Australian National University

Crawford School of Public Policy
Centre for Climate Economics and Policy (CCEP)

The CCEP Australia Carbon Pricing Survey 2012: Policy uncertainty reigns but carbon price likely to stay

CCEP Working Paper 1206

5 July 2012

Frank Jotzo

Abstract

The inaugural Australia Carbon Pricing Survey elicits expectations about the future of carbon pricing from experts working for Australia's largest greenhouse gas emitting companies, the carbon finance and investment industry and selected other experts. The survey indicates pervasive uncertainty about the future of Australia's carbon pricing scheme, but also a strong expectation that carbon pricing will be a feature of Australia's economic policy framework in the medium to long term. 79% of respondents expect that there will be a carbon price in Australia in 2020. But 40% expect that the current scheme will be repealed by the end of 2016. Of those who expect repeal, almost half think that a carbon price will be re-instated by 2020. Factoring in expectations of a possible zero carbon price, the average expected effective Australian carbon price falls from its initial level of $23 per tonne of carbon dioxide equivalent to $10 to $11 per tonne during 2016-18, before climbing to $22 per tonne in 2025. Assessments vary greatly between respondents, illustrating the extent of policy uncertainty. Nevertheless, 69% of respondents from large carbon emitters indicate that their companies have cut emissions in anticipation of a carbon price, and 84% expect their company to do so over the next three years – not withstanding significant uncertainty about whether the carbon price may be repealed. The survey also covers expectations about future prices in the EU emissions trading scheme and credits under the Clean Development Mechanism, the Australian price floor and linking with the EU scheme, and the future of Australia's national emissions target.

Keywords:
Carbon pricing, emissions trading, public policy, expert survey, Australia.

JEL Classification:
Q52, Q54, Q58.

Suggested Citation:
Jotzo, F. 2012, *The CCEP Australia Carbon Pricing Survey 2012: Policy uncertainty reigns but carbon price likely to stay*, CCEP working paper 1206, July 2012, Centre for Climate Economics and Policy, Crawford School of Public Policy, Australian National University, Canberra.

Address for correspondence:
Frank Jotzo, (E) frank.jotzo@anu.edu.au

Acknowledgements:
This survey was conducted in collaboration with the Investor Group on Climate Change.

Nathan Fabian and Tim Jordan helped develop the idea and design of the survey. Erwin Jackson and Steve Hatfield-Dodds provided comments. Ally Adigue provided research assistance. No external funding for this research was received.

Sincere thanks to the participants in the survey for generously giving their time and expertise.

Australia's carbon pricing scheme

Australia has implemented a carbon pricing mechanism, starting 1 July 2012. The legislation follows a long period of policy development and political negotiations on carbon pricing and other aspects of climate change policy.

Carbon pricing lacks bipartisan support in Australia, and the opposition Liberal and National parties have pledged to repeal the 'carbon tax' should they be in office. As a result, there is uncertainty about the future of the carbon pricing policy.

This report presents the results from the inaugural Australia Carbon Pricing Survey, conducted by the Centre for Climate Economics and Policy at the Australian National University.

The survey gauges expectations by Australian-based experts about the future of Australia's carbon price, and about international carbon markets. It quantifies expectations about future prices and policy settings.

The expectations about future carbon price levels elicited here are best interpreted as an aggregation of "best guesses" by people who have knowledge and informed views about the factors that will determine future prices. The average expected prices derived from surveys such as this one thus differ conceptually from forward prices in markets, which reflect market expectations but adjust them for risk and are subject to demand and supply of capital. They also differ conceptually from forecasts of prices that are based on quantitative analysis of underlying market factors, and assumptions about policy settings.

The survey may be repeated in future years.

Surveying Australia's carbon pricing experts

Approximate 230 Australian-based experts on carbon pricing and carbon markets were approached individually by e-mail. Respondents were identified on the basis of their known roles working on carbon pricing issues for their companies, or their known deep expertise on the subject matter.

The survey was conducted anonymously through a secure website, during the period of 4 June to 19 June 2012.

Responses were received from 76 experts. Of these, 32 work for large Australian liable entities (emitters), half of them for electricity generators. Together, the companies these 32 respondents work for account for around 178 million tonnes of carbon dioxide equivalent, or 52% of direct emissions accounted for in Australia's National Greenhouse and Energy Reporting System (in the year 2010-11), and also over half of emissions covered under Australia's emissions permit scheme.

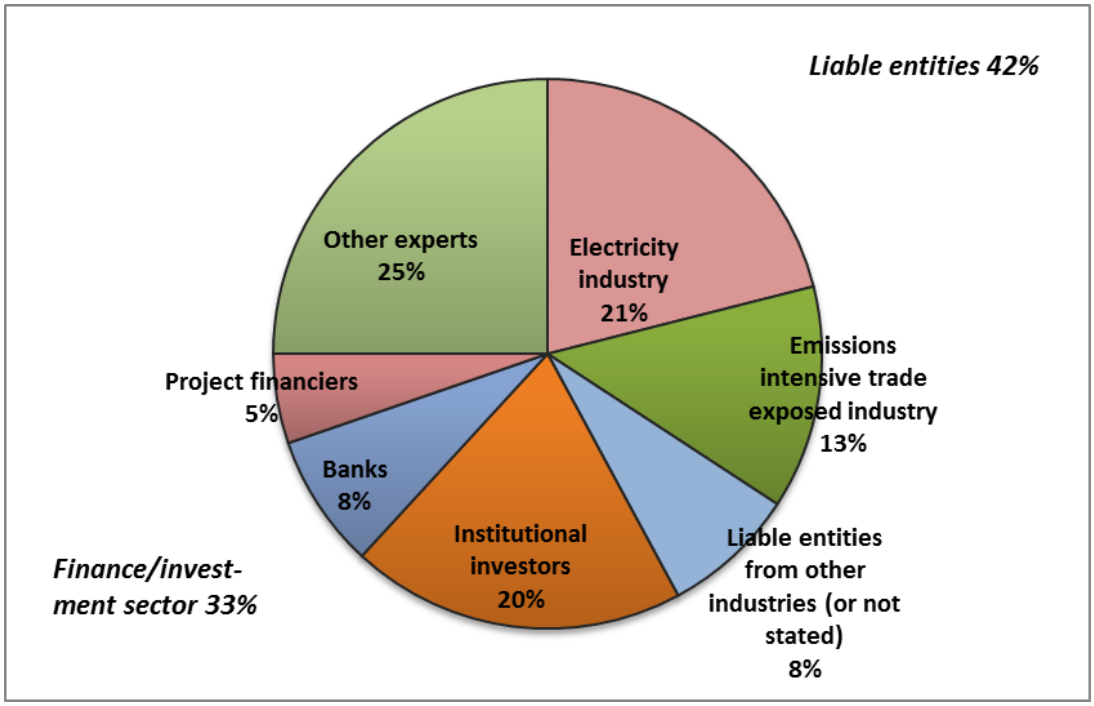
25 experts from the carbon finance and investment sector took part in the survey. Of these, 15 identified as institutional investors, the rest work for banks or project financiers.

A further 19 experts from consultancy and advisory firms, universities, as well non-government organisations, took part.

The survey does not lay claim to be representative. However, it covers a significant share of Australia's expert community on carbon pricing, with particularly strong representation from large liable entities. As such it is likely to provide a degree of reliability in reflecting market and expert expectations.

The survey questions were presented in eight sections, in the order presented in this report. The Appendix to this report shows the exact wording of the survey questions, along with detailed survey statistics and some explanatory notes.

Survey participants



Note: total number of responses n=76. Respondents self-identified as belonging to each group.

Existence of a carbon price

A crucial question for the effect of the carbon price on investment decisions is whether decision makers in business believe that the carbon price will be here to stay, or whether it will be rescinded.

Australia's parliamentary opposition has pledged to repeal the 'carbon tax' if and when in power. This would likely require a drawn-out parliamentary process including a special 'double dissolution' election, of which only six have been held in Australia's history.

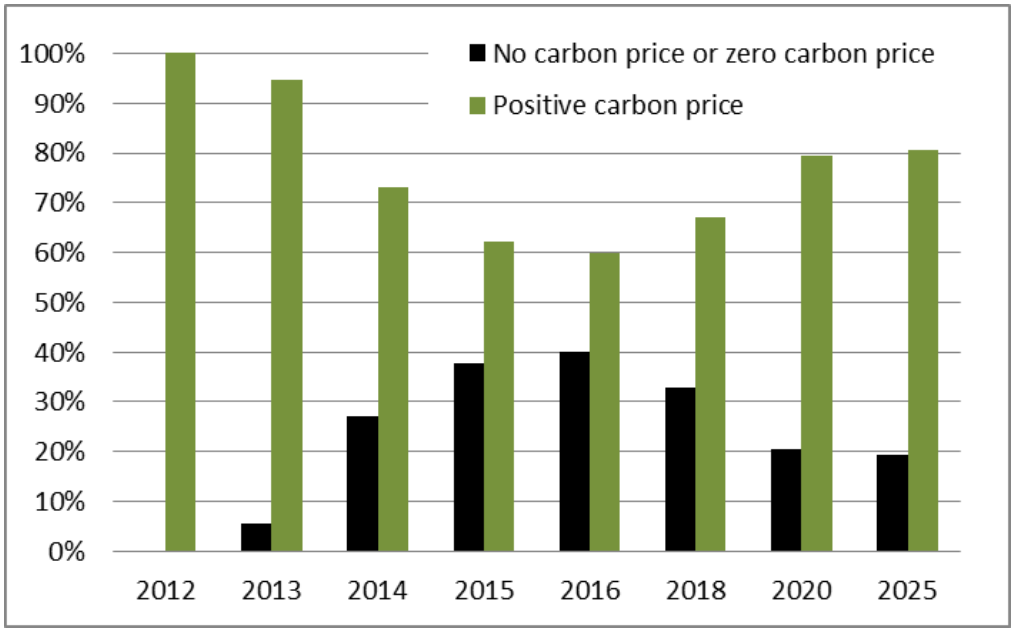
We asked our surveyed experts whether they expect the carbon pricing legislation to be repealed ("entirely or substantially revoked") at the end of each calendar year between 2012 and 2016. We also asked whether they expected a carbon price to be in place in the years 2018, 2020 and 2025.

79% of respondents expect that there will be a carbon price in Australia 2020, and 81% by 2025. However, 38% expect the current carbon pricing legislation to be repealed by the end of 2015, and 40% by 2016. Yet half of those who expect repeal think that a carbon price will be re-instated by 2020.

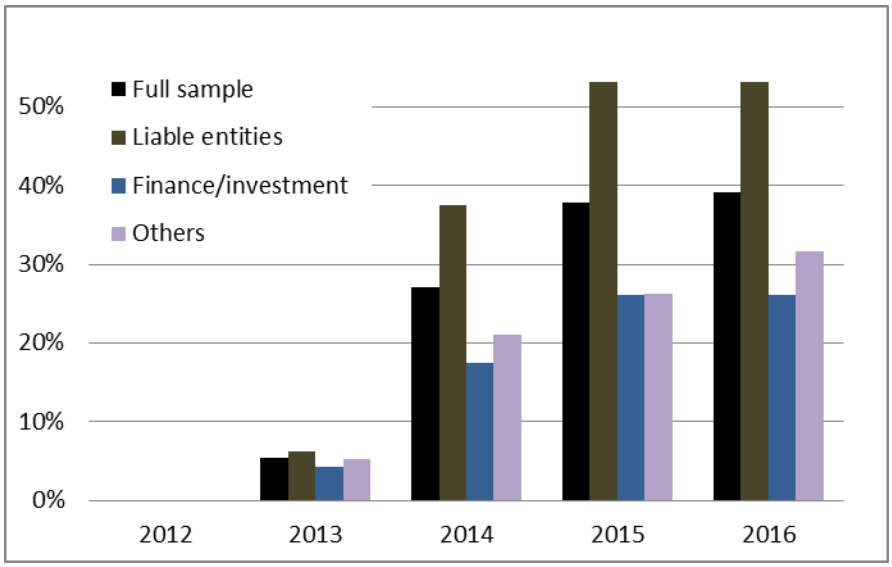
In other words, an overwhelming majority of the expert community surveyed think that there will be a price on carbon in the longer run, but a sizeable portion also think that the current legislation will not last – and implicitly, that it will be replaced by different legislation later in this decade.

Over half of those who expect that the current legislation will be repealed expect such repeal to occur during the year 2014. Expectations about repeal differ markedly between the groups of respondents. Over half of respondents from liable entities expect that the carbon price will be revoked, whereas only a quarter of surveyed representatives from the finance and investment sector expect repeal.

Existence of a carbon price, 2012 to 2025



Repeal of the current carbon pricing legislation, 2012 to 2016



Australia's future carbon price

The defining question for the effectiveness of the carbon price is the expectations that decision-makers in business form over future carbon prices. The price expectation will depend on many different considerations, including whether there is carbon pricing in Australia, whether a fixed price or price floor or ceiling applies and at which level, whether Australia will be a buyer of international emissions units (which in turn depends on Australia's emissions target, domestic emissions trajectory and policy settings), and which types of units are allowed into Australia's scheme and up to what quantities.

We asked our survey participants what effective carbon price they expect to apply to Australian liable entities at different points in time, also explicitly giving the option of "no carbon price" (see Appendix for the exact wording of the question).

The average (mean) expected carbon price averaged over all responses (with "no carbon price" responses counted as a price of zero) is $23/t (of CO2-equivalent emissions) at the end of 2013, just below the legislated price for that point in time. The average expected price then falls to just $10/t to $11/t during 2016 to 2018. It then rises again, to $16/t at 2020 and $22/t at 2025. The median price expectation (the response in the middle of the field when lining up all responses in increasing order) is higher than the averaged responses during most years.

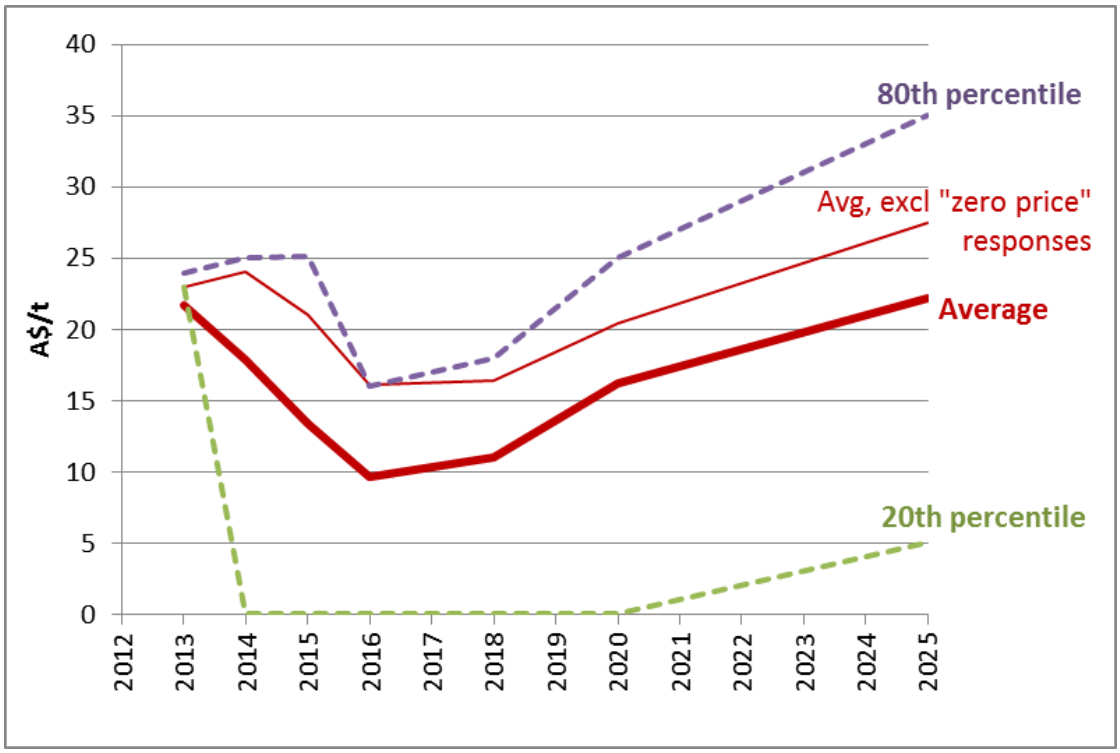
Taking averages only over those responses that expect that a carbon price will apply at the different points in time (excluding "no carbon price" responses), yields a similarly shaped curve, but at a higher level. In this sub-sample of respondents who expect there to be a carbon price at any one time, the average price expectation reaches a low of $16/t during 2016 to 2018.

A forward price curve that falls substantially before rising again is unusual. It reflects that (1) in the short term, a price is more or less locked in for a period of time, at a level above current prices in other major markets; (2) in the medium term, the carbon price could be repealed or fall to much lower levels; and (3) in the longer term, carbon pricing is expected to be in force, at rising levels.

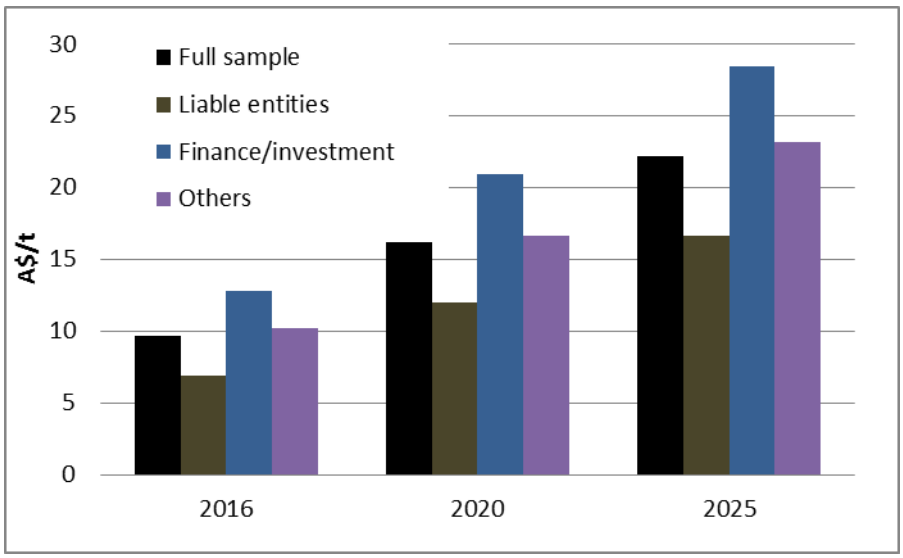
Expert judgments about the likely carbon price diverge greatly, illustrating the great extent of uncertainty that pervades the market. While around 20% of respondents expect a zero effective carbon price at 2020 and 2025, another 20% of respondents expect a carbon price of $25/t or more, and $35/t or more in 2025.

Respondents from emitting companies on average expect a lower carbon price than respondents from the finance and investment community and other experts, reflecting the greater expectation among emitters of repeal of the legislation. For example, the average 2016 carbon price expected by experts from liable entities is just $7/t, compared to $13/t for experts from the finance and investment industry. The differences are predominantly due to differing shares of respondents expecting no carbon price to apply.

Expected carbon price for Australia



Average expected Australian carbon price by groups of respondents



Future prices for EU allowances and CDM credits

Australian carbon prices can be compared to prices paid in the markets for emissions allowances under the EU emissions trading scheme (ETS), and for Certified Emissions Reductions (CERs) from projects under the Clean Development Mechanism (CDM). Prices in these markets could in future be reflected in Australia's carbon prices, for example if there was unrestricted access to CDM credits without a price floor, or if the Australian trading scheme was linked to the EU ETS.

Respondents expect the market price for EU allowances (EUAs) under the emissions trading scheme to rise steadily after 2013. The average expected EUA price surpasses the expected Australian price in 2016, and reaches $23/t by 2020.

The expected price for emissions reductions credits from the CDM also is expected to rise steadily, tracking at roughly two thirds of the level of the EU allowance price. It is notable that the CDM price trajectory in this survey is substantially higher than that in recent analyses of the CDM market, which indicate a likely oversupply of credits, which would lead to stagnating or falling prices rather than increases.

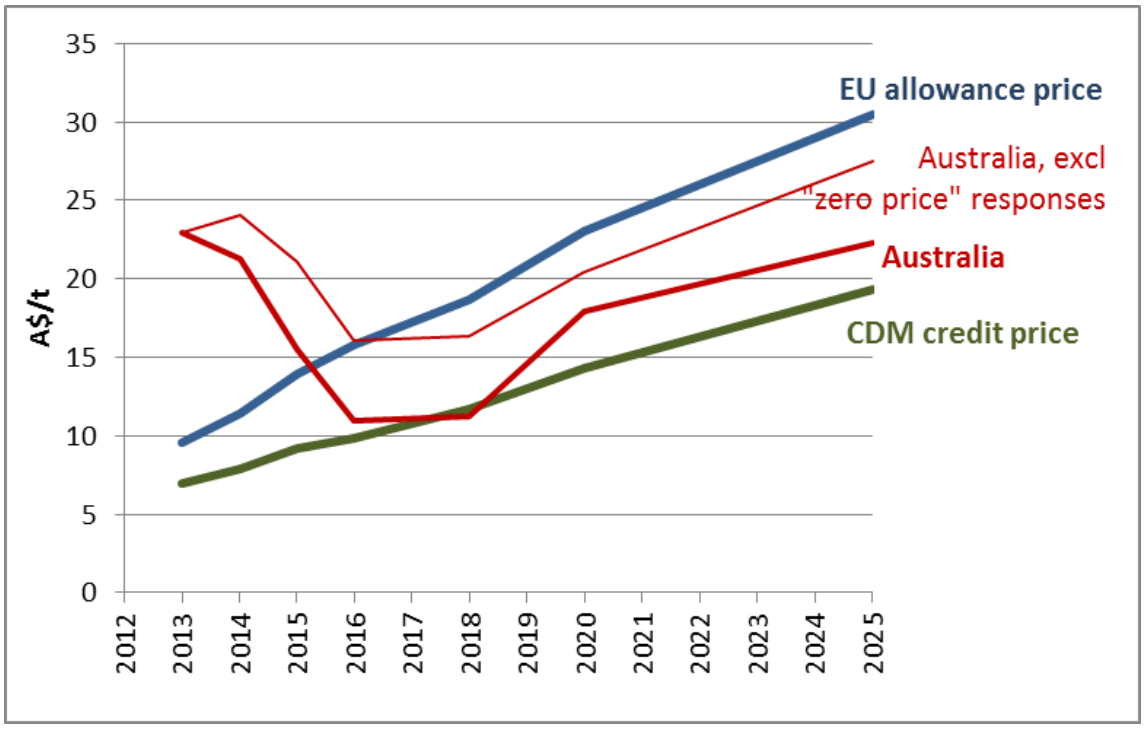
The expected Australian price tracks in-between the average expected prices for CDM credits and EU allowances, except for the period to 2015 when the expected Australian price is higher. If taking into account only responses that expect a positive carbon price, the expected Australian price tracks closely below the expected EU price.

Variability in expectations about EU and CDM prices is large, though not as high as for the Australian carbon price. The bottom 20% of expected prices see the EU price at A$16/t or lower in 2020, while the top 20% expect a price of $30/t or higher. The corresponding interval for the CDM at 2020 is between A$6/t and A$20/t.

Expectations of future prices differ between the groups of respondents, but to a much smaller extent than for the Australian price. Respondents from the finance and investment sector on average expect higher prices than in the full sample, and respondents from liable entities on average expect lower prices.

In evaluating these expected prices and comparing them to international studies, it needs to be borne in mind that this survey has asked Australian experts for their price expectations in Australian currency. One Australian dollar is currently worth approximately one US dollar, but this exchange rate has been highly variable in the past.

Average expected prices for EU allowances and CDM credits



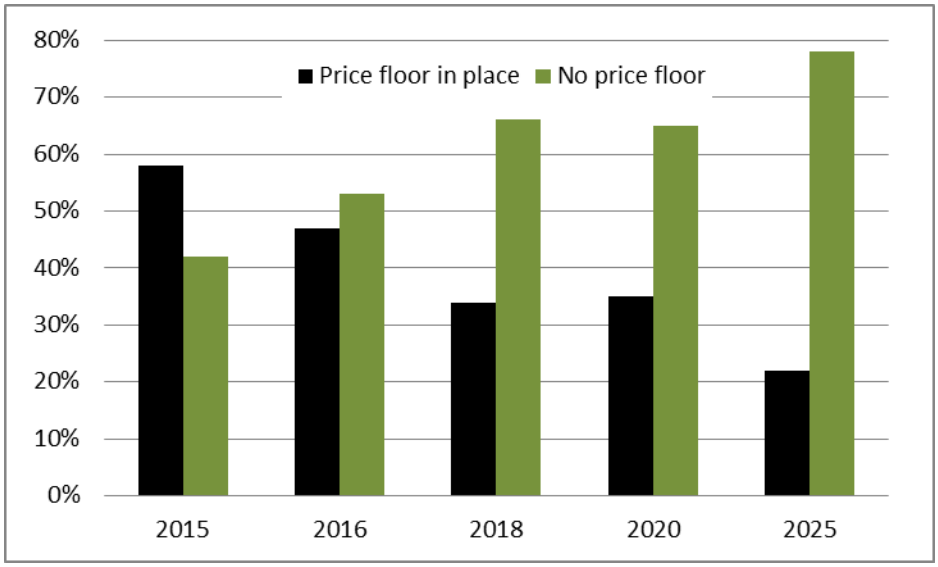
Price floor

Australia's carbon pricing legislation foresees a price floor starting at $15/t to apply for the period 2015/16 to 2017/18. Such a price floor could potentially be extended, depending on future changes to policy. However, the implementing regulations that would be required for the price floor have not yet been made by the government, and they are subject to potential disallowance by the Parliament.

Survey participants were asked whether they expect a price floor to be in place at the end of different calendar years.

58% of respondents expect a price floor to apply at the end of 2015. It means that the large majority of those who expect a carbon price still to be in place at that time, also expect the price floor to be in place. Just over one third of respondents still expect a price floor to apply during the years 2018 to 2020, and 22% expect that there will still be a price floor in 2025.

Price floor in Australia



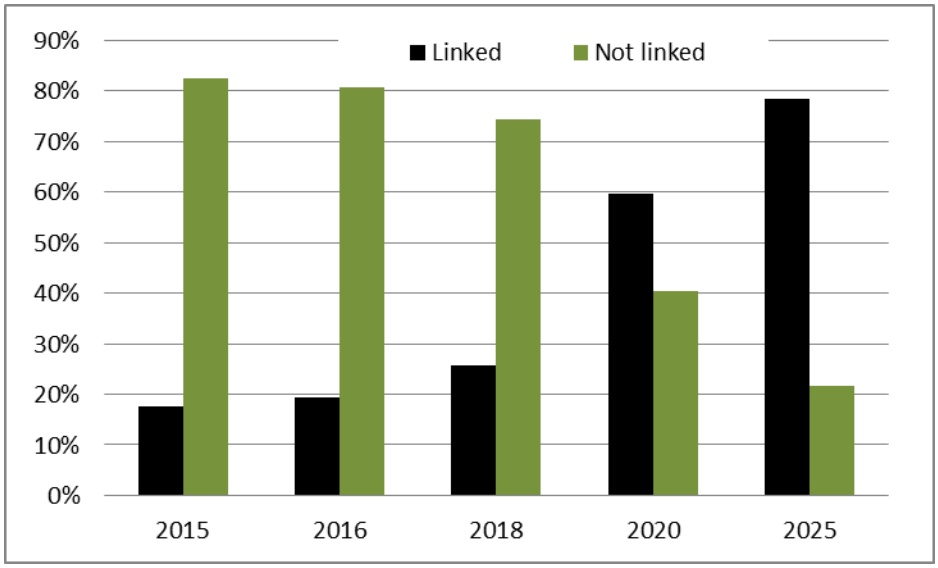
Linking with the EU emissions trading scheme

Australia's carbon pricing policy foresees the possibility of future linking with trading schemes in other countries, and the Australian government has expressed a strong preference for linking with the EU emissions trading scheme.

Our sample of experts were asked whether they expect that the Australian and EU emissions permit schemes will be linked by the end of different calendar years.

Just 18% of respondents expected linking to occur by the end of 2015, while 60% expect linking by 2020 and 78% by 2025. International linking is thus seen predominantly as a longer-term prospect.

Linking of Australian and EU emissions trading schemes



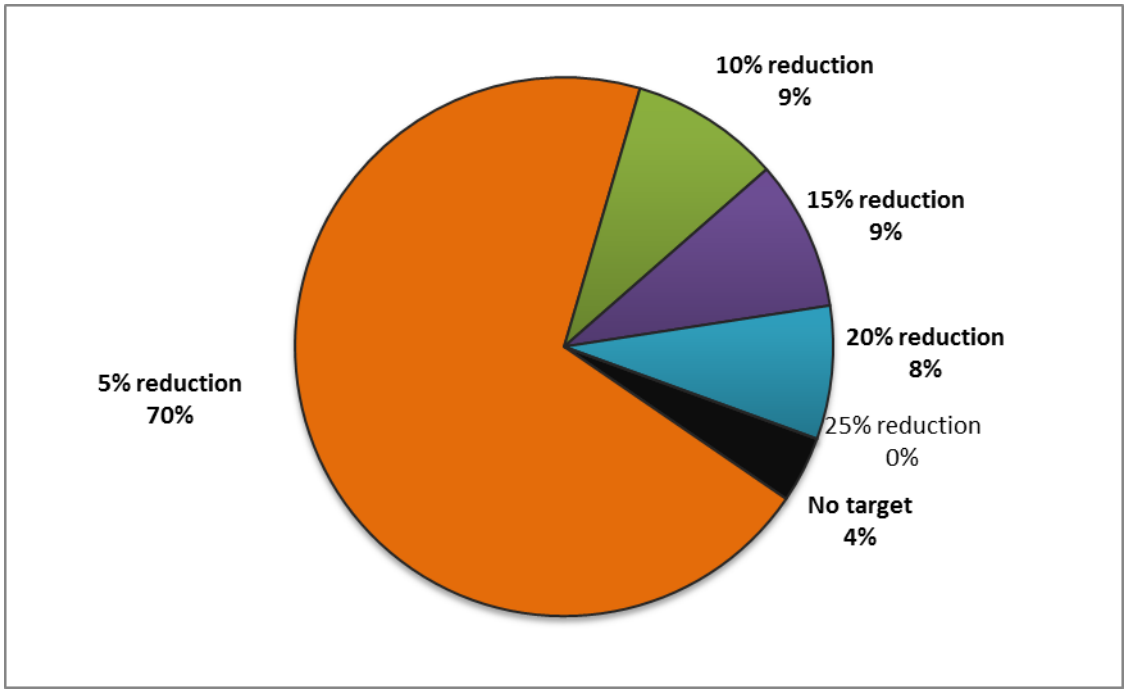
Australia's national target

The Australian government has pledged to reduce national emissions (net of international traded emissions units) by 5% unconditionally, or up to 15% or 25% depending on other countries' commitments and actions and the existence of an international climate agreement. The opposition supports the 5% reduction target and the conditional target range. The target is defined as a reduction in national emissions at 2020 relative to the year 2000, net of international traded emissions units.

Survey participants were asked about their expectation of what Australia's official emissions target for 2020 will be, as it will apply at the end of 2015.

70% of respondents expected that the 5% reduction target will still apply. Just over one quarter expected the target to be in the range of 10% to 20%. 4% expected that there will be no official 2020 target at the end of 2015. No respondents indicated that they expected a 25% reduction target or any other numerical target. This result suggests that there is almost no expectation that an alternative government would rescind Australia's national emissions target.

Australia's official emissions target for 2020, expected to apply at the end of 2015



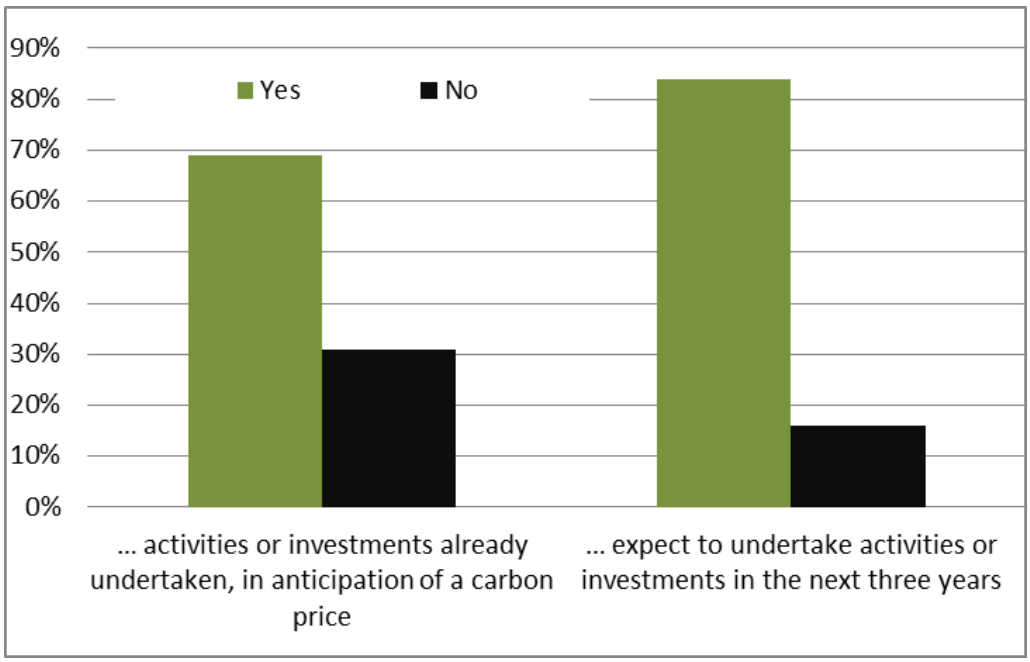
Mitigation action

We asked survey participants from liable entities in our sample – representing approximately 52% of total emissions under the Australian carbon pricing mechanism – whether their companies had undertaken emissions reductions activities or investments in anticipation of the carbon price, or expect to do so in the next three years.

69% of respondents registered that their company has already undertaken emissions reduction activities or investments in anticipation of a carbon price, and 84% expect their company to do so over the course of the next three years.

This does not allow conclusions regarding the nature and strength of the companies' actions. However, it is notable in the context of half of the experts working for liable entities expecting repeal of the current carbon pricing legislation.

Mitigation action by liable entities



Summary and conclusions

The inaugural Australia Carbon Pricing Survey indicates pervasive uncertainty about the future of Australia's carbon pricing policy, but also a strong expectation that carbon pricing will be a feature of Australia's economic policy framework in the medium to long term.

The survey elicited expectations about the future of Australia's carbon price from 76 of Australia's experts on carbon pricing and carbon markets, including 32 who work for large liable entities (together accounting for over half of emissions under Australia's emissions permit scheme), 25 working in the carbon finance and investment sector, and 19 other carbon pricing and market experts.

79% of respondents expect a carbon price to be in place in Australia at the end of the decade. However, 40% also expect the current carbon pricing legislation to be repealed by the end of 2016. Of those who expect repeal of the carbon price over the next few years, half think that a carbon price will be re-instated by 2020.

This is a powerful result in the context of the current deep political division in Australia between parties supporting carbon pricing and parties rejecting it.

The average expected price (factoring in the possibility of a zero price) dips down to less than half the starting price of the carbon pricing scheme, before recovering to above $20/t after 2020. A forward price curve that falls substantially before rising again is unusual. It reflects the unusual political circumstances that currently prevail in Australia. These see the carbon price locked in for the short term, under a cloud of doubt in the medium term, but an apparent strong expectation that carbon pricing is the default policy position in the longer term.

Averages mask a huge range of expected outcomes. While around 20% of respondents expect a zero effective carbon price at 2020 and 2025, the highest 20% of responses expect a carbon price of $25/t or more, and $35/t or more in 2025. A greater share of respondents from the carbon emitting industries than the other groups expect that no carbon price will be in effect at different points in time.

These results illustrate the pervasive uncertainty about the future of Australia's carbon pricing mechanism. The wide range of views about the likely future of the carbon pricing scheme and price levels could also mean that the abatement response among Australian emitters is uneven. Some businesses may be taking much stronger measures to cut emissions than others, solely because of differing expectations about future developments.

Most of this uncertainty is related to domestic policy and politics, and some of it to international policy and market developments.

The average expected prices in the EU emissions trading scheme and for CDM offset credits are expected to increase steadily over time, from their current lows. After 2016, the Australian price on average is expected to be in-between the expected EU and CDM prices. In comparing the Australian and European carbon price, it is important to keep in mind that many European countries rely heavily on non-pricing policies, and that additional levies on greenhouse gas emissions are in operation in a number of European countries.

This price path is consistent with results about expectations about a price floor in the Australian scheme, and expectations about linking with the EU emissions trading scheme, which has been the express preference of the Australian government. The survey indicates a strong expectation that a price floor will apply in Australia's scheme if it is not repealed. Linking to the EU emissions trading scheme is seen as a longer term prospect, with 60% expecting it to happen by 2020, but less than 20% by the end of 2016.

The survey indicates that the majority of Australia's major carbon emitting companies have already taken action to reduce their emissions, and even more expect to make such investments over the next three years. This does not allow conclusions regarding the nature and strength of the companies' actions. Nevertheless, it is remarkable given that half of respondents from liable entities expect that the current legislation will be repealed. It suggest that industry is not letting short term policy uncertainty get in the way of some action to reduce greenhouse gas emissions.

Finally, Australia's national emissions target for 2020 is overwhelmingly expected to remain a 5% reduction relative to year 2000 levels. This result suggests that there is almost no expectation that an alternative government would retract Australia's national emissions target. To the contrary, a quarter of the respondents expect Australia's national target to be strengthened. If there was no carbon price, then achieving a reduction target would in all likelihood require significant alternative policy measures and/or greater purchases of emissions reductions units from other countries.

Appendix: Survey questions and responses

Section 1. Category of your company or organisation

Which category best describes your company or organisation?

	Number of respondents	Share %
Liable entity	32	42%
… Electricity industry	*16*	*21%*
… Emissions intensive trade exposed industry	*10*	*13%*
… other or not stated	*6*	*8%*
Finance/investment	25	33%
… Institutional investor	*15*	*20%*
… Bank	*6*	*8%*
… Project financier	*4*	*5%*
Other experts (labelled 'research / non-government' in the survey; also includes selected legal practices, consultancies, and other carbon pricing experts)	19	25%
Total	76	100%

Section 2. Repeal of the carbon price

Do you expect that Australia's carbon pricing scheme will have been repealed, by the end of the following calendar years?

(This refers to a situation where the Australian carbon pricing legislation is entirely or substantially revoked.)

Share of "Yes" responses (as share of total Yes or No responses, ignoring empty responses):

		Subgroups		
	Full sample	Liable Entities	Finance	Others
2012	0%	0%	0%	0%
2013	5%	6%	4%	5%
2014	27%	38%	17%	21%
2015	38%	53%	26%	26%
2016	39%	53%	26%	32%
Number of respondents	74	32	23	19

Note: where respondents answered "yes" for a particular year but did not submit a response for other years, it was assumed that "yes" applied for subsequent years and "no" for preceding years.

Section 3. Australia's carbon price (A$/tCO2-equivalent)

What is your expectation of the effective carbon price that will apply to Australian liable entities at the end of the following calendar years? (Options: free numerical input, or choose "no carbon price")

["Effective carbon price" is defined as the average price in official Australian carbon unit auctions and secondary markets. This includes a floor price if applicable (whether applied as a minimum auction price or as a surrender charge on international units). Unit: A$/tCO2-equivalent. Choose "no carbon price" if you expect the carbon pricing mechanism to have been substantially repealed.]

Full sample (A$/t):

	Mean price	Median price	Stan-dard devi-ation	20th percen-tile price	80th percen-tile price	Mean price, excluding "no carbon price" responses	Share of "no carbon price" responses	Number of respon-dents
2013	22	23	6	23	24	23	5%	74
2014	18	24	11	0	25	24	26%	74
2015	13	15	11	0	25	21	38%	74
2016	10	15	9	0	16	16	40%	70
2018	11	14	9	0	18	16	33%	67
2020	16	15	12	0	25	20	21%	67
2025	22	22	17	5	35	28	19%	66

Note: [a] 'No carbon price' share includes explicit 'no carbon price' responses, entries of zero for the carbon price, and responses that expected the carbon pricing legislation repealed at a point in time but did not register an explicit response for the price in that year.

Average for groups of respondents (A$/t):

	Liable entities	Finance/investment	Other experts	Full sample
2013	22	22	21	22
2014	16	20	19	18
2015	10	16	17	13
2016	7	13	10	10
2018	9	13	12	11
2020	12	21	17	16
2025	17	28	23	22

Section 4. CER market price and EU Allowance price

What is your expectation of the average market price for Certified Emissions Reductions (CERs) from the CDM, eligible for acquittal in Australia at the end of the following calendar years?

What is your expectation of the average market price for EU emissions allowances at the end of the following calendar years?

("Average market price" is defined as average prices in secondary markets, exclusive of a surrender charge if applicable. Unit: A$/tCO2-equivalent.)

CER market price (A$/tCO2-equivalent):

	Mean	Median	Standard Deviation	20th percentile	80th percentile	Total number of respondents
2013	7	6	3	5	10	52
2014	8	8	4	5	10	51
2015	9	10	4	5	15	52
2016	10	10	5	5	15	50
2018	12	10	6	6	18	50
2020	14	15	9	6	20	49
2025	19	17	13	8	28	49

EU allowance market price (A$/tCO2-equivalent):

	Mean	Median	Standard Deviation	20th percentile	80th percentile	Total number of respondents
2013	10	10	3	7	12	52
2014	11	10	4	8	15	51
2015	14	14	5	10	18	52
2016	16	15	6	10	20	50
2018	19	18	7	14	25	50
2020	23	22	10	16	30	49
2025	30	27	17	19	46	49

Section 5. Price floor

In your expectation, will a price floor be in place at the end of the following calendar years?

	Share %		Total number of respondents
	Yes	No	
2015	58%	42%	72
2016	47%	53%	70
2018	34%	66%	70
2020	35%	65%	65
2025	22%	78%	68

Note: where respondents answered "no carbon price" in the earlier question for Australia for a particular year, but did not submit a response regarding the price floor, this was counted as a "no" response on the price floor.

Section 6. Australia-EU linking

In your expectation, will the Australian and EU emissions permit schemes be linked by the end of the following calendar years?

	Share %		Total number of respondents
	Yes	No	
2015	18%	82%	68
2016	19%	81%	67
2018	26%	74%	70
2020	60%	40%	67
2025	78%	22%	65

Section 7. Australia's 2020 target as it will apply at the end of 2015

What is your expectation of Australia's official national emissions target for 2020,
as it will apply at the end of the 2015?

*("**National emissions target**" is defined as the percentage reduction at 2020 relative to 2000 in Australia's national emissions net of transfers of international emissions units. The target may or may not be binding via an international treaty. It is taken to be whatever the government at the time defines as the national target.)*

Number of respondents: 76

	Share %
No target	4%
5%	70%
10%	9%
15%	9%
20%	8%
25%	0%
Other	0%

Section 8. Emissions reduction activities and investments by liable entitities

If you represent a liable entity:

Has your company undertaken emissions reduction activities or investments in anticipation of a carbon price?

Do you expect that your company will undertake emissions reduction activities or investments in response to a carbon price during the next three years?

	Share %	
	Yes	No
... already undertaken, in anticipation of a carbon price	69%	31%
... expect to undertake in the next three years	84%	16%

Number of respondents: 32