Designing it right

Joe Nation, co-author of California's landmark global warming legislation, and **Roger Noll** give their advice to the state's regulators as they grapple with crucial elements of the emissions trading scheme's design

Two years ago, California enacted AB32, the Global Warming Solutions Act, becoming the first US state to set a greenhouse gas (GHG) reduction target. As California develops its cap-and-trade programme, it faces both opportunities and challenges.

The primary opportunities include taking the lead in designing an effective emissions trading market and creating new industries based on energy conservation and renewable energy. The primary challenges involve developing an emissions market that not only works, but that can easily be expanded to incorporate other states and even nations. With the federal government nearing the adoption of an effective GHG control programme and with the EU already committed to cap and trade, California must act quickly – and wisely – if it hopes to become a leader in the field.

There are three key market design areas that the California Air Resources Board (CARB) must get right as it designs its market over the next two years, or California's experiment will fail to achieve its objectives. These involve linkages to a federal and other market systems, the allocation of carbon allowances, and the use of offsets.

Linking California's market to a federal programme or other carbon markets (ie, allowing seamless transactions) could prove harmful to the California economy – and even bring fewer environmental benefits – if other jurisdictions do not adopt similar policies. In short, a more stringent California cap after a federal system is implemented makes neither economic nor environmental sense. It would subsidise the rest of the US, resulting in higher costs for zero environmental benefit.

The best possible outcome is that California and other jurisdictions adopt the same emissions reduction goals, market design, and monitoring and enforcement systems, and fully integrate emissions trading among them. President-elect Barack Obama's November pledge to the Governors Global Climate Summit seems to mirror California's goals, in a promising sign that this economic and environmental harm can be avoided.

The second issue facing CARB is perhaps the most contentious. Emissions allowances can be distributed to firms from the regulatory body in two ways: for free, or sold through an auction. From the perspective of economic efficiency, the most desirable form of emissions market is one in which a large fraction of allowances (perhaps all) are auctioned. An auction market has low implementation and administrative costs, conveys clear prices to emitting firms, eases enforcement because it creates a comprehensive current list of emissions allowances and minimises the likelihood that anyone will obtain undue market power in the market for emissions.

Nevertheless, free allocation of some or all allowances imposes lower financial costs on industries that emit GHGs and, as a result, can have the benefit of reducing political opposition to the programme by GHG emitters, and make sufficiently stringent emissions targets more acceptable. Consequently, the most attractive policy is likely to distribute at least some emissions permits for free initially, but to quickly increase the use of the auctions in the future.

There are three key market design areas that the California Air Resources Board must get right: linkages, allocation and offsets

A common concern is that auctioning allowances will cause firms to pass costs to consumers. However, economic research on emissions markets concludes that the effect on prices of consumer goods is the same regardless of whether tradable emissions permits are allocated for free or via an auction. In addition, auctioning allowances can generate substantial revenue for the government, which can be used to soften the prime impacts on low-income consumers.

Finally, CARB must determine the role of carbon offsets – that is, credits for emission reductions that take place outside either the regulated industries or the geographic area. The use of offsets allows emissions within the cap to increase beyond the limits of the regulation as long as compensating reductions are made outside the cap. Frequently discussed sources of offsets include biological sequestration of carbon (for example through reforestation), geological sequestration of carbon (for example through storage of carbon dioxide in underground reservoirs), or destruction of methane and other greenhouse gases from landfills, coal beds or industrial processes.

CARB is facing tremendous political pressure to limit offsets, and that pressure should be resisted. Problems associated with effective implementation of an offset programme are important and challenging, but they are outweighed by the potential benefits from including offsets in California's programme. As the offsets market matures, purchasers will increasingly demand higher quality offsets and, as a result, this demand will impose significant discipline on the US domestic offset market. As long as offsets are certified and the process is transparent, CARB should include them.

Including offsets brings another benefit in terms of the participation of developing countries – especially India and China – in a worldwide programme. The creation of offsets in these and other developing countries has traditionally been seen as a positive means by which to involve these countries in reducing their emissions.

It is important to create clear expectations from the beginning regarding the longer-term evolution of the cap-and-trade programme (especially to these developing countries), and the need to increase the scope of the cap both to new geographies and new sectors.

Joe Nation is a board member at the Bipartisan Center for Research and Policy (BCRP) and a lecturer at Stanford University. Nation was also principal co-author of AB32. Roger Noll is a BCRP board member and a senior fellow of the Stanford Institute for Economic Policy Research (SIEPR).

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