

# Global Sectoral Industry Approaches to Climate Change

*Helping or harming?*

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## Introduction

The World Business Summit on Climate Change provides an example of the leadership role that the global business community has assumed in paving the road to a post-2012<sup>1</sup> climate regime. Among various proposals from the business lobby for the creation of a policy for concerted action on climate change, the concept of co-operative sectoral approaches has risen to the top of the agenda. The Bali Action Plan of December 2007 put sectoral approaches officially on the negotiating table, with its proposal for '*cooperative sectoral approaches and sector-specific actions*' as a means to '*enhance implementation of*' articles in the UN Framework Convention on Climate Change (UNFCCC 2007: Art. 1 (b) (iv)).

It is in this context that the World Business Council on Sustainable Development (WBCSD), in particular, has advanced the idea of co-operative sectoral approaches organised by business, referred to in this briefing paper as global sectoral industry approaches (Egenhofer and Fujiwara 2008; WBCSD 2009).<sup>2</sup> In the current debate, these approaches compete with a number of alternative proposals for sectoral approaches put forward by governments,<sup>3</sup> environmental groups, and academics (Meckling and Chung 2009).<sup>4</sup>

The general idea of global sectoral industry approaches is that business and governments should co-operate on a voluntary basis to set emission-reduction targets and/or promote low-carbon technologies at the level of global industry sectors. Proponents argue that sectoral approaches may be more manageable than economy-wide approaches and may facilitate the co-operation of developed and developing countries in a global climate regime. David Hone, Climate Change Adviser for Shell, has argued that '*[s]uch approaches may deliver the end-game policy structure faster than would be the case without them*'.<sup>5</sup> Moreover, by engaging major developing countries, sectoral approaches might address issues of international competitiveness in carbon-intensive global industries.

However, the potential virtues of global sectoral industry approaches are not as simple or as certain as their advocates suggest. This paper sets out the arguments for and against such approaches on the basis of *equity* and *effectiveness*, that is, will these approaches help achieve a fair and safe deal on climate change?<sup>6</sup> A global deal on climate change is fair if, among other key indicators, it shares the burden of mitigation efforts on the basis of historical responsibility and capability: developing countries should not be expected to take on the same types of binding, economy-wide emissions-reduction commitment as developed countries in the next commitment period. A climate regime is effective if it ensures that the rise in global average temperature does not exceed pre-industrial levels by more than 2 degrees (cf. European Commission 2009).

The paper argues that voluntary sectoral agreements are neither a safe nor fair way to engage industry in developed and developing countries to set targets. They will not result in effective enforcement of targets in developed countries and will potentially impose an undue burden on businesses in developing countries.

**1** *Global Sectoral Industry Approaches to Climate Change*, Oxfam International Research Report, May, 2009

Instead, developed country governments must set and enforce absolute targets for their industries. In developing countries, energy-intensive industries should be given incentives to reduce their emissions, in the context of what is appropriate for those countries' mitigation plans.

On the other hand, industry sectoral approaches for cooperating on the development and transfer of technology do have the potential to engage businesses in both developed and developing countries. However, careful attention must be paid to the detail of any such agreements in order for them to be 'safe' and 'fair'. Intellectual property rights must not be used as a barrier to the transfer of technology. The approaches must be governed in a fair and representative way, so that they are not used solely for opening up new markets for rich country businesses. The Clean Development Mechanism (CDM) must be reformed, and better provisions made to measure, report and verify emission reductions and financial flows.

## Global sectoral industry approaches for a post-2012 climate deal

The WBCSD was the earliest and so far is the most vocal advocate of global sectoral industry approaches. Among other advocacy activities, Björn Stigson, President of the WBCSD, chaired a task force on global sectoral industry approaches, convened by the Centre for European Policy Studies (CEPS) in Brussels (Egenhofer and Fujiwara 2008). On the occasion of the Bonn Climate Change Talks in April 2009, the WBCSD published 'Towards a Low-Carbon Economy' (WBCSD 2009), its most comprehensive position on sectoral approaches to date.<sup>7</sup>

The WBCSD's proposal outlines two different types of global sectoral industry approach: (1) approaches that set voluntary emission-reduction targets, and (2) approaches that focus on technology co-operation. Given their different characteristics, these two variants are discussed separately.

As for voluntary sectoral target setting, the WBCSD's Cement Sustainability Initiative<sup>8</sup> (CSI) has proposed a sectoral approach for the global cement industry (WBCSD 2008a; WBCSD 2009). It suggests that cement producers in developed countries should adopt absolute emissions caps, while cement producers in developing countries accept intensity targets.<sup>9</sup> The participation of industries from developing countries would be encouraged by international incentive mechanisms, including the CDM, which would allow them to 'sell' their emissions reductions to industries in developed countries. While the exact details of the CSI proposal are yet to be determined, it increasingly converges with the 'no-lose' target approach developed by the Washington-based Center for Clean Air Policy (CCAP),<sup>10</sup> which has also been involved in the work of the CSI (cf. CCAP 2008; Schmidt, Helme et al. 2008). The latter is currently modelling different scenarios, the results of which will be published in June 2009, on the occasion of the forthcoming climate talks in Bonn.

In terms of technology co-operation, the WBCSD proposes sectoral forms of collaboration for the demonstration of carbon capture and storage (CCS)

technology, and for the deployment of technologies in the electricity sector (WBCSD 2009). Such technology-oriented sectoral approaches would be linked to incentive structures under the UNFCCC, including a reformed CDM and potential new funds. Sectoral technology co-operation would be recognised by the future climate regime as nationally appropriate mitigation actions (NAMAs) of developing countries. Although the WBCSD focuses on three sectors, sectoral target setting and technology co-operation can be applied to a number of other sectors.

Other industry bodies and initiatives have also been promoting global sectoral industry approaches. They include the International Chamber of Commerce (ICC), the International Aluminium Institute (IAI), the World Steel Association (WSA),<sup>11</sup> and the Asia-Pacific Partnership (APP). 'The ICC recognizes and supports the promotion of voluntary approaches by business and industry' (ICC 2007: 2), although it notes that stakeholders have very different notions of what constitutes a sectoral approach. Members of the IAI committed themselves to a 10 per cent reduction in energy intensity (with a 1990 baseline) by 2010, and a consideration of more stringent targets for 2020 (Baron, Reinaud *et al.* 2007). The WSA has focused on promoting the demonstration of technologies and data-gathering, while it aims to develop sectoral emission-reduction targets (Egenhofer and Fujiwara 2008). The APP, a public-private partnership, has organised sectoral task forces to advance the development and deployment of technologies in energy-supply sectors and energy-intensive manufacturing sectors.<sup>12</sup>

## Voluntary sectoral target setting: harming a fair and safe deal

Sectoral target setting through industry initiatives relates to a number of regulatory measures, such as absolute reduction targets, intensity targets, and technology benchmarks.<sup>13</sup> Industries in developing countries could be incentivised to participate in such agreements by the use of crediting mechanisms and other financing mechanisms. Business interests in developed countries, notably in the EU, are pressing for such agreements to mitigate competitiveness issues. Preliminary analysis suggests that – against the yardstick of fairness and safety – such agreements suffer from a number of significant shortcomings.

Industries in developed countries call for a level playing field in international competition, to avoid competitive disadvantages through **carbon leakage**, i.e. the shift of carbon-intensive production to countries without emission controls. Sectoral approaches are seen to be the means to this end. On the other hand, developing countries argue that if sectoral approaches were to impose equal restrictions across the board, they would conflict with the UNFCCC principle of 'common but differentiated responsibilities', which requires developed countries to accept the largest burden in terms of global greenhouse-gas (GHG) mitigation activities. For example, China has stated that a '*discussion ... leading to global sectoral standards, benchmarks or emission reduction targets is not acceptable*'.<sup>14</sup> Hence, discussions about carbon leakage and its equity implications have reached stalemate. In this context, two points should be considered.

First, the rhetoric about carbon leakage implies a degree of certainty about the phenomenon that is not in fact reflected in the current state of research. Carbon leakage might affect only a few sectors under very specific conditions (Graichen, Schumacher et al. 2008; Maria and Werf 2008; Reinaud 2008). In many cases, the regulation of pollution does not lead to a shift of production, for reasons discussed in the Stern Review: *'Even where industries are internationally mobile, environmental policies are only one determinant of plant and production location decisions. Other factors such as the quality of the capital stock and workforce, access to technologies, infrastructure and proximity to markets are usually more important determinants of industrial location and trade than pollution restrictions'* (Stern 2006: 1). In fact, the argument of carbon leakage is often used to prevent more stringent domestic regulation (cf. Neumayer 2001) and/or to create an extra burden for competitors even though the risk of carbon leakage is not relevant.

Second, in cases where the risk of carbon leakage is real, sectoral approaches are not the policy instrument of first choice, for a number of reasons. In advising on targets, more recent industry proposals differentiate between industries in developing countries and industries in developed countries. The main idea is to incentivise industries in developing countries to adopt intensity targets or benchmarks, while not penalising non-compliance. Such sectoral approaches, however, have no levelling effect on international competition, as no mitigation costs are imposed on competitors in developing countries. For this reason and for a number of others, including enforcement-related issues, sectoral approaches would not be an effective instrument for addressing carbon leakage in sectors where the risk of leakage is real. Other instruments might be more suited to addressing the issue (Colombier and Neuhoff 2008).

With respect to the effectiveness of sectoral targets in delivering real emissions cuts, three points deserve particular attention: enforcement capacity; the exemption of certain sectors from national regulation; and intensity targets.

First, the lack of **enforcement capacity** raises concerns about the effectiveness of sectoral industry targets – and hence their ability to play a part in a 'safe' deal. The WBCSD suggested that sectoral approaches should be governed by a public-private board. The status of such a board in international law remains unclear, as does the question of how it would enforce targets and mitigation activities (cf. Baron, Reinaud et al. 2007). Since the aim of sectoral target setting is to create a 'technology pull'<sup>15</sup> by internalising environmental costs, there is a case to be made for the formulation and enforcement of sectoral targets to be administered by government entities that can appeal to domestic law for enforcement purposes. Otherwise, incentives will not materialise.

Second, proposals for global sectoral industry approaches might represent strategic moves by industries in developed countries, particularly in the EU, to claim **exemption** from mandatory domestic legislation, such as the EU Emission Trading Scheme (Mayer 2008). Once covered by a global voluntary agreement, industry might argue that global self-regulation could effectively substitute for domestic regulation. Such 'carving out' of sectors from existing regulatory frameworks would jeopardise the effectiveness of

Finally, some industry actors, such as the IAI, suggest **intensity targets** for industries in developed nations. While intensity targets represent regulatory options for NAMAs in major developing countries, they do not represent options for industries in developed countries. Developed countries need to achieve significant *absolute* emission reductions in order to avoid a rise of global temperature above safe levels. Intensity targets need not lead to a reduction in overall emissions, not least because of the so-called ‘rebound effect’, which suggests that efficiency gains are partly offset by an increase in consumption (Greening, Greene et al. 2001). For instance, President Bush’s Global Climate Change Initiative, launched in 2002, aimed to reduce the GHG intensity of the US economy by 18 per cent between 2002 and 2012. Research instead suggests that in this scenario overall emissions are likely to increase by 32 per cent over the same time period (Vuuren, Elzen et al. 2002).

In conclusion, concerns about the equity and effectiveness of voluntary sectoral industry targets outweigh their potential advantages. For reasons of enforcement in particular, sector-based regulatory measures should be imposed and enforced by national governments, to create effective incentives for technology development. When it comes to the implementation and measures for technology development and transfer, there is, however, a case to be made for global sectoral industry approaches.

## **Sectoral industry technology co-operation: helping a fair and safe deal**

Technology co-operation through global sectoral industry approaches represents – under certain conditions – a potential option for engaging the private sector in delivering a fair and safe deal. Such approaches may be applied to several aspects of technology research, development, deployment, and transfer (cf. De Coninck, Fischer et al. 2007). The WBCSD’s proposals for developing CCS technology and for technology transfer in the electricity sector are examples of this approach. The International Energy Agency estimates that global investment in clean technology amounting to US\$45 trillion is needed over the period up to 2050 in order to prevent catastrophic climate change (IEA 2008). Sectoral industry technology co-operation represents an important instrument for achieving change at this order of magnitude.

Industries in developed countries have a keen interest in accessing low-cost credits to offset their own emissions. Increasing investment in technology projects in developing countries through the CDM is one such way this could be achieved. Furthermore, technology-oriented agreements improve access to markets in developing nations. Developing countries, on the other hand, have supported



technology-oriented sectoral approaches, interpreting them in the sense of Article 4, paragraph 1(c), of the UNFCCC, which calls for technology co-operation (UNFCCC 2008b; IISD 2009). To design sectoral technology approaches in a fair and safe way, a number of challenges need to be managed.

With regard to the fairness of sectoral industry technology approaches, questions of intellectual property rights and the fair and representative governance of sectoral approaches need to be addressed. The role of **intellectual property rights** in technology transfer deserves an extensive separate discussion. Too often, proposals for technology-oriented sectoral approaches evade key questions pertaining to the legality of property rights. However, when it comes to implementing technology co-operation, unresolved legal questions represent major obstacles to successful technology co-operation and transfer. Here we limit ourselves to saying that intellectual property rights should not become a barrier to the transfer of technology.

Sectoral industry technology approaches offer new market opportunities and create market access for technology investment in the developing world. The WBCSD proposal, for instance, calls for '*reduced import tariffs on certain technology components*' (WBCSD 2009: 17). This mainly serves the interests of industrialised countries, potentially sidelining the interests of host countries and communities that might seek, for instance, to develop clean energy technologies for poor communities (Newell, Jenner et al. 2009: 17). This potential for conflict calls for fair forms of **governance** of sectoral industry technology approaches that will make allowances for the national and local needs of developing countries, including the needs of the energy-poor, in sectoral technology approaches.

Sectoral industry technology approaches can make a real contribution to effective global GHG mitigation, if they are embedded in a strong international incentive framework; if they produce measurable, reportable, and verifiable results; and if they are supported by domestic policies. Large-scale investment in low-carbon technologies depends on the provision of sufficient **incentives**.<sup>16</sup> Current industry proposals rely heavily on the CDM as an incentive to engage industries in developing countries in technology co-operation and/or target setting (WBCSD 2009). Without providing a full assessment of the CDM, we would draw attention to two problematic issues regarding **international off-setting**. First, the CDM has failed in terms of its effectiveness, mostly because of the lack of additionality in many CDM projects (Schneider 2007),<sup>17</sup> and because only a few projects invested in a low-carbon energy infrastructure (Wara 2007). While a substantially reformed CDM could provide some incentives to developing countries, the overall generation of Certified Emission Reductions (CERs), i.e. credits generated through the CDM, is limited. Second, the goal of keeping the increase in global average temperature well below 2 degrees requires substantial emission reductions *in developed countries*, which is also a fair means of burden-sharing, given historical responsibilities for creating global climate change. What is more, ensuring high-quality CDM credits through a reform of the CDM will create a bottleneck for the supply of CERs (Wara and Victor 2008). For these reasons, additional mechanisms for providing technology finance in the developing world, such as a climate fund, are key to scaling up technology development and transfer through sectoral

approaches (*ibid.*).

Furthermore, the effectiveness of sectoral industry technology approaches hinges on their ability to **measure, report, and verify** (MRV) emission reductions to ensure that they actually contribute to global GHG-emission abatement. With MRV requirements applying both to mitigation actions *and* to corresponding financing arrangements, mitigation efforts in the context of sectoral industry technology approaches could play an integral role in the NAMAs of developing countries. In sum, sectoral technology approaches proposed by business offer valuable options for engaging the private sector in scaling up the development and transfer of low-carbon technologies. In order to ensure that such agreements are fair and effective, a number of challenges related to legal issues, governance, incentives, and MRV provisions need to be addressed carefully.

## Conclusion

The global business community has a crucial role to play in combating global climate change and in implementing the transition to a low-carbon economy. The technological, financial, and human resource power of the private sector needs to be applied in a way that promotes a fair deal between the developed world and developing countries and that effectively contributes to mitigating global GHG emissions and keeping global warming well below 2 degrees. The WBCSD and other industry groups have proposed global sectoral industry approaches as a key instrument for private-sector engagement in the context of a post-2012 climate framework. Industry in the developed world has a powerful interest in ensuring a strong flow of CDM credits, creating a level playing field, and improving access to emerging markets. These goals partly conflict with the national needs of developing countries and with requirements for a fair and safe climate regime. Therefore voluntary sectoral target setting suffers from significant deficiencies, whereas sectoral industry technology co-operation offers a potentially powerful lever for technology development and transfer, provided that a number of challenges are addressed. In sum:

- Voluntary sectoral target setting does not represent a fair and safe approach to engaging industries in developed and developing countries. Most importantly, it would not result in the effective enforcement of targets in developed countries, while it would potentially impose an undue burden on industries in developing countries.
- Industry in developed countries needs to be subject to absolute targets, set and enforced by national governments. Energy-intensive industries in developing countries should be incentivised to reduce greenhouse-gas emissions in the context of nationally appropriate mitigation actions.
- Sectoral industry technology co-operation offers a route to engaging the private sector in both the developed and the developing worlds, although careful attention needs to be paid to the details of such agreements.
- Challenges vis-à-vis sectoral industry technology co-operation include the need to create a legal framework on intellectual property rights that will allow

developing countries access to the technologies they need for low carbon development; the need for fair and representative forms of governance; the need for reform of – and incentives beyond – the Clean Development Mechanism; and the need for adequate provisions for measuring, reporting, and verifying emission reductions and corresponding financial flows from industrialised countries. Only by addressing these issues can the international community be assured that sectoral industry technology co-operation contributes effectively to nationally appropriate mitigation actions.

The challenges of sectoral industry technology co-operation call for action from business and policy makers to ensure that sectoral approaches are embedded in an equitable and effective policy framework. Many details need to be identified and agreed if the opportunities are to be seized and the challenges managed. The World Business Summit on Climate Change in Copenhagen in May 2009 provides a key opportunity to take action on sectoral approaches and the official climate agenda more generally. The business community must assume a strong leadership role by addressing the details of sectoral industry technology co-operation, and by promoting policy principles for a fair and safe global climate agreement. Thus the World Business Summit on Climate Change will be able to send a powerful and credible message to the official negotiations that business is ready to support and implement a new climate deal.

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## Notes

- <sup>1</sup> The term 'post-2012' refers to a future climate regime following the first commitment period of the Kyoto Protocol, which ends in 2012.
- <sup>2</sup> Since the term 'co-operative sectoral approaches' encompasses a large number of competing proposals, this paper refers to the WBCSD proposal as 'global sectoral industry approaches'.
- <sup>3</sup> The Japanese government has been the most outspoken advocate of sectoral targets for developing countries.
- <sup>4</sup> The discussion on sectoral approaches occurs within the UNFCCC negotiations and in other processes such as the so-called Warsaw Dialogue on sectoral approaches. The Warsaw Dialogue was initiated at the Warsaw Summit on Sectoral Co-operation, hosted by the Polish government in November 2008 in Warsaw. Apart from proposals for global sectoral industry approaches, participants have proposed sectoral targets for developing countries and sectoral forms of public-private technology co-operation. For a comprehensive taxonomy and overview of sectoral approaches, see Meckling and Chung 2009.
- <sup>5</sup> <http://blogs.shell.com/climatechange/?cat=6>, accessed 29/04/09. See also the speech of Jeroen van der Veer, Shell's CEO, at the World Economic Forum 2009: [http://www-static.shell.com/static/media/downloads/speeches/jeroen\\_commentary\\_january\\_2009.pdf](http://www-static.shell.com/static/media/downloads/speeches/jeroen_commentary_january_2009.pdf), accessed 07/05/09.
- <sup>6</sup> This paper offers only a preliminary analysis of proposals for global sectoral industry approaches, as many details of these proposals still need to be spelled out.
- <sup>7</sup> This advocacy work was preceded by a side event of the WBCSD at COP-14 in Poznan, which was dedicated solely to sectoral approaches.
- <sup>8</sup> The CSI convenes 18 major producers, accounting for about 30 per cent of global cement production.
- <sup>9</sup> Absolute emission-reduction targets require a reduction in overall emissions, whereas intensity targets ask for the reduction of emissions per unit of output.
- <sup>10</sup> The CCAP suggests sectoral 'no-lose' targets for energy-intensive industries in developing countries. These would receive credits for compliance, while not being penalised for non-compliance.
- <sup>11</sup> Formerly named International Iron and Steel Institute.
- <sup>12</sup> <http://www.asiapacificpartnership.org/english/default.aspx>, accessed 25/04/09.
- <sup>13</sup> In this context, benchmarks are standards of best practice with regard to the efficiency of technologies.
- <sup>14</sup> 'China's Views on Enabling the Full, Effective and Sustained Implementation of the Convention through Long-term Cooperative Action Now, Up To and Beyond 2012', 09/18/08, [http://unfccc.int/files/kyoto\\_protocol/application/pdf/china\\_bap\\_280908.pdf](http://unfccc.int/files/kyoto_protocol/application/pdf/china_bap_280908.pdf), accessed 15/12/08.
- <sup>15</sup> Targets and standards are considered policies for technology pull because they create demand for low-carbon technologies, pulling these into the market. Measures to support technology development and deployment, conversely, create a supply of low-carbon technologies, thus pushing them into the market.

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<sup>16</sup> The issues discussed here with regard to incentives apply equally to voluntary sectoral target setting. Proposals for this group of sectoral approaches also rely strongly on CDM credits as incentive mechanisms.

<sup>17</sup> Schneider (2007: 44) estimates that for about 40 per cent of CDM projects 'additionality is unlikely or questionable'.

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