A gathering of black swans

With federal cap-and-trade legislation off the table, many US emitters perceive their exposure to climate policy to have decreased. But climate risks – and business opportunities – have in fact risen, argues Mark Trexler

When President Obama took office in January 2009, the key question for climate policy advocates was whether the US would have comprehensive climate change legislation in place in time to influence the UN climate summit in Copenhagen in November. As illustrated in Figure 1, it was widely expected at the time that a federal cap-and-trade regulatory policy would play an increasingly important role in driving carbon management efforts in the US. While the prospect of climate policy action ahead of the Copenhagen talks faded quickly, hopes remained high for national legislation during 2010. But even while Russia burned and Pakistan drowned, 2010 has not been kind to US climate policy.

The US now faces the real likelihood that national cap-and-trade legislation is dead for at least the next four to six years. This conclusion has to do with expected Democratic losses in the Senate in 2010 and 2012 and growing uncertainty about the presidential elections in 2012. With a smaller Democratic majority in the Senate, the prospect for federal cap-and-trade legislation, or 'cap and tax' as it was so effectively portrayed by critics, has rapidly receded. It is not unlikely that, after almost 15 years of effort, we have seen the last nail go into the coffin of national cap-and-trade policy in the US.

What are the implications? This is a key question. Many people assume we can look to state and regional policy to step into the breach, keeping emissions caps and carbon markets alive at the regional level. Climate change initiatives at the state level, however, are more uncertain than ever. California's AB32, which would establish economy-wide carbon caps underpinned by an emissions trading system, faces multiple challenges. First, it could be effectively abolished through a voter referendum in November. Assuming the law survives that challenge, AB32 could be delayed and effectively gutted if Meg Whitman, the Republican candidate, wins the governor's race in November and proves true to her commitment to put the legislation on the back-burner.

Climate change policy will almost certainly be characterised by 'black swans,' – unforeseen events with big effects

Even if the Democratic candidate Jerry Brown wins the governorship, we will almost certainly see AB32 materially toned down to reduce its impact on taxpayers and ratepayers. DNV's modelling of California's future carbon market suggests that AB32 could easily result in carbon prices exceeding $100/ton. Prices at that level would not be politically viable, so AB32 is unlikely to be implemented as originally envisioned.

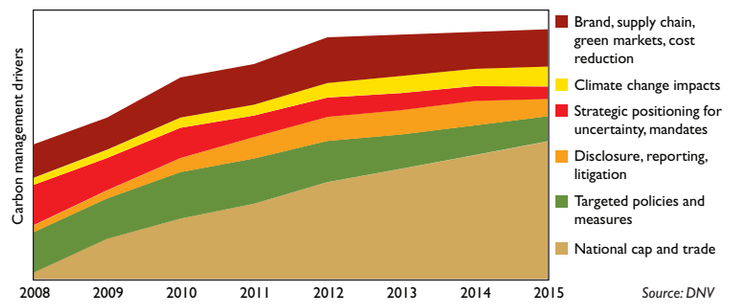
The situation with other state and regional cap-and-trade measures is no less complicated. Many states face major economic problems, and expensive new climate change mitigation mandates are not likely. Many had looked to the passage of federal cap-and-trade legislation to take policy pressure off state and regional initiatives. Indeed, contrary to the notion that state efforts will backfill for policy stalemate at the national level, there is a real risk that state and regional cap-and-trade systems will themselves be delayed or weakened. That is not to say that there won't be many efforts pursued at the state level and labelled as climate change mitigation. But it has always been understood by environmental strategists that the role of state initiatives has historically been to foster, not take the place of, federal action.

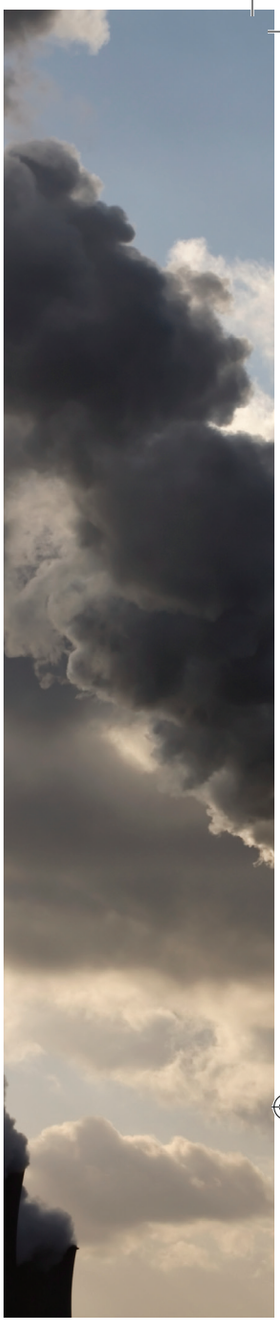
The policy picture painted above appears a bleak one. That said, notwithstanding the new policy realities at the state and federal levels, and notwithstanding six months of adverse press coverage relating to Climategate (where climate researchers were accused of manipulating climate data, before being exonerated), the climate change issue is not going to disappear as a public policy issue. It really can't – not in the face of the science, not in the face of a growing list of global weather events that are consistent with scientific predictions of the effects of climate change, and not in the face of a large and committed advocacy community.

Human society today is acting a lot like the metaphorical 'frog in warming water' – as a society we can't seem to link climate risk (water that will eventually boil) with climate action (turning down the heat while there's still time). As a result, the gap between climate science and climate policy is larger today than it ever has been before, and it looks likely to grow even larger.

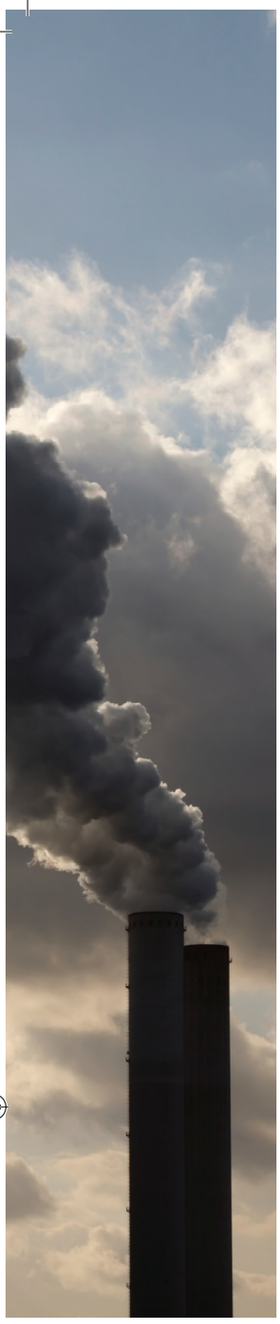
At some point, however, human society will start thrashing wildly around the proverbial climate change pot, and we will see all sorts of mitigation and adaptation mandates. Exactly when that will happen, what event(s) will set the thrashing in motion, and how violent the thrashing around the pot will be, are difficult variables to predict. Indeed, climate change policy

1. Carbon management drivers, as of 2008–09





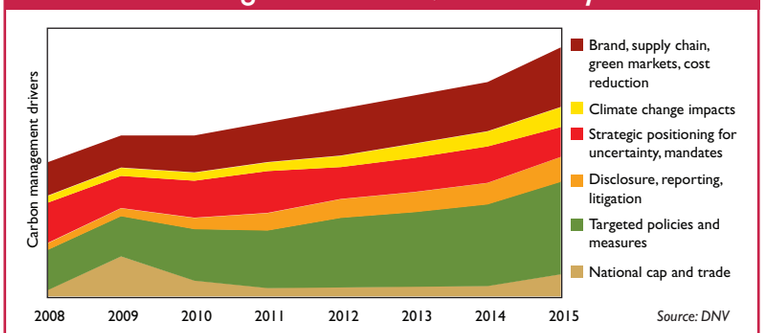
Out of the woods? Or is there now more regulatory risk for US coal-burners?



will almost certainly be characterised by 'black swans' – unforeseen events with big effects. The implication is that federal climate policy could return unpredictably and with a vengeance. It is not outside the realm of possibility, for example, that a material carbon tax could re-enter the policy agenda.

However, it is also worth considering how climate change concerns will be manifested in the near term. The simple answer is, through means that don't require 60 votes in the Senate. We are likely to see a wide variety of policy carrots and sticks that promote greenhouse gas (GHG) emissions reductions. This emphasis on policies and measures won't displace voluntary efforts of many kinds, including the growing focus on reducing the carbon footprint of corporate supply chains. But, in terms of policy, we are almost certain to see a fundamental reorientation from a national market mechanisms model to a policies-and-measures model. Figure 2 shows (again, subjectively) how climate concerns may translate into carbon drivers for the next several years. It's a very different picture than was widely anticipated just two years ago.

2. Carbon management drivers, as of today



Source: DNV

The category of policies and measures encompasses a very wide range of potential budgetary, administrative, and even regulatory measures intended to mandate or incentivise specific emissions reductions. Examples include:

- expansion of renewable energy mandates;
- development of national building standards;
- tightening of national appliance efficiency standards;
- implementation of the Environmental Protection Agency's authority under the Clean Air Act;
- tighter environmental regulation of coal-fired power plants;
- incentives to retire particular coal plants;
- implementation of new emissions rules for maritime emissions sources;
- tightening and expansion of the vehicle fuel economy standards;
- larger subsidies to nuclear energy;
- larger subsidies to develop carbon capture and storage technologies; and
- expanded technology innovation subsidies.

These are just a few of the emissions reducing policies and measures, many already existing or with existing legislative authority, that we are likely to see. What's clear is that the policies-and-measures approach is a fundamentally different policy model for trying to mitigate climate change. Instead of trying to correct the underlying economic externality that GHG emissions represent by pricing carbon, policies and measures use more conventional command-and-control levers or financial incentives to accomplish emissions reductions.

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Some analyses are concluding that policies and measures could actually track with the reductions that would have been required under recent cap-and-trade legislative proposals, at least up to 2020. This has as much to do with the relatively weak nature of the 2020 commitments under these proposals as with the effectiveness of policies and measures. Under cap-and-trade legislation, the large majority of emissions reductions were back-loaded to 2020–50. It's hard to see how policies and measures could get us anywhere close to the 80% reduction in emissions called for in some legislative proposals. Because policies and measures don't introduce an explicit carbon price signal into the economy, they miss many significant emission reduction opportunities, and fail to broadly incentivise technology innovation.

Another implication of the policies-and-measures approach is that the costs associated with achieving a unit of emissions reductions are likely to be considerably higher than under a cap-and-trade programme. Instead of using a price mechanism to encourage least-cost reductions, the policies and measures approach relies significantly on political viability to pick emission reduction options. Many politically viable programmes turn out to be expensive means of reducing emissions. For example, solar energy incentives can translate into a net carbon cost as high as \$500/ton of carbon dioxide (CO_2) displaced. Like many subsidies, no one ever sees these costs in their entirety; they are spread across a variety of programmes. Solar is likely to sit at the upper end of such costs, but we know that other large-scale renewable energy subsidies can easily translate into an effective cost of \$100–200/ton of CO_2 displaced. This compares to the \$15–20/ton projected for cap-and-trade programmes.

US climate change policy and markets are at a crossroads. A policies-and-measures-based approach to climate change mitigation will look very different to the recently anticipated cap-and-trade approach. It, too, will create risks and opportunities, and create winners and losers (although a different set of winners and losers).

Interestingly, there is little doubt that many companies perceive their climate change risk to be lower today than it was 18 months ago, specifically because of the failure of cap-and-trade policy. One can effectively argue, however, that this conclusion is misplaced. In reality, while the uncertainty (and risk) surrounding cap-and-trade policy may have decreased, corporate uncertainty surrounding climate change policy as a whole has actually increased. That's because the absence of a comprehensive national policy framework will spawn a growing proliferation of policy carrots and sticks at all levels of government, and make the policy process more susceptible to black swans as well.

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Because policy uncertainty equals business risk, and because business risk generates opportunity, business risk and opportunity associated with climate change policy is actually greater than ever. The likelihood and potential disruptions associated with climate change black swans will most likely grow as long as the gap between climate science and climate policy continues to expand. The smart players will keep binoculars handy to see the black swans coming. **EF**

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