining, pulp/paper, metals, etc). The inclusion of the top 10 largest GHG emitting developing countries in each sector would insure coverage of 80-90 percent of developing country GHG emissions in each of the selected sectors.



Incentivized
Emissions reductions achieved beyond the "voluntary pledge" would be eligible for sale as emissions reductions credits to developed countries. Emissions reductions to meet the country's pledge would be permanently "retired from the atmosphere" and thus would not be eligible for sale (see figure at right). However, failure to meet the "voluntary pledge" level would not involve any penalties or any requirement to purchase emissions reduction credits from other countries.

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[1] A final paper on this proposal will be released the end of 2005 and available on our website: www.ccap.org.
[2] More information on the *Dialogue on Future International Actions to Address Global Climate Change* a/k/a *Future Actions Dialogue* (FAD) is available at www.ccap.org/interntional/future.htm.
[3] "No lose" GHG intensity targets are defined as incentives for countries that meet voluntary emission reduction targets combined with the absence of penalties for countries that do NOT meet targets.

To encourage developing countries to pledge to meet a more aggressive sector "no lose" intensity target, developed nations and international financial institutions would provide a "technology finance and assistance program". This program would support specific commitments for the deployment of advanced technologies, development of small and medium-sized enterprises to assist in technology implementation, capacity building, and support for pilot and demonstration projects. It would be designed to leverage increased private sector investment by writing down the cost and mitigating the risk of advanced technologies to levels that would ensure competitive returns for private sector investors in these technology deployments.

Bottom Up Approach
The final sector "no lose" GHG intensity target made by each of the top 10 GHG emitting developing countries would result from a negotiation process between developed countries and each individual developing country. The initial building block for this negotiation would be an expert assessment of benchmark energy intensity levels for major processes within each selected industrial sector. This could be carried out by an international entity such as the International Energy Agency or by international expert institutes such as the Lawrence Berkeley Laboratory, the Dutch Centre benchmarking organization or Tsinghua University. Subsequently, each developing country would conduct its own analysis of the applicability of this benchmark to the development of its own carbon intensity pledge level which would reflect local fuel mix and likely impacts of the carbon intensity target on the competitiveness of its future exports from this sector**.** Developing countries could have a single carbon intensity target for each sector or two carbon intensity targets, one for new facilities in the sector and another for existing facilities.

How "No Lose" Targets Succeed
While the voluntary nature of the program does not guarantee emissions reductions would be achieved, two key features should ensure success. Firstly, through the establishment of targets that nations feel confident they can achieve because they are based upon accurate, bottom-up assessments. Secondly, a mix of incentives including the "technology finance and assistance program" and the receipt of emissions reductions credits in the event a nation exceeds its voluntary pledge.

Assuming that developing countries live up to their agreed commitments, there is certainty that at least the agreed investment in technology or practices (and likely the expected emissions reductions) would occur. Lastly, since countries would only be able to receive emissions reduction credits when they exceed the target, there exists a positive economic incentive to go beyond the target level.

Application to Developed Countries
A benchmarking effort, (similar to that of developing countries), would be undertaken for developed nations to determine a consistent level of effort that their industrial sectors should make toward meeting the national GHG emissions reduction target. The final targets for developed countries would be hard, aggregate, economy-wide targets built upon the initial sectoral analyses. In contrast, final targets for developing countries would be carbon intensity targets that place no limits on growth in a given sector as long as carbon intensity is improved. Thus, absolute GHG emissions in the participating sectors of developing countries could grow, while in developed countries the growth in these sectors' GHG emissions would be limited. In developed countries, these sectors could offset their growth through the purchase of GHG emissions reductions from other sectors or the international market.

New Credit Generation
Countries that reduce their sectoral GHG emissions below the pledged level would be awarded emission reduction credits that could be sold to developed countries and would be fully fungible with international emissions trading mechanisms such as Clean Development Mechanisms (CDM). It is suggested that sectoral performance be assessed twice during each five-year commitment period, once after the first two years of the compliance period and lastly at the completion of the period. This would allow developing countries to sell the credits during the commitment period, rather than being forced to wait. Developing countries also would retain the right to keep the credits or to distribute them to companies within the sector as they see fit.

Finally, countries could elect to allocate their pledge target in the form of caps to companies in the sector and allow them to trade among themselves so that the credits would flow to those companies who exceeded their caps. In order to prevent a country from distributing more emission reduction credits than were actually produced, the country would need to guarantee that any shortfall of allowances would be made up by the

government, for example by drawing from Certified Emissions Reductions (CERs) generated from unilateral CDM projects in non-industrial sectors.

Impact on Industrial Competitiveness
A principle goal of the sectoral approach is to promote the use of best practices in internationally competitive industries worldwide. In practice, it is aimed at achieving a level playing field and at encouraging technological innovation. This approach tackles head-on the conventional wisdom that industrial facilities in developing countries are usually less efficient and more carbon intensive than their counterparts in developed nations. The data on major internationally competitive industrial sectors tells a different story (e.g. the U.S. is the second most carbon intensive cement producer in the world[4]), one that should appropriately be reflected in the targets set in the next round of international negotiations on climate protection for the post-2012 period.

This approach may also offer a useful basis to resolve the continuing arguments in the European Union's Emissions Trading System over the fairness of individual Member State allowance allocations to individual companies as a result of the different implementation of sector targets between countries. By developing consistent benchmarks in major industrial sectors, it could move the allocation process within the European Union toward allocation of allowances based, in part, on such benchmarks.

Global Emissions Implications of the Sectoral Approach
To assess whether the sectoral pledge approach could achieve a level of global emission reductions by 2020 sufficient to preserve the opportunity for stabilization of atmospheric carbon dioxide concentrations at the 450-550 Parts Per Million (ppm) carbon intensity level in this century, a combination of new Annex I country national targets and sectoral targets in the cement, electricity, and steel industries within key GHG emitting developing countries, (and lesser national targets for the United States) was modeled. Four scenarios were evaluated, as follows:

1. Strong Case – GHG emissions reductions to -30 percent below 1990 by 2020 for Annex I countries with the U.S. stabilizing at 1990 levels in 2020 and key developing countries meeting specified sectoral carbon intensity targets by 2020
2. Mild Case – Annex I countries to reduce 15 percent below 1990 GHG emissions levels by 2020 with the U.S. at +10 percent above 1990 levels and developing countries at "business as usual" levels
3. Sectoral Case – All countries meet the same sectoral carbon intensity targets by 2020 with no other reductions required

All three cases made progress toward the 450ppm and 550ppm carbon intensity goals in 2050 with the Strong Case understandably achieving the largest reductions, the Sectoral Case in second place, and the Mild Case achieving the least reductions. Interestingly, the Mild Case would require three times the level of emissions reductions per year as compared to the Strong Case during years 2020 through 2050 (6.5 percent reduction per year vs. 2.2 percent reduction per year respectively) to reach the 2050 global atmospheric concentration goal. However, the Sectoral Case also would require substantial annual GHG emissions reductions after 2020 – on the order of four percent per year. These results underline the importance of maintaining economy-wide caps for the Annex I countries as opposed to shifting to a global intensity-based sectoral approach.

Improvements on the Current International Structure
Under the Kyoto Protocol, the focus tends to be on developing country reductions achieved through the Clean Development Mechanism (CDM). These reductions do not offer a benefit to the atmosphere, as they replace reductions that would otherwise be made by developed countries (Annex I countries).

Under the Sectoral Approach, developing country pledges for GHG emission reductions would constitute new contributions to the reduction of atmospheric concentrations of carbon dioxide - this marks an important departure from the current international architecture for emissions reductions. While there are a number of examples of current unilateral efforts by developing countries to reduce GHGs (e.g. China's tough GHG emissions standards for new cars, Brazil's alcohol fuels programs, etc.), the Sectoral Approach could create explicit recognition and quantification of those efforts as well as of new ones.

[4] Hmphreys, K. and M. Mahasenan (2002). Toward a Sustainable Cement Industry: Substudy 8: Climate Change, commissioned by the World Business Council for Sustainable Development, Battelle.

In addition, this approach would mean that all GHG emissions generating facilities in a given sector in a participating developing country would be included in the system, unlike in the CDM where only a limited number of facilities in a sector participate. Reductions achieved beyond the country's sectoral pledge would be considered automatically "additional" and available for sale. Host countries would not face uncertainties about emissions additionality. Developing countries not participating in this new approach could still carry out projects in these sectors under the CDM. In fact, the benchmarking process carried out under the Sectoral Approach would assist the CDM Executive Board and its Methodology Panels to evaluate project-specific baselines and additionality for projects in these sectors in those developing countries.

The new Technology Finance and Assistance Package would encourage the development and transfer of new climate-friendly technologies in developing countries, precisely the technological innovation that is required if the world is to achieve stabilization of global carbon concentrations at safe levels. It would build into the international process an explicit negotiation on technology finance between developed countries and key developing countries. Lastly, it would mobilize new public resources to leverage private investment, a portion of existing resources from the World Bank, other international financial institutions, and export credit agencies for the promotion of technological innovation and GHG emissions reduction.

Conclusion

Several factors distinguish the Sectoral Approach:

- Its development out of a multi-country, three and a half year dialogue of senior climate negotiators from Annex I and Annex II countries
- Its reliance, as a starting point for negotiation, on a bottom up expert assessment of benchmark energy intensity levels for major processes within each selected industrial sector
- Key developing countries pledge of a voluntary sector "no lose" GHG intensity target in major industry sectors
- Targets that constitute new contributions to the reduction of GHG emissions by developing nations
- The promotion of the use of best practices in internationally competitive industries worldwide
- Incentives for developing nations to achieve reductions beyond the voluntary pledge

CCAP endorses the Sectoral Pledge Approach as a highly promising option for reducing GHG emissions post-2012 and urges policymakers to consider it closely as the world begins discussions on the future responses of national governments to climate change during COP 11 and beyond.

About Center for Clean Air Policy

Founded in 1985, the Center for Clean Air Policy today remains the only independent think tank working exclusively on air and climate public policy issues at the local, national and international levels. The Center helps policy makers seek, promote and implement innovative solutions to major air quality and energy problems in order to balance environmental and economic interests.

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