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the California climate puzzle

There's more to California's action on climate change than cap-and-trade

Words: Gary Gero



When the California cap-and-trade programme fully launches on 1 January, 2013, it will create the second largest carbon market in the world. But, even so, a carbon market is just one puzzle piece among many that the US state of California is pursuing to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020.

And, it is not even the biggest piece within California's emission reduction puzzle, although it may well be the most visible and perhaps the most controversial. Fortunately for California, the cap-and-trade scheme is the most elastic piece, since it can expand to make up for emission reduction shortfalls from the other strategies. So, let's take a look at all the pieces and how they fit together.

Given the historic air pollution challenge California has faced, as well as precedent-setting leadership in

commonly known as the Pavley standards for State Senator Fran Pavley, who authored the legislation.

The Pavley standards are expected to achieve emission reductions of over 30 million tonnes of carbon dioxide equivalent (MtCO_{2e}), resulting in the single largest piece of California's climate puzzle. Notably, the state's actions have led to the adoption of a set of coordinated national standards for motor vehicle emissions that will result in improved efficiency and reduce GHG emissions nationwide. More efficient vehicles mean lower operating costs for consumers, so this strategy has clear economic benefits as well.

In addition to the Pavley standards, California is also seeking to reduce by 10% the carbon intensity of vehicle fuels used in the state through the Low Carbon Fuel Standard. This would result in additional emission reductions of 15 Mt of CO_{2e}. While currently held up by a legal challenge, this is clearly a significant piece of the puzzle that if lost would have to be made up elsewhere (see *Carbon Trading*, March 2012, pages 14–16).

California has also taken further steps by also addressing the land use-transportation dilemma. By state law, cities are now required to craft strategies that would improve the way they design and develop their communities to reduce congestion and traffic.

California has a long and successful history in using energy efficiently and promoting clean, renewable energy. Since Jerry Brown's first turn as governor in the 1970s, the state has consistently been on the leading edge of the energy revolution and that leadership continues today. So it is no surprise that a key strategy in achieving its climate change goals is to dig deeper into the energy efficiency well.

The state is looking at new standards for buildings and appliances, combined heat and power strategies, and a range of other initiatives that are assisted by

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addressing that task, it has long held a unique and powerful privilege under the federal Clean Air Act to adopt emission standards for vehicles sold in the state. Using this power, California has led the country in clean car standards.

This authority underpins a key strategy in meeting the state's climate change goals, which is the California Light Duty Vehicle GHG Standards. They are more



policy tools, such as rate decoupling and public goods charges. All told, these efforts are expected to result in reductions of more than 26 Mt of CO₂e and will result in billions of dollars of savings for California consumers.

The state's Renewable Portfolio Standard was established in 2002 and has been accelerated and expanded by both executive order and state law ever since. As a result, California now requires that by 2020 one-third of its energy come from qualified renewable resources, such as solar, wind, geothermal, small hydro, biomass, landfill and digester gas and other sources.

Not only will new renewables result in GHG reductions savings of over 21 Mt of CO₂e, but it has also helped make California the leader in clean energy technology. For example, California received 60% of all clean energy venture capital investments made in 2009 in North America – more than all other states combined – leading to the creation of the new energy economy and green jobs.

Getting to 1990 emissions levels will require contributions from across the economy, so California is also getting reductions from a mixture of strategies. These include greater levels of recycling and waste diversion, improvements to port operations, increased industrial efficiencies and addressing high global-warming potential gases. All told, these reduction efforts and a reassessment of business-as-usual (BAU) will leave about 18 Mt of CO₂e left to be achieved by the cap-and-trade programme by 2020.

The cap-and-trade scheme will cover all emission sources that emit more than 25,000 t of CO₂e a year, which is about 600 facilities under the control of about 350 companies. The programme will be implemented in phases with the first starting in 2013 and covering electric utilities and large industrial facilities. Emissions will decline by about 2% a year in 2013 and 2014, leading to steeper reductions as the system progresses.

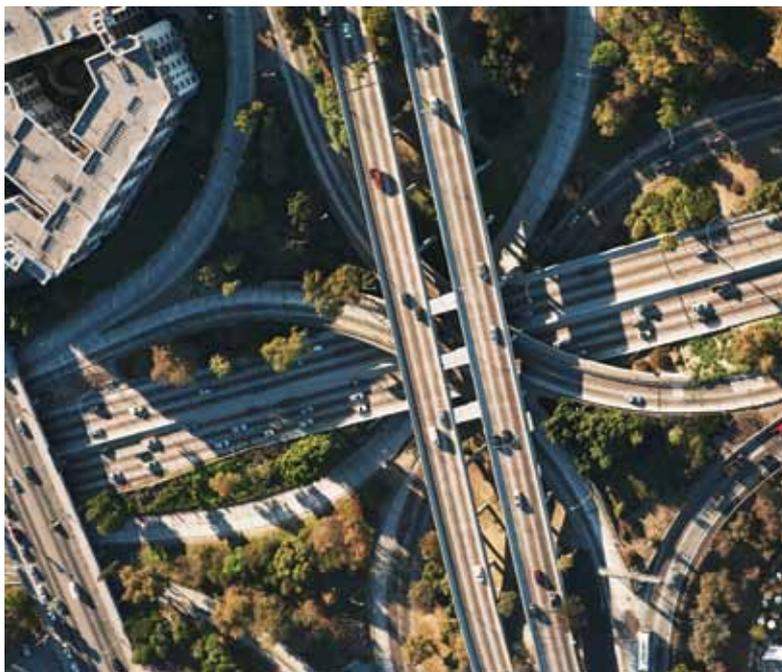
In the second phase, which begins in 2015, the scheme expands to cover the distributors of natural gas and transportation fuels. From 2015 to 2020, emissions will decline at about 3% a year to get to the target.

In general, allowances will initially be distributed relatively freely. Over time, however, the programme will move toward greater reliance on auctions. Those subject to compliance will be required to surrender a mix of allowances and offsets at the end of each year with full true-ups occurring at the end of each of three compliance periods (2013–2014, 2015–2017 and 2018–2020).

Offsets are a major component of the programme's cost containment and flexibility strategy, along with the ability to bank allowances and the establishment of a strategic reserve. California has adopted four Climate Action Reserve protocols for compliance use and is eyeing additional offset types to expand the opportunities for generating carbon credits (see pages 18–21).

Importantly, the agriculture and forestry sectors in California are engaged to reduce GHG emissions not by regulation, but by being suppliers of offsets. This has allowed the state to reach into all segments of the economy to achieve its emission reduction goals without having to develop direct, prescriptive regulations.

As noted above, if the mix of puzzle pieces fails to



achieve the emission reductions that are projected or if BAU emissions rise, the cap can be tightened to ensure that California reduces its emissions to the 427 Mt limit by 2020. This ability to adjust the target to adapt to the actual implementation and achievements of each of the other puzzle pieces is what makes the cap-and-trade programme the most elastic and, in many ways, the most powerful piece of the climate puzzle.

California knows full well that it cannot solve global climate change by itself. It also knows that its actions alone are not sufficient to protect it from the local impacts of extreme weather events, water scarcity, increased and more virulent wildfires, rising sea levels and agricultural disruption. So, the state is working to make its climate puzzle the foundation for broader action. The first step in this strategy is to work with other states and regions to create regional efforts, such as the Western Climate Initiative (WCI), North America 2050 and Regions of Climate Action.

Through the WCI, California and Quebec have signalled that they will operate a joint and linked cap-and-trade programme from 2013, with the goal of expanding this market to other Canadian provinces, such as Ontario and British Columbia, shortly thereafter. By demonstrating that cap-and-trade can be an effective and cost-efficient approach, the WCI hopes to build out and link to other systems to create a bottom-up system that drives international action.

Finally, by simultaneously demonstrating leadership in the fight against global climate change, while building the new, clean energy economy with good, green jobs, California is doing what the state has always done best: creating the future. And that is a puzzle we all need to work together to solve. ●

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