

Focus: climate change

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Carbon conundrum

As the world moves forward from the international climate change negotiations held in Copenhagen last December, steel and metal companies are left to wonder what the eventual outcome might mean for them

The UN climate change conference in Copenhagen in December was widely regarded as a failure since it did not set agreed and legally binding targets for greenhouse gas emission reductions after the 'Kyoto period', which runs to the end of 2012. Even so, industrialised countries are adding to a list of quantified emission reductions by 2020, in pledges to be included by January 31 in the Copenhagen Accord. Some developing countries are stating their own voluntary targets on the same schedule.

Following Copenhagen, the EU's 'cap and trade' emissions trading scheme (ETS), which covers industries responsible for about 45% of total CO₂ emissions from this region, remains the only mandatory scheme in the world that covers metals industries. ETS Phase III in 2013-2020 will expand its scope to cover all metals, not just iron and steel. The target is at least a 20% cut in total EU emissions by 2020. While there are mandatory schemes elsewhere, these do not directly encompass metals so far.

Carbon trading is established and growing. The global carbon market saw 82bn tonnes of CO₂ equivalent (CO₂e) traded, a rise of 68% on 2008, according to Carbon Market Research. This was worth €94bn (\$136bn), only a slight rise on 2008's €92bn, owing to a recession-induced fall in the weighted-average world carbon price from €18.87 in 2008 to €11.40 in 2009. These totals only account for the mandatory markets. They do not include the voluntary market's trading of Verified Emission Reductions (VERs).

Of the carbon traded in 2009, the biggest slice was in the EU ETS, with its EU Allowances (EUAs, each

equivalent to 1 tonne of CO₂). This was responsible for trading 56bn tonnes, or 77% of the global value.

Ineffective system?

The World Steel Association (Worldsteel) believes that, in its current form, the EU ETS will not reduce climate change, because:

- The allocation of emission caps and allowances by member states is arbitrary and unrelated to plant performance. This not only reduces external competitiveness, but also distorts it within the EU.

- A regional scheme such as the EU's will lead to "carbon leakage": a transfer of capacity to outside the legislative area, thus failing to cut, and maybe even increasing, emissions.

- The system does not reward improvements, since the most efficient are not allowed to expand and the least efficient to decline.

- The scheme leads to huge increases in electricity costs, with power companies passing on the equivalent costs of freely-allocated CO₂ allowances to their customers.

Other steelmaking nations and regions where similar schemes might apply are taking note. The USA, for example, has no national emission legislation, but its steel sector is prepared for its likely introduction, says Larry Kavanagh, vice-president, environment & technology, for AISI: "At some stage, we will have a mandatory climate policy. But it might not be cap-and-trade – alternatives are under consideration," he says.

The great problem, says Kavanagh, is how to reduce emissions effectively, but still maintain a level playing field, not only between countries but between different industries as well. A one-size-fits-all approach

will probably not work – some innovative system is needed that will satisfy most players, he notes.

Stig Schjølset, senior analyst at Oslo-based consultants Point Carbon, agrees with the US outlook: "There is little probability of a cap-and-trade system in the USA this year. But some kind of legislation is likely – maybe including subsidies for using renewable energy."

Whether via legislation or not, many of the world's steelmakers are setting their own targets. ArcelorMittal, for example, has set a target of reducing CO₂ emissions by 170 kg/tonne of steel by 2020, compared with 2007. This is equivalent to an 8% absolute reduction. The company says it hopes that its investments in this area will be supported by "government backing for carbon capture and storage technology, by effective carbon markets and by robust policy frameworks which cover all the main steelmaking countries."

Benchmarks essential

For any scheme to work, the industry needs accurate data on emission levels from individual plants, so each can judge their performance against an international benchmark and take steps to improve it. Worldsteel is now in its second year of collecting such data – both from members and non-members – and will produce an internal report on emissions from blast-furnace and EAF steelmaking. So far the scheme covers about 40% of global steel by volume. Every contributing plant can compare its confidential data on a global scale.

"We can then support our members on how they can best

reduce emissions, taking into account process configuration or raw material," says Henk Reimink, Worldsteel's general manager, technology & environment. To support a common approach, an ISO standard for measuring emissions would be the most useful, and Worldsteel has just started this process, but it will take some years to complete, he adds.

Eurofer, representing Europe's steelmakers, is also benchmarking to determine CO₂ intensity: phase 1 examines sintering, cokemaking and hot metal operations from 2007 and 2008 data. This has been done by an independent third party, Phillip Townsend Associates.

A benchmarking curve has just been published for EU hot metal producers, and data for sinter and coke are expected at the end of January. The results give an industry average for hot metal of 1,630 kg CO₂/tonne, with a benchmarking value (the average for the best 10% of operations, according to the EC directive for those entitled to free allowances) of 1,476 kg CO₂/tonne.

"This benchmarking is what should be done worldwide, but there has been no international agreement on methodology for this. Moreover, there was no international [emissions] monitoring system established at Copenhagen – this should be an essential first step," says Axel Eggert, Eurofer's director of public



The impact of carbon price on power costs remains a core concern

All metal producers need to stay vigilant

While the consensus view from Copenhagen is that metal businesses need not change their carbon strategies immediately, they need to closely monitor further negotiations during 2010.

"It came out clearly at Copenhagen that the negotiations were about much more than carbon: they were about trade," says Accenture carbon markets lead, Mauricio Bermudez-Neubauer. It seems the underlying trade talks will need to be settled before further progress can be made on the carbon negotiations within them.

"The expectations of a legally binding agreement at Copenhagen were artificial without more national or regional cap and trade schemes already being up and running before the meeting," says Carbon Markets & Investors Association director Miles Austin.

As negotiations continue, Accenture believes that the most probable outcome will be agreement on binding long-term targets combined with a collection of different regional intermediate targets, policies and frameworks. These will result in the need for further efficiency improvements for carbon-intensive industries like steel and metals.

Ilona Millar, senior associate, environmental markets group, Baker & McKenzie, warns that in some areas where there have been expectations that an Emission Trading Scheme would be launched, there could now be different regulatory approaches taken. "They might find they are looking at other interim regulations." The US EPA has been looking at a variety of options, for example, she points out.

"COP15 has not changed

anything, but there is now an increased risk of a policy shock in the medium term," says David Sanders, partner with strategy consultants Irbaris. The meeting has maximised uncertainty about what will happen and when. Taking aluminium as an example, he adds: "This is the worst case outcome for smelters that use fossil fuels that need to make long-term investment decisions – they don't know how to factor in the future price of carbon."

Recent proposals by the so-called BASIC countries for further regular rounds of talks before the next UN Framework Convention on Climate Change Meeting (COP-16) in Mexico at the end of this year may yet accelerate progress. "It is still too early to say for sure, but these are bullish drivers for cap and trade schemes on a 3-5 year timeframe," says Bermudez-Neubauer. The USA, Japan, Australia, South Korea and Mexico are among nations considering such schemes.

Aluminium's lead

The aluminium industry claims to have a leading example of a voluntary global sectoral approach to greenhouse gas mitigation. Aluminium's voluntary global sustainability initiative covers the full aluminium life cycle.

The International Aluminium Institute (IAI) endorses a comprehensive global agreement of greenhouse gas abatement with emissions reduction commitments from all major emitting nations recognising common but differentiated responsibilities. However, it is concerned that some see it as an ideal sector for the introduction of a binding global sectoral agreement.

The IAI disagrees with introducing a form of obligatory intergovernmental transnational sectoral agreement, which it considers impractical due to the many jurisdictions involved and the need to cover all the various industries producing competing materials under the same regime. It says that sectoral agreements applied to a small number of industries could cause both inter- and intra-sectoral level distortions in the global market, impacting on competitiveness of the selected industries as well as causing carbon leakage.

Sectoral baseline crediting now being promoted instead of caps/constraints as a transitional measure to engage developing countries is a concept worth exploring, it says, but it is important that any baselines/benchmarks be set at levels to reward real performance improvements and do not constitute subsidies.

Millar says that global sectoral approaches made little headway during Copenhagen and that there are only draft provisions for sectoral approaches under consideration within the UN Framework Convention on Climate Change. The work needed to confirm how they would operate, or even exactly what they are, within a convention structured along national and regional boundaries and groupings is unfinished. "It will be hard to reach a comprehensive decision. If a sectoral approach is taken, how would you convert that to tradable credits, or link it to the clean development mechanism (CDM)?"

Austin is sceptical about the concept of sectoral trading or crediting between national

governments working, but believes a sectoral approach for the CDM might have a better chance. He describes CDM and Joint Implementation (JI) as the glue connecting up existing and mooted carbon trading schemes, with CDM providing a common currency between them. "We are a long way off from a global sectoral scheme operating," he says.

The USA's Aluminium Association supports the IAI's voluntary global sectoral approach and has three of its own provisions that it sees as key to workable climate legislation. The first is obtaining credit for early emission reductions made during the 1990s through the EPA's Voluntary Aluminium Industrial Partnership agreement. The second is a desire to be issued with free or discounted emission allowances, under a cap and trade scheme, or other credits, under any other emission schemes yet to be brought in, to offset increased energy costs for the aluminum industry arising as a consequence of those schemes. And the third is support for recycling as a means to reduce greenhouse gases.

While monitoring the twists and turns of international negotiations, individual companies have to find practical ways to cope with continuing carbon uncertainties. Accenture provides a checklist: measure risks to emissions exposure and opportunities for making cash out of allowances regimes; manage emissions assets and liabilities to take advantage of different allowance systems around the world (although this requires global and enterprise-wide capability to achieve); and assess and implement improvements in new processes and practices.

affairs. "This was one of the biggest disappointments of Copenhagen."

Eurofer is committed to keeping the EU's overall reduction target at 20% and to maintaining the provisions for free allowances for sectors at risk of carbon leakage until an international agreement secures equal treatment with the

steel sector worldwide.

China has committed to reducing its CO₂ emissions by 40-45% per unit of GDP by 2020, but as its GDP is expected to grow by an average of 8% annually in this period, this still leads to it emitting 75-90% more CO₂ by 2020, says Eurofer. This equates to an extra 5.5bn-6.8bn tonnes, or more than the total EU

emission now, it points out.

One year after Copenhagen, countries meet again in Mexico in December 2010 to try to thrash out a binding international agreement. Action in the USA is vital for this, says Schjølset: "If there is no legislation in the USA, it will be difficult to get any agreement in Mexico."

Meanwhile, steel companies which now have surplus free carbon allowances may be holding on to them for a while, as the carbon price is expected to rise as the world emerges from recession, says Schjølset. This would be prudent as many steelmakers will be short of allowances from 2013 onwards, he adds.