



Sectoral Agreements

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About the 'Breaking the Climate Deadlock' Initiative

'Breaking the Climate Deadlock' is an initiative of former UK Prime Minister Tony Blair and independent not-for-profit organisation, The Climate Group. Its objective is to build decisive political support for a post-2012 international climate change agreement in the lead up to the 2009 UN Climate Change Conference in Copenhagen. Its particular focus is on the political and business leaders from the world's largest economies, particularly the G8 and the major developing countries. The initiative builds on Mr Blair's international leadership and advocacy of climate change action while in office, and The Climate Group's expertise in building climate action programmes amongst business and political communities.

This briefing paper and its companions were commissioned by the Office of Tony Blair and The Climate Group to support the first Breaking the Climate Deadlock Report – 'A Global Deal for Our Low Carbon Future' – launched in Tokyo on June 27th 2008. Written by renowned international experts and widely reviewed, the papers' purpose is to inform the ongoing initiative itself and provide detailed but accessible overviews of the main issues and themes underpinning negotiations towards a comprehensive post-2012 international climate change agreement. They are an important and accessible resource for political and business leaders, climate change professionals, and anyone wanting to understand more fully, the key issues shaping the international climate change debate today.

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Executive Summary

- For political but also for practical reasons, large-emitting developing countries are not ready to take on economy-wide emission reduction commitments in the short term. As an interim step, sectoral approaches can offer a way for such countries to contribute to reducing global emissions.
- While sectoral agreements can be transitional instruments for developing countries, they should not be a substitute for absolute binding targets for developed countries.
- Some sectors with important and rapidly growing emissions and a risk of carbon lock-in should be the focus of any sectoral approach in developing countries. Electricity stands out as a good candidate in this respect.
- Carving out sectors from countries' commitments is politically unappealing – aviation and maritime emissions set an informative precedent. An overarching, comprehensive agreement is needed – rather than a myriad of sectoral agreements – since the goals that are set for sectors must support the broader environmental goals.

Recommendations

- Any attempt to introduce sectoral agreements from an international competitiveness angle can be guaranteed to create significant pushback from developing countries. While this issue is important for the EU, US and Japan, a focus on sustainable development and energy security is more likely to facilitate an international discussion on sectoral agreements.
- There is no “one size fits all” approach to sectoral agreements, but rather a variable geometry for different sectors. In the context of the extreme urgency to negotiate a post 2012 climate framework, negotiators could focus on two “pure” sectors: aluminium and power. Each of them would represent a good test of the two broad categories of sectoral agreements: industry-to-industry transnational agreements and agreements based on international support for domestic public policies.

Sectoral Agreements

This paper explores the potential for sectoral agreements – that is, transnational or international agreements defining and organizing the implementation of sectoral initiatives – to mitigate greenhouse gas (GHG) emissions. Such agreements build on, but are distinct from, other sector-focused approaches such as data collection and sharing of best practices among companies.

The paper discusses:

- The rationale for sectoral agreements
- The different types of sectoral agreements
- Avenues for further action on sectoral agreements in two key sectors – aluminium and power
- How sectoral agreements should fit into the overall climate architecture

The rationale for sectoral agreements

The current climate framework (both UNFCCC and Kyoto Protocol) is built on a comprehensive rather than on a sectoral basis since it encompasses all sources and sinks of the six major GHGs from all sectors. The only exceptions to this comprehensive approach relate to “bunker fuels” used in international aviation and shipping, which are excluded from national emissions and then from national targets; and land use and land use change and forestry (LULUCF) which are distinguished from other emissions sources and addressed by separate provisions.

From both an economic and an environmental perspective, a comprehensive approach to all gases and sources, with economy-wide targets, ought to be preferred. The comprehensive approach is a first best option since it allows reductions to be achieved where they are cheapest, and avoids shifting emissions from targeted to untargeted sectors. Yet sectoral initiatives are currently under the spotlight and could be one of the important building blocks of the post 2012 climate framework. The Asia Pacific Partnership, the G8 in Gleneagles and Heiligendamm and the Climate Convention meeting in Bali all contain appeals to consider mitigation at sectoral level. A number of barriers, political, economic or otherwise, explain why we are turning to what could be considered a second best option.

The climate negotiations are hampered by, amongst other things, disagreement over whether or not major emitting developing countries should take on firm and binding emission reduction targets after 2012. The position of these major emitters is that developed countries have a historical responsibility for current GHG levels and therefore should take the lead in reducing emissions. While it is acknowledged that developing countries also have a responsibility for reducing emissions, this is only considered appropriate (by developing countries) when it is a consequence of sustainable development and therefore does not undermine economic growth. Two, more pragmatic, considerations may also explain these countries' reluctance:

- The inability to project the growth of these major developing economies with any precision over the coming decades. The rate and the content of such growth (e.g., industry vs. services) are uncertain. Agreeing to any target now presents a double risk: an environmental one, if the agreed objective does not mandate serious reductions; and a non-compliance risk, if the opposite holds true.
- There is also considerable uncertainty surrounding the institutional capacity of these countries to deliver on a country-wide goal. While on a technical basis, it is widely agreed that cheaper emissions reductions are available in the developing world, these are not accessible without sound public policies and frameworks. The case of energy efficiency is illustrative: it has proven difficult to mobilize, even in developed countries, as it requires a broad range of policy actions. Tapping this large potential in developing countries will prove difficult until sufficient institutional capacity is in place.

These objective barriers have encouraged policymakers and observers to focus on specific sectors, with an aim of defining commitments in areas where emission trends can be reasonably well forecast, and policies implemented effectively.

Whichever route is taken to achieve it, substantive mitigation action is urgently needed in developing countries, in order to avoid locking in carbon-intensive practices. Given their life spans, today's investments in the energy sector, on the supply and demand sides alike, will determine the pattern of GHG emissions for a whole generation. Three main sectors should attract our attention in this respect: electricity generation, buildings and transport infrastructure. The International Energy Agency (IEA) projects that \$22 trillion of investments are needed in energy supply infrastructure worldwide by 2030. Of this total, China alone amounts to \$3.7 trillion; under current trends, China will invest in 1,260 Gigawatts (GW) of new electricity capacity, 70 percent of which will be based on coal. Under optimistic assumptions, this new coal-based capacity alone commits China to an additional 4 billion tons of CO₂ by 2030 – more than the EU's total CO₂ emissions today.

To orient these investment flows towards clean technologies and to foster significant end-use efficiency, a project-based CDM clearly is no longer sufficient. Whatever incentive mechanism ought to be brought to bear to trigger reductions in developing countries, it needs to represent a significant step up from the CDM. It should also be used to support policy implementation in key sectors.

With these objectives in mind, sectoral approaches can provide an alternative pathway to climate commitments: their practical and political advantages can counterbalance their economic shortcomings. Indeed, the current political deadlock between developed and developing countries may be resolved through a sectoral agreement that recognizes the possible need for international support on capacity and technology. To be most credible, however, any sectoral agreement should achieve broad participation of emerging countries, and should be aimed clearly at avoiding lock-in of carbon intensive investments.

Sectoral agreements may also be useful to deal with another issue: the growing concerns about competitiveness that arise as developed countries impose binding caps on their industries, resulting in additional competitive advantage for developing countries whose industries are not subject to such caps. As markets in energy-intensive commodities become more global and new waves of investments are planned, this gap could lead to carbon leakage in some industries. Efforts by parties to the UNFCCC should not be undermined by the lack of similar efforts elsewhere. In addition of putting energy intensive industries at risk, carbon leakage would cancel (or at least diminish) the environmental dividends of climate leadership. Although this concern is prominent in only very few industries – mainly aluminium, steel and cement – they deserve attention nonetheless. Potentially, sectoral agreements of an international nature in these industries could contribute to levelling the playing field.

However, expectations should not be unrealistic regarding the impact of sectoral agreements on competitiveness. The sectoral agreements that are politically and practically feasible will not ensure a perfectly level playing field between industries in developed and developing countries. Although sectoral agreements could ensure a relatively level playing field between industries on mitigation costs, these costs represent only a small fraction of the total costs faced by industries under climate regulations: these include the cost of electricity and, more importantly, the cost of carbon, which emerging countries clearly are not yet ready to price. Dealing with competitiveness issues in a sectoral agreement should be understood as a way to increase the possibility of industrialized countries taking substantial action in global sectors – not as way to provide a perfectly equal treatment of the industries of these sectors.

Different types of sectoral agreements

Sectoral agreements, then, can achieve multiple benefits: breaking the political deadlock between developed and developing countries; avoiding lock-in of carbon intensive investments; and, to some extent, addressing competitiveness issues. These goals, however, do not by themselves define the sectoral approaches that might be included in a post-2012 framework. What would be their scope? What would be their operational framework (UNFCCC or another framework)? Who are the players who would need to drive change, and which instruments would they use? To address these questions, we offer a simple typology based on two tracks: one focused on the sector itself, and another focused on governments' sectoral policies.

Track 1: focus on the sector itself

The first track focuses on the sector of activity itself (aluminium production for example). Under this approach, national boundaries no longer dictate the scope for action. Rather, a transnational approach is adopted in examining the sector's existing capacities, expected growth, installed and available technologies, barriers, and potential for diffusion of more efficient practices. Such transnational agreements would apply mostly to multinational, energy-intensive industries, and their main aim would be to co-ordinate transnational initiatives between all (or most) firms in each sector. Two broad approaches can be envisioned here: voluntary industry initiatives and government-to-government transnational agreements.

Industry-to-industry initiatives

Industry-to-industry initiatives already exist in several sectors. The aims of these initiatives include clarifying common issues, gathering performance and data, elaborating metrics, exchanging experience and good practices, co-operating on technology, and setting voluntary standards. Examples include the Cement Sustainability Initiative (CSI) under the World Business Council on Sustainable Development (WBCSD), the International Iron and Steel Institute (IISI), and the International Aluminium Institute (IAI). Aluminium, which had significant potential for mitigation from the sharing of best practices, has achieved more than other sectors – on an entirely non-binding, voluntary basis. .

These transnational initiatives are valuable, notably because they reveal information about best practices. But can industry alone go further? In other words, can the private sector build a transnational agreement alone with the required participation and ambition, or is governmental involvement necessary? This question raises many issues such as: the incentive for firms to participate, the governance and compliance of such agreements, and the alignment with domestic policies (firms remain under the jurisdiction of the country where they are located, and a transnational plan of action may interfere with domestic intervention).

Even if voluntary industry initiatives are useful for topics such as technology cooperation and portfolio investment standards, some level of government intervention is clearly needed to achieve the right level of ambition and a successful implementation. Only regulatory frameworks can provide the right incentives to go beyond the level of effort that can be accepted through voluntary initiatives, which are typically driven by image considerations and the desire to gain competitive advantage.

Government-to-government agreements

Alternatively, some advocate an approach where transnational sectoral agreements could be developed on a government-to-government basis, leading to the adoption of intergovernmental sectoral agreements (bilateral, regional or multilateral), thus addressing some of the above concerns. These government-to-government sectoral agreements could build the necessary enabling frameworks through financing, technological cooperation, transfer of knowhow, capacity building and institutional strengthening. Once again, two broad approaches can be envisioned here: one based on emissions reductions (outcomes), the other based on policies (process).

This distinction is often thought to be equivalent to the distinction between quantitative and qualitative measures. This is not the case: transnational sectoral agreements based on policies could and should be built on quantitative measures. These could include, for

example, the make-up of the investment portfolio in the power sector, or a given number of energy efficient buildings.

The approach based on outcomes, although it would seem more environmentally effective, may run into two symmetrical obstacles. If this approach was really ambitious, it would aim at the implementation of a cap and trade system. But is this realistic in the current state of international discussion? Taking into account the EU's difficulties in harmonizing allocation methods for the ETS, is it reasonable to envisage an ambitious agreement on sectoral quantitative targets for a group of countries including the US, China, India and Brazil? On the other hand, any feasible sectoral agreement based on an international benchmark would probably come out as the lowest common denominator and would not provide for the expected emissions reduction. As a consequence, in the context of emerging countries, there appears to be a strong rationale in favour of sectoral agreements based on process rather than on outcomes. These could include a wide range of actions such as investments and the setting of specification standards, with the requirement that these be measurable, verifiable and reportable. One can imagine two particular types of valuable government-to-government transnational agreements:

- **Portfolio of specification standards.** In contrast to performance standards, specification standards identify particular means of reducing emissions. Countries could commit to a portfolio of such standards. For example, a sectoral agreement on transportation might require that states develop modern public transport systems (Bus Rapid Transit, subway, and so on); or an electricity agreement might require that a certain percentage of electricity be generated from non-fossil or low emitting sources, or that Carbon Capture and Storage (CCS) be phased in at coal-fired power plants.
- **Joint R&D.** Countries could commit to funding for joint research and development of future advanced technologies that are not yet commercially viable, for example (CCS) with agreed terms for the sharing of any resulting breakthroughs. A transnational sectoral agreement could also help facilitate technology transfer by resolving any intellectual property rights or other issues specific to that sector.

Track 2: focus on countries' sectoral policies

The second track focuses on countries' sectoral policies (for example, energy policy). The goal is to identify how to foster investment in more efficient capital and operating practices, in line with the expected development of these activities, on a public policy basis. Here, the scope of activities is potentially much wider than in transnational agreements, and can cover for instance the power sector, the building sector, and infrastructure for transport. Critical in this option is the recognition of actions already taken at domestic level and the implementation of tools to support these initiatives. Three different forms can be included in this category:

- **Enlarged GHG crediting mechanism at sectoral level.** Building on the experience of the Clean Development Mechanism and its capacity to directly influence private decisions, proposals have been made with the objective of enlarging GHG crediting mechanisms at the sectoral level. This would entail a more prominent role for governments than is the case with the current instrument, starting with the definition and negotiation of sectoral baselines. However, an approach akin to the CDM will not be able to influence all the installations in a particular sector, even if a country is to take on a sector-wide commitment. Indeed, there will be no direct incentive for individual players to take on mitigation actions, as their achievement could be suppressed by the lack of action in other parts of the sector. As a consequence, countries need complete policy frameworks to drive change, including regulations and caps.
- **"Sustainable Development Policies and Measures" (SD-PAMs).** Governments in developing countries willing to undertake sustainable development policies are seeking recognition and support for their initiatives. SD-PAMs as promoted by South Africa, are an option whereby policies with GHG mitigation potential could provide a pledge-based approach to developing country participation. Although the definition of SD-PAMs remains open, proposed definitions suggest that they should be domestically driven, could cover diverse approaches in many different

sectors, and have a development focus. Thus, SD-PAMs could include a large range of sectoral policies with a direct impact on GHG emissions such as increasing electrification rates, improving energy efficiency or encouraging re- or afforestation activities. They could also encompass policies and measures with a more indirect climate benefit, such as increasing the availability of information and training on climate change, or modifying urban planning procedures to reduce the negative impact of urban developments on local conditions and GHG emissions.

- **“No lose target” approaches.** These approaches combine elements of both previous options in a concept whereby developing countries would pledge to achieve a voluntary, sector-wide “no lose” GHG intensity targets¹ in some major sectors. The incentives for the country lie with the provision of a technological and financial package to support their domestic policy, plus the possibility to sell to industrialized countries any emissions reductions achieved beyond the “voluntary pledge”. Failure to meet the “voluntary pledge” level would not involve any penalties.

SD-PAMs and no lose targets are two concepts with opposite political origins. SD-PAMs were first developed by some developing countries, among the most proactive in climate negotiations, as a way to gain some recognition for their efforts in terms of climate actions, while reaffirming that developing countries should not yet take on binding economy wide targets. On the other side, no lose targets were first advanced by developed countries to broaden participation in a post 2012 climate agreement. These two options differ in terms of carbon markets, which is at the basis of the no lose target idea. But they are brought together through a common domestic policy focus. This is what makes them particularly interesting options to tackle the difficulty of implementing climate policies in emerging countries.

Given the current dynamic of the negotiations, the right political path seems to be SD-PAMs, since they could better recognize the actions taken by emerging countries. SD-PAMs seem to be a better instrument than “no lose target” to kick-start sectoral actions in emerging countries, in that they would fit better with an international agreement supporting the development and implementation of sectoral public policies. Provided that SD-PAMs are made truly measurable, reportable and verifiable, they could be a useful tool in building the conditions for substantial sectoral action in emerging countries.

It is important to underline the transitional aspect of any sectoral agreement. One could say that there is some kind of a chronological sequence between SD-PAMs, no lose targets and transnational agreements. This would start with support for countries’ policies through “quantitative” sectoral SD-PAMs; then turn to sectoral crediting; but it should be made clear from the beginning that crediting is only temporary and that developing countries eventually move to sectoral trading. In any case, though, a crediting mechanism would provide an incentive to take action in emerging countries only if, in parallel, they can engage in important domestic reforms, including with some international support, as recognized in the Bali Action Plan (Art. 1(b)ii).

[Avenues for action on sectoral agreements in two key sectors](#)

So far, we have discussed the merits of each type of sectoral agreements, given broad environmental, political and economic considerations. In the end, how such agreements will unfold will hinge on the characteristics of each sector. These agreements have been discussed – but not yet fully elaborated – for energy intensive industries (including aluminium, iron and steel, and cement), on the grounds of international competitiveness concerns. We would argue that these concerns have been given disproportionate weight in light of other critical factors in the discussion of sectoral approaches. These factors include:

- **Environmental factors.** In an effort to drive effective changes in global emissions, a sectoral approach should first consider the share of global GHG emissions that it could realistically affect. The electricity and heat sector accounts for approximately 24.6 percent of global emissions, land use change and forestry 18.2 percent, transportation and agriculture 13.5 percent, and industry 10.4²

percent. The power sector occupies a special position in this picture, as the mitigation potential of energy emissions should be considered at from the point of view of both supply and demand. The rate of emissions increase should also be considered, as an indicator of a sector's future impact on climate change. Globally, under IEA's assumptions, power is projected to grow much faster than transport globally – 3 and 2.2 percent p.a. for 2005-2015-2030 against 2 and 1.8 percent for transport. Power has a much higher starting point, too. Lastly, the potential for reductions should be considered, where both technical and political considerations come into play.

- **Economic factors.** The first economic factor to consider, then, is the possible capital lock-in of carbon intensive technologies. The power sector must be the first candidate for a sectoral agreement to avoid lock-in. Under current trends, China will invest in 1,260 GW of new electricity capacity by 2030, 70 percent of which will be based on coal. Under optimistic assumptions, this new coal-based capacity alone commits China to an additional 4 billion tonnes of CO₂ by 2030 – more than the EU's total CO₂ emissions today. Buildings should be considered a priority too: About 1.2 – 1.4 billion square metres of residential buildings are constructed in China per year, consuming 20 percent of total steel output and 17.6 percent of cement production³. The energy related CO₂ emissions in buildings in China are estimated to be around 25 percent of China's total CO₂ emissions (IEA). The way buildings are designed and constructed will shape energy perspectives in the next decades as buildings tend to undergo major refurbishment only every 30 – 50 years.

Nonetheless, international competitiveness issues cannot be neglected. The trade-exposed energy-intensive industries are potentially good candidates for a transnational sectoral agreement, from this perspective. An estimated 30 percent of chemicals production is traded across borders, as is 40 percent of steel, 45 percent of unwrought aluminium, and more for aluminium products. On the other hand, less than 6 percent of world cement production is traded, the result of widely distributed primary materials and a low value per weight, which discourages transport over long distances.

In addition to environmental, economic and competitiveness factors, there are several “negotiability” factors that should be considered in discussing sectoral approaches. These include:

- **Concentration.** Since one of the multiple benefits of sectoral agreements their potential to ease negotiations, particular attention should be paid to the concentration of actors in a given sector. There is generally confusion between the concentration of countries responsible for a significant share of the global production and the concentration of firms, or even of plants. On steel, for example: the top 25 steel making firms account for more than 40 percent of the global output. But while the sector is characterized by many large firms, there are also a large number of small firms. This is especially true for China, where there are more than 7,000 firms, the top 3 accounting for just 14 percent of output. The situation is even more misleading in the cement sector. The top 12 cement producing countries account for more than 80 percent of global production and the six leading firms account for an estimated 21 percent of global cement production. But China has over 5,000 cement manufacturing facilities, many of which are rural township enterprises. These characteristics probably disqualify these sectors for a sectoral agreement, at least from a transnational perspective.
- **Homogeneity.** The homogeneity of products and processes also needs to be taken into account to test the feasibility of an international benchmark. The cement sector employs a limited set of production processes and produces a limited range of products. Steel production techniques do not vary much globally (at least in comparison with other industrial processes); neither do aluminium production processes or technology.

All these factors need to be taken into account when judging whether a given sector is a good candidate for a sectoral agreement. But these criteria apply very differently to different sectors, suggesting not a ‘one size fits all’ but rather a variable geometry for different sectors. Even within a given sector, a two-tier approach might be needed,

with one tier for the big players (aimed at including them first in global carbon crediting, then in global carbon trading), and another tier for the smaller ones (aimed mostly at supporting large developing countries in closing or requalifying its small plants). This two-tiered approach would be particularly useful for some large developing countries in respect of its cement or steel sectors.

In the context of the extreme urgency to negotiate a post 2012 climate framework, negotiators could focus on two “pure” sectors, aluminium and power. Each of them would represent a good test of the two broad categories of sectoral agreements: industry-to-industry transnational agreements and those based on international support to domestic public policies.

- **Aluminium.** The aluminium industry may be one of the very few truly global industries. The ten leading companies produce 55 percent of the world’s aluminium and Alcan (now Rio Tinto Alcan), Alcoa and Rusal together account for approximately one third of global production. An estimated 45 percent of global production is exported. Plus, the International Aluminium Institute clearly went further than any other voluntary industry-to-industry initiative with its mitigation pledge. Therefore, the aluminium sector can be considered as a good test of what a transnational agreement would be able to achieve.
- **Power sector.** The power sector is a good candidate for a domestic sectoral agreement for at least four reasons. First, it is the sector with the highest share of global emissions (24.6 percent), and the one growing most rapidly (IEA, 2007). It is also a good test case for implementation of an agreement that must be multi-dimensional. While the best available technologies and low-carbon production must be fostered on the generation side, these will reach a limit as their effects on prices will become increasingly telling. Obviously, significant action is needed on the demand side, both to mitigate the cost, but also because of the large reduction potential and the cost savings that efficiency policies can bring to consumers.

Electricity supply features a wide range of available technologies which are not yet diffused on the required scale (much more so than in the cement and steel industries). These include low carbon technologies (gas turbines, supercritical coal power plants) and zero carbon technologies (renewables, nuclear). Further, some breakthrough technologies, such as CCS and hydrogen, await the critical mass of funding that they require in order to be developed, tested and deployed at scale. Lastly, the power generation sector has limited international exposure (although electricity prices affect the global competitiveness of products like aluminium); and it remains a regulated sector in many regions of the world, thus giving public intervention significant strategic clout.

[How sectoral agreements should fit into the overall climate architecture](#)

In principle, there are many ways in which sectoral cooperation could play a role in the international climate policy framework. These different models imply different governance evolutions for the climate regime.

To begin with, one could think of a sector-only approach, where multiple sectoral agreements would cover a significant share of total emissions. The agreements would be separate from one another, even if some links could exist through trading mechanisms. But a sector-only approach to international cooperation is likely to be neither desirable nor feasible, since it would leave international climate policy without a strong centre of gravity. An overarching, comprehensive agreement is required, rather than a myriad of sectoral agreements: whatever the goals that are set, they must support and not contradict any broader environmental goal. A comprehensive agreement covering almost all sectors needs to be the integrating force of any post 2012 climate framework, even if it is accompanied by special sector provision to engage countries that are not ready to accept an economy-wide target.

With this requirement in mind, there are four potential models of governance for a comprehensive agreement and sectoral agreements:

