

CAPS FOR THE CARBON PRICING MECHANISM

13

The Authority is required to recommend five years of annual caps under the Clean Energy Act. While this legislative requirement persists, the Authority acknowledges that the government intends to repeal the carbon price and replace it with the Direct Action Plan to reduce Australia's emissions.

Caps under the carbon pricing mechanism limit emissions from electricity generation, direct combustion, landfills, wastewater, industrial processes and fugitive emissions.

Chapter 13 recommends caps consistent with the Authority's 2020 target recommendations (15 per cent plus carryover). The caps take account of estimated emissions from sources outside caps, uncertainty in emissions estimates, free allocation of emission units and limits on the use of international units. The chapter discusses:

- the carbon pricing mechanism and the role of caps
- considerations in estimating the budget available for caps
- the year-by-year shape of caps.

Further details, including calculation methodologies and data, are set out in Appendix E.

13.1 THE CARBON PRICING MECHANISM AND THE ROLE OF CAPS

The carbon pricing mechanism was established under the Clean Energy Act and covers more than half of Australia's emissions. Entities in covered sectors pay the carbon price if they emit at least 25 kt CO₂-e annually. The remaining uncovered sectors are subject to an equivalent carbon price or do not face a carbon price (Table 13.1).

TABLE 13.1: COVERAGE OF THE CARBON PRICING MECHANISM

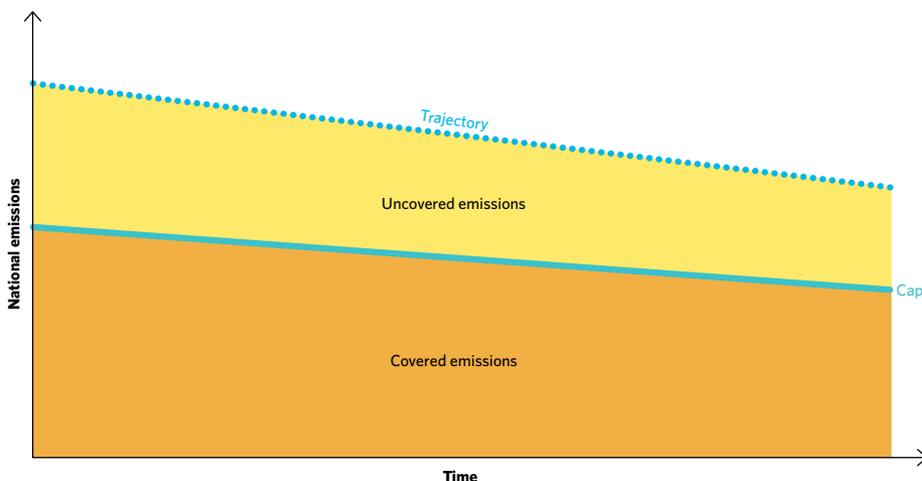
CARBON PRICING MECHANISM	EQUIVALENT CARBON PRICE	NO CARBON PRICE ²
Emissions above the annual 25 kt CO ₂ -e threshold from: <ul style="list-style-type: none"> • electricity generation • direct combustion¹ • industrial processes • waste deposited since July 2012 • fugitive emissions. 	Transport fuels used for: <ul style="list-style-type: none"> • domestic aviation • marine transport • rail transport • business in off-road transport • non-transport business uses. Synthetic greenhouse gases.	Emissions from: <ul style="list-style-type: none"> • agriculture • LULUCF • waste deposited before July 2012 • fugitive emissions from decommissioned mines • conventional road transport • entities in sectors covered by the carbon pricing mechanism that fall below the 25 kt CO₂-e threshold

Notes: (1) Direct combustion excludes diesel, which is covered by the equivalent carbon price (unless opted in). (2) Sources in the agriculture, land and waste sectors are eligible to create carbon offsets under the CFI.

Under the existing legislation, the carbon pricing mechanism has a three-year fixed-price period from 1 July 2012 to 30 June 2015. When the fixed-price period ends, the legislation provides for annual caps on emissions covered by the carbon pricing mechanism ('covered emissions'). The gap between the national emissions trajectory and cap allows room in the national emissions budget for emissions from sources outside the carbon pricing mechanism ('uncovered emissions') (Figure 13.1).

The cap determines the total number of Australian carbon units for a particular year to be issued by the government. These units would be provided to entities as a free allocation or sold at auction, generating government revenue.

FIGURE 13.1: THE RELATIONSHIP BETWEEN THE TRAJECTORY, CAP AND EMISSIONS



Source: Climate Change Authority

If covered emissions exceed the caps, liable entities can purchase international units or domestic offsets to make up the difference. Approved international units can be surrendered to meet up to 50 per cent of an entity's carbon liability; these units include EUAs and Kyoto units (units generated under the Kyoto Protocol). A sub-limit of 12.5 per cent applies to Kyoto units. Domestic offsets or ACCUs are generated under the CFI.

Under the Clean Energy Act, the Authority must recommend five years of caps, taking account of:

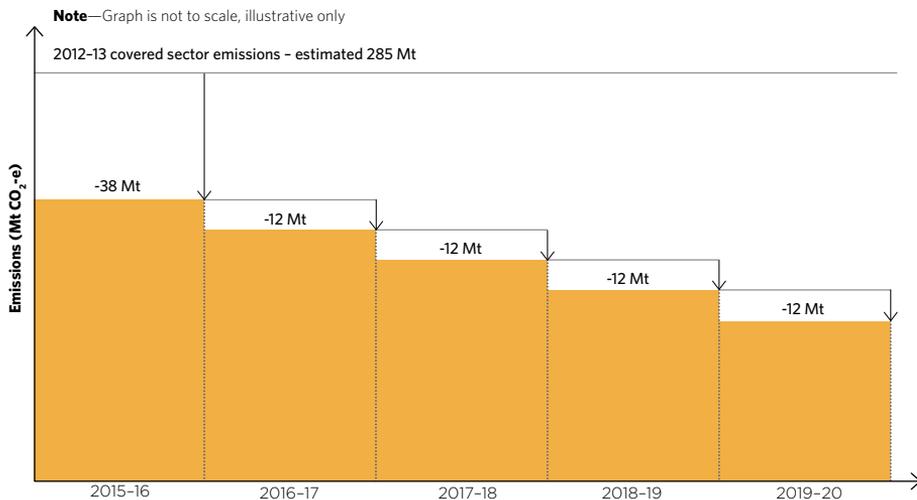
- voluntary action to reduce Australia's greenhouse gas emissions
- estimates of greenhouse gas emissions that are not covered by the Clean Energy Act
- the extent (if any) of non-compliance with the Clean Energy Act and the associated provisions
- the extent (if any) to which liable entities have failed to surrender sufficient units to avoid liability for unit shortfall charge
- any acquisitions, or proposed acquisitions, by the Commonwealth of eligible international emissions units.

The current legislation requires the minister responsible for climate change to take the Authority's advice and recommendations into consideration when setting caps, and to announce caps five years in advance.

In the event that regulations setting the caps are not made or are disallowed, the Clean Energy Act provides for default caps. The first annual default cap equals total emissions covered by the carbon pricing mechanism in 2012-13, minus 38 million tonnes. Following this, for each year that regulations were not made, the annual cap would be 12 Mt less than the previous compliance year (Figure 13.2).

Default caps were originally designed to be broadly consistent with the unconditional 5 per cent target. Since then, the 2000 base year emissions and carryover estimates have been revised up, and projections for covered emissions for 2012-13 have been revised down. Based on the Authority's current assessment, default caps are now broadly consistent with reaching a 15 per cent target in 2020, or 19 per cent including carryover.

FIGURE 13.2: DEFAULT CAP ARRANGEMENTS UNDER THE CARBON PRICING MECHANISM



Source: Climate Change Authority

13.2 OVERVIEW OF THE AUTHORITY’S APPROACH TO CAPS

The Authority’s recommended annual caps are consistent with its recommended national budget to 2020 (Box 13.1).

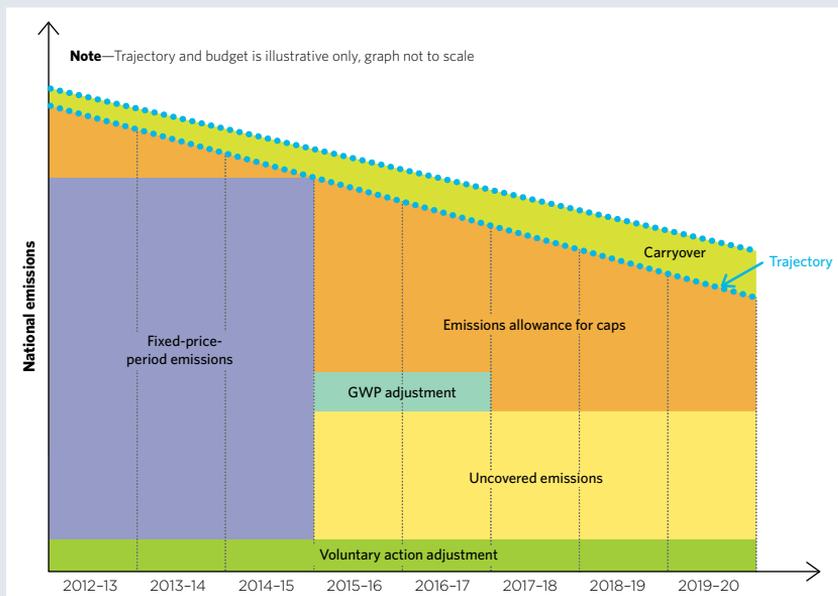
To this end, the Authority takes the national budget for the period 2013–2020 (4,193 Mt CO₂-e as recommended in Chapter 9) and adds 116 Mt CO₂-e for carryover. It then determines how much of the budget to reserve for emissions from the fixed-price period and uncovered emissions from the flexible-price period. The remainder of the budget is available for caps and can be distributed across the flexible-price period to 2020. This approach gives confidence that Australia’s total net emissions will stay within its 2020 budget.

BOX 13.1: FRAMEWORK FOR CALCULATING CAPS

In determining the number of units available for caps, the Authority has applied the following approach:

Emissions allowance for caps = National emissions budget (2013–2020) **plus** carryover **minus** aggregate emissions from the fixed-price period **minus** uncovered emissions in the flexible-price period **minus** adjustment for Global Warming Potentials (GWPs) **minus** adjustment for voluntary action (see Figure 13.3).

FIGURE 13.3: FRAMEWORK FOR CALCULATING CAPS



Note: The area under the trajectory is equal to the national emissions budget (2013–2020).

Source: Climate Change Authority

The Authority has used its best estimate of uncovered emissions, assuming existing legislation, to calculate caps. That is, the share of the budget allocated to uncovered emissions will be determined by a projection of what those emissions will actually be.

An alternative approach, suggested by the Business Council of Australia (BCA), is to set caps based on a relative share of covered and uncovered sectors in BAU emissions. BCA argued that this would ‘avoid a disproportionate shifting of the abatement burden onto covered sectors’ (*Draft Report submission*, p. 2).

The Authority does not propose to adopt this approach because:

- encouraging equal shares of emission reductions across sectors is the wrong goal—it would not promote efficiency because different sectors have different emissions reduction costs
- it relies on estimates of BAU emissions. Many emissions reduction policies have been in place for years, and have changed Australia’s economy and emissions in permanent ways. As a result, BAU becomes an increasingly abstract concept over time
- it would not give a high likelihood of Australia meeting its national emissions budget. If the approach required uncovered sectors to deliver a certain amount of emissions reductions, but no policies were in place to ensure that happened, Australia would breach its budget.

This does *not* mean that the Authority considers that uncovered sectors have no role in meeting the national emissions budget, or that existing policies in uncovered sectors are ideal. The overall policy mix should be reviewed regularly and policies in uncovered sectors should deliver an equivalent incentive to reduce emissions as the covered sectors face.

Even so, the Authority does not consider that its approach would impose a disproportionate burden on covered sectors. Uncovered sectors already contribute to reducing Australia’s emissions. For example, between 1990 and 2012, emissions from the land sector (an uncovered sector) fell by 85 per cent, while emissions from electricity (a covered sector) increased by 53 per cent (see discussion in Chapter 6). Further, as discussed in Chapter 10, the level of the cap is not expected to have a material effect on the level of the carbon price (the burden that matters to firms) because of links to international carbon markets. As a result, the level of the cap would be unlikely to materially affect the burden faced by the covered sectors. The most significant impact is, instead, on government revenue—giving the government a good incentive over time to ensure that appropriate policies apply to all sectors.

13.3 ESTIMATING EMISSIONS OUTSIDE THE CAPS

To estimate emissions outside the caps, the Authority must consider:

- carryover of emissions rights from the first commitment period of the Kyoto Protocol
- fixed-price-period emissions for the whole economy
- uncovered emissions during the flexible-price period, taking into account
 - emissions that do not face the carbon price
 - emissions that are subject to the equivalent carbon price
 - emissions associated with non-compliance and payment of the shortfall charge
- voluntary action and other adjustments.

The Authority has used the economic modelling discussed in Chapter 10 and Appendix F to estimate emissions. The medium scenario represents the best estimate of global and national economic activity. It provides the best estimate of emissions to 2020 and has been used as the basis for calculating caps. Other scenarios have been used to test whether the resulting caps are robust across a range of possible future carbon market conditions.

13.3.1 CARRYOVER FROM THE FIRST COMMITMENT PERIOD OF THE KYOTO PROTOCOL

As outlined in Chapter 7, the Authority recommends carryover from the first commitment period of the Kyoto Protocol be used to strengthen the 2020 target by 4 percentage points. The recommended national emissions budget (2013–2020) is based on a 19 per cent target (15 per cent plus carryover). For the purpose of setting caps, carryover is added to this budget. As a result, the recommended caps are essentially the same as for a 15 per cent target.

13.3.2 WHOLE-OF-ECONOMY EMISSIONS DURING THE FIXED-PRICE PERIOD

The Authority has estimated the whole-of-economy emissions that are likely to occur under the three-year fixed-price period, since none of these emissions are covered by the caps. These emissions are subtracted from the national emissions budget for 2013–2020 to determine the emissions available for caps. Based on the modelling, the Authority estimates fixed-price emissions to be 1,784 Mt CO₂-e.

13.3.3 UNCOVERED EMISSIONS DURING THE FLEXIBLE-PRICE PERIOD

The Authority has estimated the emissions from sources not covered by the carbon pricing mechanism. As set out in Table 13.1, some uncovered emissions do not face a carbon price at all; others face the equivalent carbon price.

EMISSIONS THAT DO NOT FACE A CARBON PRICE

The Authority has made a best estimate of emissions from sectors that do not face a carbon price, and then added estimated CFI credits and ‘below-threshold’ emissions.

- The CFI is a carbon offset scheme. CFI projects reduce uncovered emissions, but allow for an equivalent increase in covered emissions through the generation and use of ACCUs. To avoid double-counting, the Authority needs to add the credited emissions reductions back to uncovered emissions.
- Facilities in sectors covered by the carbon pricing mechanism that emit less than the 25 kt CO₂-e threshold do not face a liability; these are referred to as ‘below-threshold’ emissions and fall outside the caps. Below-threshold emissions are difficult to estimate because many of those facilities are not required to report their emissions. The Authority has estimated below-threshold emissions by comparing covered emissions from the national inventory with emissions that are liable under the carbon pricing mechanism.

EMISSIONS SUBJECT TO AN EQUIVALENT CARBON PRICE

Some liquid fuel use for the transport sector and synthetic GHGs are subject to the equivalent carbon price. The Authority has made a best estimate of emissions from these sectors, deducting estimated ‘opt-in’ emissions.

‘Opt-in’ arrangements allow large end-users of fuel to voluntarily take on direct liability under the carbon pricing mechanism rather than face the equivalent carbon price. When entities choose to opt in, their emissions move from outside to inside the caps. This, in turn, makes more of the national emissions budget available for caps. Opting in during the fixed-price period allows liable entities to pay a lower carbon price on average over the year (as they can defer payment of their carbon cost to the end of the financial year rather than pay monthly). These benefits diminish in the flexible-price period; however, companies that opt in still have greater flexibility to manage their carbon liability.

The Authority considers that entities that have already opted in are likely to remain within the carbon pricing mechanism. In the future, some additional entities might opt in, particularly very large fuel users. The Authority has made a best estimate on this basis.

EMISSIONS SUBJECT TO NON-COMPLIANCE AND THE SHORTFALL CHARGE

The Authority has considered whether to make an allowance for non-compliance or payment of the shortfall charge. These relate to emissions that should be covered by the cap but may not be. Under the carbon pricing mechanism, liable entities are required to surrender an eligible unit, or pay the shortfall charge, for every tonne they emit. If they choose to pay the shortfall charge or simply do not comply, they would not surrender emission units and those emissions would be outside the cap.

The legislation creates strong incentives for liable entities to comply and surrender eligible units. For example, the unit shortfall charge is double the benchmark average auction price for Australian carbon units during the particular compliance year, making it unlikely that entities would choose to pay the shortfall charge. Non-compliance is also unlikely as legal penalties apply and the rate of compliance for similar legislation has been close to 100 per cent. As a result, most liable entities would be likely to surrender emissions units. The Authority therefore assumes emissions associated with non-compliance and payment of the unit shortfall charge are zero when recommending caps to 2020. If future non-compliance rates proved to be material, caps could be adjusted over time to account for this.

CALCULATING UNCOVERED EMISSIONS

Considering all these factors, the Authority estimates uncovered emissions during the flexible-price period to 2020 to be 1,385 Mt CO₂-e.

13.3.4 VOLUNTARY ACTION AND OTHER ADJUSTMENTS

The Authority has considered:

- accounting discrepancies between the carbon pricing mechanism, the CFI and the national greenhouse gas inventory
- voluntary action—accounting for GreenPower and the voluntary cancellation of renewable energy certificates
- government purchase of international units.

ACCOUNTING DISCREPANCIES—CHANGES IN GLOBAL WARMING POTENTIALS

The emissions reporting system used for the carbon pricing mechanism and the CFI is currently based on global warming potentials (GWPs) used to account for emissions in the first commitment period of the Kyoto Protocol. The international community has agreed to update GWP values for targets in the second commitment period; however, the accounting system used in the carbon pricing mechanism and the CFI will not be revised until 2017-18. As a result, there will not be a one-for-one relationship between the existing legislated policy (that is, the carbon pricing mechanism and the CFI) and the national emissions budget for the first two years of the flexible-price period.

The Authority has made its best estimate of this discrepancy and deducted 16 Mt CO₂-e from the budget.

VOLUNTARY ACTION—ACCOUNTING FOR GREENPOWER AND THE VOLUNTARY CANCELLATION OF RENEWABLE ENERGY CERTIFICATES

As outlined in Section 7.3.3, the Authority considers three types of voluntary action should be recognised as additional to the national target—voluntary cancellation of domestic emissions units, GreenPower purchases and the voluntary cancellation of renewable energy certificates (RECs) created under the RET.

Only GreenPower purchases and the voluntary cancellation of RECs need to be considered when calculating caps. Voluntary cancellation of domestic units reduces caps directly; in contrast, GreenPower purchases and the voluntary cancellation of RECs reduce emissions from electricity generation, which is covered by the caps.

The Authority has made a best estimate of GreenPower purchases and voluntary REC cancellations over the period, and deducted 16 Mt CO₂-e from the budget.

GOVERNMENT PURCHASE OF INTERNATIONAL UNITS

While the carbon pricing mechanism allows liable entities to buy and use certain international units, the government could also purchase international units directly. The Authority recommends government purchase under the proposed new policy arrangements to help meet the recommended target (Chapter 12). This is not necessary under the carbon pricing mechanism as liable entities would buy the units instead. The Authority has therefore assumed no government purchase in its recommended caps.

13.4 MANAGING UNCERTAINTY IN EMISSIONS ESTIMATES

All estimates in the previous section are based on projected future levels of emissions. Actual emissions will inevitably be higher or lower than these estimates. If actual emissions are higher than estimated, Australia's emissions could exceed the national budget to 2020. If actual emissions are lower, Australia would more than meet its budget to 2020, and the surplus units could be carried over and used after 2020.

The Authority's objective is to recommend caps to meet the 2020 budget, so its primary concern is whether actual emissions would be higher than estimated. If there is a material risk that uncovered emissions would be higher, the Authority could incorporate a buffer to guard against the risk. This approach has some support among stakeholders.

In the past, national emissions projections have tended to be too high rather than too low. For example, the Authority found that emissions projections for the first commitment period of the Kyoto Protocol overestimated emissions from uncovered sectors by 13 per cent on average. Further, future emissions drivers are reasonably well understood and represented in the models used. This suggests uncovered emissions are unlikely to be higher than estimated in the Authority's modelling.

Emissions trends could vary if policies affecting uncovered emissions change; however, the Authority has made a best estimate based on existing legislative settings. If policies strengthened, this would decrease emissions, and Australia would more than meet its emissions budget.

On balance, given the history of overestimation, the Authority considers there is no need to create an emissions buffer under currently legislated policy.

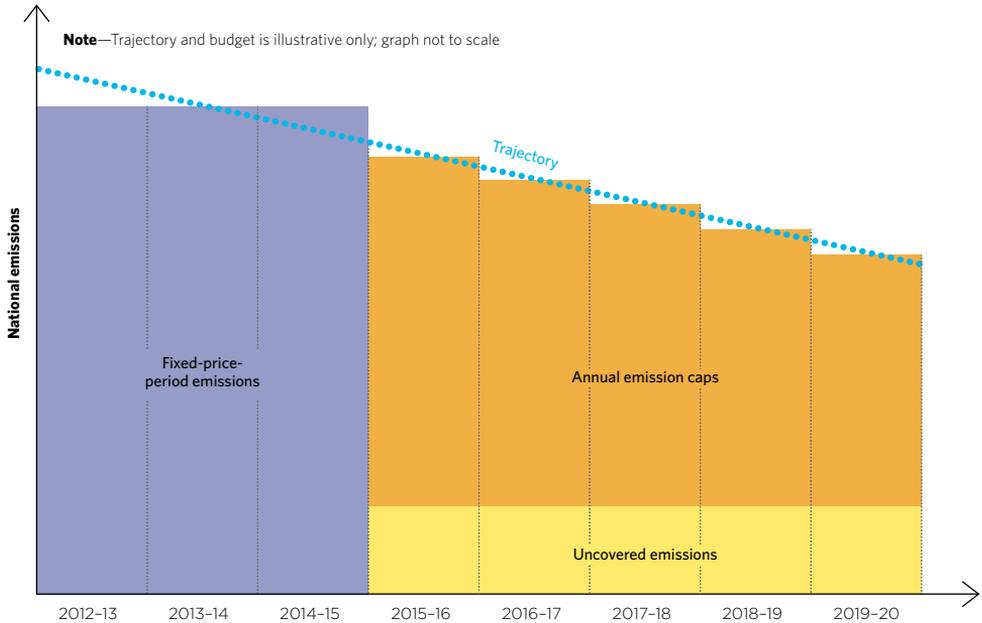
Taking account of the adjustments in Section 13.3, from the total national emissions budget for the period 2013–2020, 1,108 Mt CO₂-e is available for caps to 2020.

13.5 YEAR-BY-YEAR SHAPE OF CAPS

After estimating the proportion of the 2020 budget available for caps, the Authority needs to consider the year-by-year pathway or 'shape' of caps.

The Authority considers that, in general, the shape of caps should follow the slope of the trajectory on a year-by-year basis (Figure 13.4). This is a straightforward and predictable approach that clearly aligns caps with national emissions reduction goals.

FIGURE 13.4: SHAPE OF CAPS—RELEASING CARBON UNITS IN LINE WITH THE TRAJECTORY



Source: Climate Change Authority

In some circumstances, it may be appropriate to change the shape of the caps. As stakeholders, including the Australian Industry Group (*Issues Paper submission*, p. 6), noted, it may be appropriate to reshape either when caps are:

- insufficient to accommodate the free allocation and early auction of Australian carbon units
- at a level that could affect the carbon price, due to limits on international units.

13.5.1 ENSURING SUFFICIENT UNITS ARE AVAILABLE FOR FREE ALLOCATION AND EARLY AUCTION

To ensure consistency with the design of the carbon pricing mechanism, caps should be large enough to accommodate the allocation of free carbon units under the Jobs and Competiveness Program and the Energy Security Fund, and the scheduled early auction of carbon units. Where caps based on the slope of the trajectory are not sufficient to cover these allocations, the Authority would redistribute units across the period.

For the Authority's recommended target, caps that follow the trajectory are likely to be sufficient to cover free allocation and early auction, so no reshaping is required.

13.5.2 ENSURING SUFFICIENT UNITS ARE AVAILABLE TO MINIMISE THE IMPACT ON THE CARBON PRICE

The Authority identified two potential ways in which caps could influence the level of the carbon price, which could be addressed through shaping caps.

First, caps affect whether the 12.5 per cent sublimit on Kyoto units is binding. Kyoto units are currently cheap and abundant, trading well below European prices. If liable entities are unsure whether they need to use the full 12.5 per cent allowance, the carbon price in Australia could be volatile, fluctuating between the Kyoto unit price and the European price. This could be avoided by shaping caps to ensure the sublimit was binding in every year.

The Authority's analysis indicates the Kyoto sublimit is likely to bind in all years under its recommended target, so there is no need to reshape caps.

Second, caps affect whether the overall 50 per cent limit on international units is binding. This limit applies until 2020. If domestic units are in short supply, and the 50 per cent limit becomes binding, the price of domestic units would need to rise above the European price. Caps could be shaped across the period to minimise the risk that the 50 per cent limit would bind in any year.

The Authority's analysis indicates the 50 per cent import limit is not likely to bind in any year, so there is no need to reshape caps.

13.6 RECOMMENDED CAPS

Taking into account the issues discussed in this chapter, caps are recommended for the five years from 2015–16 to 2019–20. Table 13.2 outlines the 2020 budget that is available for caps under its recommended target.

TABLE 13.2: BUDGET AVAILABLE FOR CAPS

National budget (2013–2020)	4,193
Carryover (from first Kyoto Protocol commitment period)	+116
Fixed-price-period emissions (2013–2015)	-1,784
Uncovered emissions (2016–2020)	-1,385
Global Warming Potentials adjustment	-16
Voluntary action (GreenPower and voluntary cancellation of renewable energy certificates)	-16
Government purchase of international units	0
Available for caps	1,108

Note: All figures in Mt CO₂-e. Totals may not sum due to rounding. Uncovered emissions include CFI estimates.

Source: Climate Change Authority, based on data from Treasury and DIICCSRTE 2013, Department of the Environment 2013, GreenPower 2013 and the Clean Energy Regulator

RECOMMENDATION

R.13 Carbon pollution caps for each of the first five years of the flexible-price period under the carbon pricing mechanism of:

Year	Cap (Mt CO ₂ -e)
2015-16	234
2016-17	228
2017-18	222
2018-19	215
2019-20	209

