

A minimum price for carbon will save us money

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*Until future carbon prices are assured, banks and investors will be reluctant to add to power capacity, writes **John Daley**.*

In finalising the design of Australia's carbon trading scheme, two challenges are emerging. First, we need to keep the lights on, particularly if demand for electricity continues to increase. Second, the carbon trading scheme will increase government debt.

According to the latest Treasury budget forecasts, the scheme will be a net cost to the Australian Government in every year until 2016 due to the costs of transitional assistance (commonly called "compensation"). By setting a floor price for carbon permits we could improve confidence that new electricity supply will be built, but reduce payments to electricity producers.

The link may not be obvious, but failure to join the dots could cost Australia billions in interrupted electricity supply or unnecessary government payments.

Picture an electricity generator thinking about whether to build a lower-emission power station such as a gas-fired power plant. Building depends on the future revenue being greater than the cost. The future revenue depends on the future carbon price – the higher the better. But if the future carbon price is uncertain, you discount the value of the future revenue. A 50:50 chance of earning \$100 or \$0 is worth less than \$50.

People legitimately want to be paid for taking risk, and the more uncertain the future carbon price the deeper the discount.

The current design for a carbon trading scheme provides little certainty about the bounds of carbon prices more than a few years out – and it's the uncertain price in four or five years that matters for today's decisions about building future electricity supply.

An investor thinking about building a high emission coal-fired power plant faces the issue in mirror image: they are reluctant to build because of the possibility that a high carbon price will reduce the profitability of their investment. Indeed if carbon prices are uncertain but near the break-even points, it can be rational for the potential builders of both lower and high emission plants to wait on the sidelines until the uncertainty on carbon price is resolved, even though there is clearly not enough supply.

The real-life problem is even tougher. Bankers hate uncertainty. They prefer to lend to customers who have hedged away the risk. But carbon futures markets haven't developed, and there is no guarantee that there will be robust counterparties to bank on in the next few years.

Even if there are, the more uncertain the carbon price, the more expensive the hedge. There is a possibility that without a floor to carbon prices, lower-emission electricity generation won't be built in time unless there is direct government subsidy – which would somewhat defeat the ultimate purpose of a carbon pollution reduction scheme.

The public see the world differently to builders of electricity plants. The public (and governments) not unreasonably puts a very high premium on knowing that the lights will stay on. The real-world costs of interrupted electricity supply are far higher than the cost of building extra electricity generation.

We might approach this problem by “compensating” generators who promise to build more plants, preferably with lower emissions. But it’s an expensive solution. This isn’t really compensation at all: it’s a payment to ensure certainty of supply in a market that will be slow to add capacity if there is insufficient certainty about the future carbon price.

A study by the International Energy Agency investigated this very issue and found that price floors would help reduce the investment uncertainty associated with carbon trading and make supply more reliable at a lower cost.

A cap and trade scheme with a floor and ceiling on the price is a bit of a hybrid. But economic theory says that for a problem like climate change, hybrid schemes are superior to either a pure cap and trade scheme, or a pure carbon tax. No surprise then that a hybrid scheme is being proposed by lawmakers in the United States. And the European Commission has just proposed a tax on the significant number of carbon emissions that are not caught by their cap and trade scheme.

We have little to lose from setting a carbon permit floor price. The “worst” outcome would be that Australia would reduce its carbon emissions by more than we intended. This could only happen if reducing emissions turned out to be cheaper than expected.

And given that Australia is now emitting more carbon per head of population than any other country within the Organisation for Economic Co-operation and Development, it might not be a bad thing.

As the debate on a carbon emissions scheme intensifies, it might be time to put both a carbon floor price, and the quantum of “compensation” to electricity generators back on the table.

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