12 Complementary reforms to support demand management

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| Key points |
| * Locking in the benefits from cost-reflective network charges calls for complementary reforms to the revenue control mechanisms applying to network businesses and to retail price regulation. * The two main revenue control mechanisms used in Australia — weighted average price caps and revenue caps — impose different sets of incentives on network businesses. These not only have implications for cost-reflective pricing and demand management, but also for investment decisions more generally. While weighted average price caps are, in theory, likely to lead to more efficient pricing outcomes, they also allow network businesses to recover more revenue, on average, than a revenue cap. * While each has inherent deficiencies, on balance, the Commission now prefers revenue caps. * The inconsistency of retail price regulation with the long-term interests of consumers has been acknowledged by all governments in the National Electricity Market — evident by the Council of Australian Government’s (COAG’s) agreement in 2006 to a process for its removal in electricity and natural gas. * However, progress under the COAG process has been very slow with only Victoria and South Australia having deregulated retail prices for electricity. * The success of, and returns from, the phased and coordinated suite of reforms proposed in chapters 10 and 11 rests on pricing flexibility, competition and innovation in the retail sector, which can only take place through retail price deregulation. * The COAG process should be expedited to enable retail price regulation to be removed by no later than 2015. This will require the acceleration of the Australian Energy Market Commission’s current timetable of retail competition reviews, particularly for Tasmania and the ACT. * To support favourable outcomes for consumers choosing between retail offers, the removal of retail price regulation should be accompanied by access to an independent national online information tool to help consumers make good choices. * This could build on the Australian Energy Regulator’s existing ‘energy made easy’ online comparison tool. |
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The importance of smart meter technology as a prerequisite to cost-reflective pricing and the adoption of other forms of efficient demand management is discussed in chapter 10. Chapter 11 establishes the changes necessary to achieve a gradual progression to time-based pricing that reflect the additional costs of providing peak capacity.

This chapter focuses on three complementary areas for reform insofar as they are relevant to promoting the benefits of cost-reflective pricing and other forms of efficient demand management:

* control mechanisms applying to network businesses (section 12.1)
* the incentives of network businesses to engage in demand management (section 12.2)
* retail price regulation and the incentives of retailers to pass through cost-reflective network charges to consumers (section 12.3).

The chapter concludes with a brief discussion of the Australian Energy Market Commission’s (AEMC’s) proposal from its Power of Choice review for a demand response mechanism (section 12.4).

## 12.1 Choice of revenue control mechanism — revenue caps versus weighted average price caps

As part of the revenue determination process, the Australian Energy Regulator (AER) calculates the maximum allowable revenue for each network service provider for the following regulatory period. The process by which network businesses can convert the maximum allowable revenue into network prices is known as the ‘revenue control mechanism’. The main control mechanisms currently used in Australia are revenue caps and weighted average price caps (WAPCs) (box 12.1). The variety of control mechanisms used in Australia is largely historical, reflecting the various state-based arrangements that existed before the AER assumed responsibility for the regulation of distribution networks.

The choice of control mechanism has important implications for:

* the incentives of network businesses to set cost-reflective prices
* the ability of network businesses to recover more than the maximum allowable revenue
* the introduction of pricing reforms recommended in chapter 11
* the incentives for network businesses to pursue demand management
* the stability of prices from year to year
* whether network businesses or customers bear the pricing risk associated with changes in demand.

In respect of some of these issues, a lack of data means that it is unclear how large an impact the choice of control mechanism will make. It is also unclear how the pricing behaviour of network businesses would change with the widespread use of smart metering technology and the deregulation of retail prices. As a result, it is unsurprising that there is no clear consensus on the most appropriate control mechanism for electricity networks. For instance, the AER (2012a) has proposed to use revenue caps in the next regulatory period for distribution businesses in New South Wales and the ACT, whereas the AEMC (2012u) has endorsed the continuation of WAPCs.[[1]](#footnote-1)

In the draft report, the Commission recommended that the revenue of all distribution businesses be regulated using WAPCs. Participants submitted a range of responses to the draft recommendation, with some in favour of it and some against (box 12.2).

After reviewing this matter, the Commission is now unconvinced that the efficiency gains associated with network pricing under a WAPC are sufficiently large to overcome other concerns, particularly as the Commission envisages pricing reform being driven through the AER approving network pricing proposals (chapter 11).[[2]](#footnote-2) The Commission now considers that, while both control mechanisms have their advantages and disadvantages, on balance, the revenue cap is the preferable control mechanism for distribution businesses.

While this section focuses on distribution networks, many of the arguments addressed here also apply to transmission networks, which currently operate under revenue caps. In addition, the potential introduction of the AEMC’s optional firm access package will add complexity to the operations of transmission networks. As such, substantial changes to the control mechanism applying to transmission businesses are not warranted at this time.

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| Box 12.1 The different revenue control mechanisms in Australia |
| The control mechanisms used in the National Electricity Market are revenue caps, weighted average price caps (WAPCs) and maximum average revenue caps.  A revenue cap sets the maximum allowable revenue for each year of the regulatory control period. To comply with this revenue constraint, a business forecasts demand across different services for the next regulatory year and sets prices so that the expected revenue is less than or equal to the revenue cap. The business can recover more or less than the allowed amount, but knows that the maximum allowable revenue in future years will be adjusted for any difference between the expected and actual revenue of previous years (using an ‘unders’ and ‘overs’ account). Revenue caps apply to all transmission businesses in the National Electricity Market, as well as to distribution businesses in Queensland and Tasmania.  A WAPC constrains the way that network businesses are allowed to adjust network tariffs. Network businesses can adjust their tariffs to increase network revenue provided that they do not violate the following formula:  where:  pt = the proposed prices for the upcoming year  pt-1 = prices for the current year  qt-2 = volume quantities for the most recently completed year  Xt = the allowed real average price increase  ∆ CPI = the most recent change in CPI  And the double summation signifies that the WAPC formula is calculated across both tariffs and tariff classes.  Under a WAPC, some prices can rise while others fall, as long as the average change, weighted by the quantity of the service sold, does not exceed the regulated rise in prices. These weights, which are based on actual demand from the previous period, can apply to different parts of the tariff schedule, such as the number of customers who pay a fixed charge or the quantity of electricity sold in the second block of a block tariff. The revenue recovered under a WAPC is also influenced by the estimate of demand increase made at the time of a revenue determination. If demand turns out to be more (less) than expected, the network business will receive more (less) than the target. WAPCs apply to distribution businesses in New South Wales, Victoria and South Australia.  The sole distribution business in the ACT operates under a maximum average revenue cap, which puts an upper limit on the average revenue per unit (usually kWh) of electricity sold. That average is calculated by dividing the maximum allowable revenue by the quantity of energy demanded from the most recent year available.  In a preliminary ruling, the AER has opted to use revenue caps for distribution businesses in the next regulatory period in New South Wales and the ACT (AER 2012n). |
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| Box 12.2 Particip ants’ views on revenue control mechanisms |
| Several participants preferred revenue caps:  Since … revenue caps are almost a prerequisite for the enthusiastic adoption of demand management and energy efficiency by utilities, and the usual arguments against adopting revenue caps do not apply, we suggest that the Commission review its recommendations with a view to mandating revenue caps for those network businesses to which they do not yet apply. (EnerNOC, sub. DR83, p. 8)  [Revenue caps] have some other advantages. They leave the consumers and the businesses much less exposed to errors in forecasting of energy consumption, as price caps do at the moment … The weighted average price cap does have some theoretical appeal in terms of the businesses adjusting the weights within tariffs to get an economically efficient outcome. Frankly, we haven’t seen the evidence that the businesses are as sophisticated with their pricing as to take advantage of those theoretical benefits. Consequently our inclination is towards a revenue cap to deal with those things such as the forecasting errors and the opportunity for innovation in tariff design because we’re really not seeing the theoretical advantages being exploited. (AER, trans., pp. 134‑35)  The MEU does not support this recommendation and is unsure why price caps should be mandated. As a matter of principle, price caps encourage networks to seek to increase consumption of electricity as this increases their revenue above the revenue determined by the regulator to be efficient. (Major Energy Users, sub. DR66, p. 42)  Several participants preferred weighted average price caps:  We agree with recommendation 12.1 that “…revenues from all distribution network ‘standard control services’ should be subject to regulated weighted average price (not revenue) caps” on the basis of strong evidence that efficient pricing is enabled under a weighted average price cap … and is (at best) non‐existent under a revenue cap. (NSW Distribution Network Service Providers, sub. DR85, attachment A, p. 4)  We agree with the draft recommendation that distribution network revenue regulation should be subject to weighted average price (not revenue) caps. (EnergyAustralia, sub. DR82, p. 6)  A true productivity-based approach, combined with allowed pricing flexibility for distributors, would create powerful incentives for energy utilities to price efficiently to maximise their profits. Glomming revenue caps onto a cost-based building block regulatory model would do nothing to rectify the underlying deficiencies of that approach. (Pacific Economics Group, sub. DR107, p. 1)  Other participants did not express a strong preference, highlighting that the choice of control mechanism will reflect the weight given to different factors:  It’s very much a sort of risk trade-off from the regulator’s point of view, a view about forecasts, a view about risks of under recovery and over-recovery, so all of the sort of factors which the national electricity objective directs them toward. We’re just sort of agnostic on this issue. (Electricity Networks Association, trans., p. 346) |
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The remainder of this section discusses the criteria relevant to the choice between revenue caps and WAPCs.

### The incentive to set efficient prices

It is generally considered that, in theory at least, a WAPC provides a greater incentive than a revenue cap for network businesses to set efficient prices (AEMC 2012u, p. 218; AER 2012n, p. 57; Ausgrid 2012a, p. 9).[[3]](#footnote-3) However, there are different interpretations of what ‘efficient pricing’ is, with cost-reflective pricing being just one interpretation.

A revenue cap guarantees network businesses a particular level of revenue, subject to meeting reliability requirements. As such, the network business cannot earn extra revenue by adjusting prices. It may be able to reduce its costs of augmentation by increasing prices in congested areas, but in practice, network businesses operating under a revenue cap have historically tended to use relatively passive pricing strategies. (NSW DNSPs 2012, p. 46).

In contrast, under a WAPC, network businesses are able to readjust tariffs to increase the revenue they recover. For instance, a network business can increase the tariffs on customers with inelastic demand, while decreasing tariffs on customers with elastic demand. Such readjustment can also happen across different types of tariffs being charged to the same customer. For instance, the network business may increase the fixed charge (which is relatively demand inelastic) and decrease the variable charge (which is more demand elastic). Network businesses can also set prices higher in congested areas to avoid the cost of augmentation — trading off the lower costs of operating the network against the lower revenue they receive as a result of reducing demand. Setting tariffs in these ways (so-called Ramsey Pricing) is an efficient way of recovering network costs.[[4]](#footnote-4)

However, a network business may also increase revenues under a WAPC by increasing tariffs for particular services that are experiencing sales growth within a regulatory period. As explained by the AER:

… during the regulatory control period DNSPs were able to make windfall gains by increasing the price (above the general increase specified in the WAPC) of components of particular services experiencing sales growth above its forecast. (2012n, p. 128)

It is unclear whether such tariff rebalancing results in more efficient pricing. Unexpected growth in demand may result in a higher likelihood of network congestion and network augmentation. In such a case, a higher network charge may be efficient, as it would reduce demand and relieve congestion on the network. However, if the increased growth in demand triggers a network augmentation, resulting in additional network capacity, a WAPC would still encourage network businesses to set a high price, which would reduce demand on an already uncongested network and, therefore, not be efficient (at least over the short term).

The compatibility of revenue caps and WAPCs with short-run marginal cost and long‑run marginal cost pricing, including the Commission’s pricing proposals in chapter 11, are discussed later in this section.

#### Is there evidence of more efficient pricing under weighted average price caps?

It is unclear whether the theoretical incentives to set prices more efficiently under a WAPC have translated in practice into more efficient prices. The AER found that the theoretical incentives for efficient pricing were not observed in practice (2012n, p. 47).[[5]](#footnote-5) However, the NSW DNSPs (2012, p. 46) noted that distributors currently facing revenue caps (in Queensland, Tasmania and the ACT) have priced purely on flat tariffs, whereas the majority of other distributors, who face WAPCs, have used (non time-based) block tariffs and are moving towards time of use pricing. Similarly, Ausgrid (2012a) noted that changes to their tariffs, to be more reflective of costs, were an outcome of the WAPC and that they would not have responded in this way under a revenue cap (pp. 11‑13).

The Commission considers that while there is evidence of more proactive pricing policies from network businesses under WAPCs, there is very little evidence that this has resulted in more efficient pricing. It agrees with the AER that the use of block tariffs is not, in itself, evidence of more efficient pricing (AER 2012a, p. 18).

The lack of evidence of more efficient pricing under a WAPC may largely be attributed to the absence of smart meters, along with the influence of state and territory governments on a network business’s pricing proposals to the AER. As a result, it is difficult to draw a strong conclusion about how WAPCs may operate in the future, if smart meters become more widespread and state and territory governments have less direct influence over the operation of electricity networks.

### Over-recovery of revenue

Under a revenue cap, distribution businesses know at the beginning of a regulatory period how much revenue they are to receive. If they recover more or less than this amount in a given year, then the revenue they are allowed to recover in a future year will be adjusted accordingly. This provides relative certainty that they will be able to recover the efficient costs of maintaining and operating the network, which will vary only slightly with demand over the short term.

In contrast, WAPCs provide network businesses with financial incentives to adjust their tariffs. As a result, the amount of revenue that is recovered varies from year to year and, in general, will tend to allow network businesses to recover more than the maximum allowable revenue calculated during the building block process.

In addition to the ways noted earlier in which a network business can adjust tariffs to increase revenues, WAPCs also allow the network business a greater opportunity to game the regulatory system. WAPCs create incentives for network businesses to be conservative when forecasting average demand, such that they consistently err on the side of underestimating average demand. This will result in a higher WAPC and higher levels of recovered revenue. If actual demand turns out to be higher than the conservative forecast, then network businesses are able to recover more than the maximum allowable revenue.

This is consistent with the incentives discussed in chapter 5 to overestimate demand forecasts for the purposes of approving capital expenditure (capex) proposals. Capex forecasts are heavily influenced by peak demand forecasts, while WAPCs are based on forecasts of average demand. Thus, it is in the financial interests of a network business to underestimate average demand while overestimating peak demand.

Given the incentive for network businesses to underestimate average demand forecasts, their estimates are carefully scrutinised by the AER. However, it is likely that a slightly conservative demand forecast would still be considered to fall within a reasonable bound of accuracy and be accepted by the AER. This reflects a more general point that, under a WAPC, demand forecasts become more important as well as more complicated, because the AER must assess the accuracy of forecasts across all tariffs rather than just the accuracy of peak demand forecasts.

#### Is there evidence that network businesses recover more than the maximum allowable revenue under a weighted average price cap?

Some participants have suggested that network businesses operating under WAPCs have been able to systematically recover more revenue than the maximum allowable revenue calculated using the building block process. For example, the AER said that:

While the AER rigorously tests the forecasts proposed by the DNSPs, actual data for DNSPs with WAPCs (compared with the forecast data on which the WAPCs have been set) show actual sales volumes often, and perhaps consistently, exceed forecasts. (2012a, p. 11)

The AER also pointed out that in the 2006–10 regulatory control period, Victorian distribution businesses (under a WAPC) recovered $568 million, or 8.28 per cent more than the maximum allowable revenue (AER 2012n, p. 128).

Further analysis performed by the AER suggests that over-recovery of revenue under a WAPC is common, although given the limited history of WAPCs and the various jurisdictions in which they operated, it is difficult to distinguish the extent to which network businesses are able to over-recover revenue in the long run. It is also difficult to separate the impact of demand forecast errors and tariff restructuring on the total level of revenue over-recovery.[[6]](#footnote-6)

#### Incentive effects of over-recovery on investment decisions

As well as leading to higher network costs directly, over-recovery of revenue under a WAPC may indirectly give a network business an incentive to overinvest in its network. If a network business knows with reasonable certainty that it will be able to over-recover revenue in the long term, it will have a similar incentive to that arising from an overestimated weighted average cost of capital (an issue discussed in section 5.3). A network business may overinvest in network assets, knowing that when it recovers funds through the return on investment and depreciation allowance, it is likely to receive additional funds.

The extent to which there is an incentive to overinvest depends on how much revenue a network business can gain by adjusting its tariffs, which as discussed above, is difficult to determine. However, if networks were confident of recovering 2 per cent more than the maximum allowable revenue over the long term (a not inconceivable number), it would seriously undermine the incentives for network businesses to reduce expenditure.

#### Are the gains from efficient pricing under weighted average price caps worth the higher prices?

A WAPC, at least in theory, provides financial incentives to set prices more efficiently, and in doing so allows the network business to recover more than the maximum allowable revenue calculated using the building block approach. This is not necessarily a problem. For instance, if the gains from more efficient pricing outweigh the costs of having higher network charges this would be seen as worthwhile, and can even be characterised as an extension of the incentive regulation framework.

However, based on the evidence discussed above, the use of WAPCs has resulted in (some cases quite significant) increases in network prices, with only minimal evidence of improvement in pricing efficiency. This suggests that it is highly unlikely that pricing efficiencies achieved under WAPCs have been worthwhile. Nevertheless, as discussed previously, it is not clear whether this would be true in the future, if smart metering technology were more widely available and state governments had less influence over the price setting process.

### Other factors that influence the choice of revenue control mechanism

The Commission considers that the incentives to set efficient prices and the over-recovery of revenue are the main considerations affecting the choice between revenue caps and WAPCs. However, there are other criteria, some raised by participants, that are also relevant.

#### Compatibility with the Commission’s pricing proposals in chapter 11

The Commission notes that, while WAPCs provide some incentive to set cost‑reflective prices, neither WAPCs nor revenue caps provide network businesses an incentive to set prices at long‑run marginal cost. Therefore, in order to achieve cost‑reflective prices based on long‑run marginal cost in the National Electricity Market (NEM), it is necessary to regulate prices directly, rather than relying on network driven pricing reform.

In chapter 11, the Commission has proposed cost-reflective, time-based pricing for distribution network services, predicated on the long‑run marginal costs of meeting peak demand. The Commission has recommended that this should be implemented through the Standing Council on Energy and Resources (SCER) and involve, among other things, changes to the National Electricity Rules and the development by the AER of relevant guidelines (recommendations 11.1‑9).

Cost-reflective pricing, as proposed by the Commission, is likely to be easier to implement in conjunction with revenue caps, rather than WAPCs. This is because the weights used in a WAPC are normally calculated using historical demand data. In any major restructuring of tariffs, such as the wide-scale introduction of critical peak pricing, relevant historical demand estimates would not be available and the weights used in the WAPC would have to be estimated.[[7]](#footnote-7) These estimates would have large financial implications, with the network businesses motivated to push for low demand forecasts in order to receive approval for higher prices.

The incentive to underestimate future demand does not exist under a revenue cap. While cost-reflective pricing will require detailed demand estimates, there is no financial incentive under revenue caps to bias the estimate. As such, there is a better chance of both the network business and the AER approaching this task without a predetermined agenda.

#### Compatibility with demand management

In general, network businesses under WAPCs would not have an incentive to reduce demand, as this would reduce their revenue. This is not true of revenue caps, which guarantee the revenue that a network business can recover even if a demand management program successfully reduces demand within a period. As such, many participants have favoured revenue caps for their compatibility with demand management (AER 2012n, p. 61; EnerNOC, sub. DR83). Several governments, such as those in the United States, have moved towards revenue caps for this reason (NARUC 2007, p. 8).[[8]](#footnote-8)

Recognising this aspect of WAPCs, the AER administers a scheme — the demand management and embedded generation connection incentive scheme (DMEGCIS) — ‘part B’ of which is designed to compensate distribution businesses under WAPCs for any revenue they forego from undertaking cost-effective non-tariff based demand management.

Given the scheme’s objectives, network businesses should have incentives to pursue demand management programs that are broadly equivalent under either a WAPC or a revenue cap. However, as discussed in section 12.2, there is some contention about the effectiveness of the scheme. In particular, the AER has previously expressed concern regarding the high degree of complexity of the foregone revenue calculations. (AER 2012g, p. 14).

#### Pricing stability

Highly volatile prices are undesirable for two main reasons. First, customers generally want to have stable (and low) electricity prices and wish to avoid ‘bill shock’. Second, prices that vary substantially are unlikely to be consistent with long‑run marginal cost pricing, which is the Commission’s preferred methodology for calculating network prices (chapter 11).

Both revenue caps and WAPCs can introduce pricing volatility, but in different ways.

Under a revenue cap, prices are adjusted each year based on the ‘unders and overs account’, which is determined by revenue collected in the previous year and has no connection to demand in the upcoming year. For example, if demand is unexpectedly high (perhaps due to a persistently hot summer), then a network business would recover more than its allowable revenue. In subsequent years, prices would be reduced to compensate for this over-recovery.

If this type of pricing variability proves to be too volatile, it could be smoothed by allowing the unders and overs account to be depleted over a longer period. The AER’s current methods of applying revenue caps take some steps to smooth out the pricing variability.[[9]](#footnote-9) These methods could be amended (if considered desirable) to enable smoothing over a longer period (which could exceed the current five year regulatory period).

Under a WAPC, prices are susceptible to large jumps at the end of the regulatory period. This occurs because the demand forecasts used to set the annual adjustments in the WAPC are only made every five years as part of the regulatory determination process. Therefore, if actual demand is different from forecast demand, prices cannot be corrected until the end of the regulatory period, at which point there can be a large price adjustment. In contrast, under a revenue cap, demand forecasts are updated annually, which lowers the likelihood of large, one-off movements at the end of the regulatory period. (AER 2012n, p. 59)

WAPCs also introduce variability to customer tariffs because, as discussed above, they are designed to encourage network businesses to adjust tariffs within a regulatory period. For example, table 12.1 shows the annual adjustments in tariffs paid by Ausgrid’s medium business customers. While this is only a single example and does not provide any information about how common such tariff adjustment is, it does highlight the types of adjustments that are encouraged under a WAPC.[[10]](#footnote-10)

Table 12.1 Variability of tariffs under weighted average price caps

Tariffs applied to medium business customers by Ausgrida

|  |  |  |  |
| --- | --- | --- | --- |
| Change in charge from previous year | 2010-11 | 2011-12 | 2012-13 |
|  | Per cent | Per cent | Per cent |
| Fixed charge | 40.3 | 98.4 | 175.0 |
| Peak energy charge | 28.1 | 9.0 | 117.0 |
| Shoulder energy charge | 10.5 | 27.8 | 8.7 |
| Off-peak energy charge | -48.7 | 44.7 | 37.0 |
| Peak capacity charge | 43.4 | 94.1 | 18.5 |

a Tariff class EA302 applied to medium business customers on time of use tariffs.

*Source*: AER (2013d).

In summary, both revenue and WAPCs introduce network pricing instability, but they do so in different ways. It is not clear which control mechanism will have a larger impact on customers. As such, it should not be a major consideration in choosing between them.

#### Who bears the risk of high or low demand?

Several participants have suggested that identifying the party bearing the pricing risk from changes in demand is an important criterion for choosing an appropriate control mechanism (Ausgrid 2012a, p. 15; EnerNOC, sub. DR83, p. 7; Essential Energy 2012, p. 4).

Under a WAPC, network revenues fluctuate based on actual demand, while in the short term, the efficient costs of meeting demand vary only slightly with demand. As a result, network businesses are exposed to the risk of short-term demand fluctuations. In years of high demand, a network business will receive more revenue and, therefore, more profits than forecast. In periods of low demand, a network business will recover less revenue and may make a loss.

In contrast, under a revenue cap, the risk of high or low electricity prices is borne by consumers. This occurs because total network revenue is fixed under a revenue cap and, if average demand decreases (increases), the average price will rise (fall) to keep revenue stable.

Where demand changes, pricing risks arise and must be borne by either network businesses or customers. As discussed in chapter 5, incentive regulation aims to place risks with network businesses where they are able to manage that risk.[[11]](#footnote-11) Where network businesses are unable to manage risks, they should pass this exposure on to consumers (as is the case with a revenue cap), where at least the risk is diversified by spreading it out across a wider group. This also allows network businesses to achieve stable returns and access low borrowing costs.

### Summing up

The choice between revenue caps and WAPCs is not clear cut (table 12.2). Indeed, experienced and knowledgeable stakeholders disagree on the ideal choice of control mechanism.

Table 12.2 The choice between revenue control mechanisms

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| --- | --- | --- |
|  | Weighted average price caps | Revenue caps |
| Theoretical incentives for efficient pricing? | Yes, but little evidence that efficient pricing occurs in practice. | Poor incentives |
| Revenue over-recovery? | Yes | No, as revenue is controlled. |
| Compatible with the PC’s pricing proposals in chapter 11? | Scope for gaming demand forecasts. | Yes |
| Compatible with demand management? | Yes, but only if the demand management and embedded connection incentive scheme works as intended (see later). | Yes |
| Pricing fluctuations? | Yes, moderate | Yes, moderate |
| Who bears demand risk? | Network businesses | Consumers |

WAPCs theoretically provide network businesses with an incentive to set cost‑reflective network prices, although it is unclear the extent to which this might translate into efficient pricing decisions in practice. They also provide network businesses with an ability to over-recover revenue, which will result in transfers from customers to network businesses and weaken the incentive for network businesses to control their expenditure.

Revenue caps remove the ability of network businesses to over-recover revenue and provide them with a more stable source of long‑term profits. They are more compatible, than WAPCs, with demand management options and the Commission’s pricing recommendations in chapter 11. Revenue caps are also less reliant on accurate demand forecasts than WAPCs.

In the Commission’s view, the major consideration is whether the incentives to set prices efficiently under a WAPC are sufficient to compensate for the additional revenue that can be recovered under the cap. While there may be some efficiency gains associated with WAPCs, they are likely to be small compared with the increased revenue that can be recovered. Therefore, the Commission agrees with the AER, that on balance, revenue caps are the more appropriate control mechanism for distribution businesses.

Recommendation 12.1

The Australian Energy Regulator should use revenue caps, rather than weighted average price caps, in the regulation of all distribution businesses.

## 12.2 The incentives of network businesses to undertake demand management

In operating their networks, network businesses must decide between investing in physical assets and undertaking non-network alternatives, such as demand management projects and embedded generation. Ideally, network businesses will face an unbiased decision between network investment and other alternatives, with the profit maximising interests of network businesses coinciding with the long‑run interests of consumers.

However, there are several reasons why, at present, the network business’s decision might be skewed unduly towards undertaking network investments. These include that capital expenditure is automatically rolled into the regulatory asset base at the end of the regulatory period, or that capital expenditure is unduly compensated through an artificially high WACC. It is also possible that state-owned network businesses may over-invest in capital expenditure to profit from low public borrowing costs (chapter 5).

The Commission has suggested a number of reforms to correct this underlying bias towards capital investment including:

* measures to improve the accuracy of the regulatory WACC
* the introduction of an efficiency benefits sharing scheme to ensure that network businesses earn an equal return from reductions in capital or in operating expenditure
* an ex post review mechanism that can be used to assess the efficiency of capital expenditure before it is rolled in to the regulatory asset base
* privatisation of state-owned network businesses.

Even if these reforms were implemented, the regulatory structure may still favour the construction of physical assets over non-network solutions such as demand management. This is because:

* demand management is still a relatively new development, with some debate about its effectiveness and appropriate design
* the use of demand management in distribution networks provides spillover benefits, including reduced costs in the transmission network and wholesale electricity market, which a network business is unlikely to consider when making its investment decision
* under a WAPC, network businesses have a reduced incentive to use demand management as it will result in less demand and, therefore, less revenue.

To address the concern that the regulatory design favours physical assets over non‑network options, the AER operates the demand management and embedded generation connection incentive scheme (DMEGCIS). This scheme is not meant to be the primary source of recovery of demand management expenditure. Rather, it is intended to complement the incentive regulation structure and correct any disincentives that might discourage network businesses from undertaking demand management. While the Rules allow the AER discretion about how it applies the DMEGCIS, to date it has applied the scheme in a narrow manner, which currently includes two parts:

* Part A is an innovation allowance (called ‘the Demand Management Innovation Allowance’) that provides a modest level of funding to network businesses to undertake demand management.
* Part B is a payment designed to neutralise incentives which otherwise exist under a WAPC to maintain or, indeed, increase levels of demand.

In its recently completed Power of Choicereview (AEMC 2012u), the AEMC recommended a number of possible changes to the DMEGCIS, while leaving the detailed design and implementation of the scheme to the AER.

The remainder of this section considers these and other changes to the scheme that the Productivity Commission considers would be desirable.

#### The value of information and innovation

The innovation allowance provides funding to network businesses to trial innovative demand management schemes that they would otherwise have been unable to fund. Such trials provide information for the network business and the regulator to better calculate the efficient level of demand management in the NEM. To date, the innovation allowance has been relatively small, totalling no more than $1 million per year for each distribution business.

The appropriate scope and magnitude of the innovation allowance has been debated. On the one hand, increasing the use of cost-reflective pricing in the NEM will require information, gained through trials and experimentation, which could be funded by the innovation allowance. For instance, information will be required to:

* accurately assess the costs and benefits of smart meters
* support the functions set out in recommendations 11.5 and 11.6, which include the AER approving reasonable forward-looking forecasts of peak demand and estimates of the long‑run marginal cost of peak capacity, and modelling the demand responsiveness of end-users to cost-reflective pricing.

On the other hand, if other changes to the DMEGCIS (such as those discussed below) result in a significant increase in commercially viable demand management, there is less justification for the innovation allowance.

The Commission considers that in the short term, unless other changes are made to the DMEGCIS to encourage demand management, the innovation allowance should be increased. This view has been supported by several network businesses (Ausgrid 2012f; CitiPower et al., sub. DR90).

The Commission also considers that the innovation allowance should fund pricing trials and other (peak) demand management experiments that meet relevant criteria:

* Conditions on the funds made available should recognise the beneficial impact of spillovers from such research and trials, and require the availability of trial data for wider public analysis.
* Pre-approval of funds should be required, which should ensure robust experimental design and consistent observation of variables, including characteristics of end-users. Where appropriate, progress payments should also be used, especially for larger projects. There should be a capacity to provide payments to retailers involved in the trials, as their participation and cooperation will often be critical to the success of the trials.
* Final payment would require that the AER receive all data, which should then be ‘de-identified’ and made available to third parties for analysis, including academic institutions.
* The data should be analysed to yield estimates of price responsiveness, assist with tariff design and inform the AER in undertaking cost-benefit analysis of smart meters.

#### Beneficial spill-overs

Demand management initiatives undertaken by distribution businesses may also lead to reduced costs in the transmission network and wholesale electricity market. As the distribution business does not get rewarded for these effects, it is likely that some demand management projects would not be provided by distribution businesses where it would be socially beneficial to do so.

In its Power of Choicereview (AEMC 2012u), the AEMC recommended an incentive payment be incorporated in the DMEGCIS that provides network businesses with a share of the beneficial spillovers from demand management.

The Commission notes that the AEMC also recommended that these benefits should be calculated on a project-by-project basis. This is likely to be both difficult and costly in practice. An alternative is for the AER to calculate the average spillover from a sample of demand management projects and use this as the basis for the incentive payment for all projects. While this might lead to less accurate estimates, it would improve the incentives to undertake demand management compared with the status quo and may prove to be a more cost effective way to implement such payments.

#### Correcting for incentives under a weighted average price cap

As discussed earlier, network businesses operating under a WAPC do not naturally have an incentive to undertake demand management, as this would result in lower revenues. To correct this, part B of the DMEGCIS is intended to compensate network businesses when demand has been reduced as the result of an approved demand management project.

However, some participants criticised the administration of this aspect of the scheme. For example, EnerNOC described the process as:

… an awkward, inefficient approach, as each demand management project requires separate approval by the AER. As well as causing bureaucratic overhead, this leads to [Network Service Providers] perceiving a risk that they will not be reimbursed. (sub. 7, p. 2)

The AER has also expressed concern regarding the complexity of the scheme (AER 2012g, p. 14).

The Commission notes that moving to revenue caps (recommendation 12.1) will make this part of the scheme redundant.

#### Are further measures needed?

As noted earlier, along with the above changes to the DMEGCIS, there are several recommendations in this report (for example, the introduction of an efficiency benefit sharing scheme and changes in the WACC framework) that would improve the incentives for network businesses to undertake demand management by removing regulatory biases towards capital investment.

However, if the implementation of the Commission’s recommendations were to significantly fall behind schedule, or if there was evidence that opportunities for efficient demand management were being forgone by network businesses, the AER should investigate expanding the scope of the DMEGCIS to provide network businesses with additional incentive payments or penalties.

## 12.3 Retailers’ incentives and price regulation

Currently, retailers compete mainly on the price packages they offer to end-users, the efficiency of their billing approaches, and on the effectiveness of their marketing to attract new customers. To allow them to present an attractive package to customers, they have to be able to exercise tight control over their costs through activities such as:

* their capacity for efficient hedging
* their ability to contract with generators (in some cases, through common ownership between retailers and generators to provide a natural hedge)
* efficient IT and billing systems
* their access to competitive finance to efficiently fund their working capital.

Industrial customers aside, retailers have little capacity or incentive to create new products for customers who would prefer lower electricity prices in exchange for reduced demand at peak times. This reflects that:

* retail price regulation in the residential market (and, in some jurisdictions, the small-medium business market) preserves the cross-subsidies from non-peaky customers to peaky consumers, which reduces the price advantages for consumers who are willing to curtail their peak demand use
* smart meters are mostly not available to facilitate more innovative time of use tariff packages, including demand management services.

The result is restricted choice for consumers.

Chapter 10 outlined a process for the gradual rollout of smart meters and chapter 11 outlined ways in which benefits could be delivered from that investment through the implementation of appropriately structured network charges. The benefits from each of those changes (and indeed the argument to implement these changes) would be jeopardised by a retail sector that lacked sufficient competition. Likewise, the benefits would be reduced if retail businesses were slow to adjust to a new market model (one in which consumers could be provided much wider choice in tariff offers and demand management services). Accordingly, to support the Commission’s package of reforms, an important preparatory reform is required — the removal of all retail price regulation and the removal of compulsory default retail schemes that effectively place a cap on prices offered in the jurisdiction. The case for this reform and how it might be accelerated is discussed immediately below. The following sub-section then assesses how the behaviour of retailers would be expected to change.

### Retail price regulation

State and territory governments introduced retail price regulation for electricity as an adjunct to the deregulation of integrated monopoly services, with the intention that it be a transitional consumer protection measure until competition developed. It was to be subject to review and removal once full retail contestability had been established.

The merit of retail price regulation as an *interim* tool is not debated. However, once contestability between retailers is achieved, retail price regulation has little role to play, with competition among retailers serving consumers’ interests most appropriately and keeping retail margins in check over the longer term.

Retail price regulation should not be used to address affordability issues, including by keeping prices artificially low. Doing so, even for short periods, can deter the entry of new retailers, cause the exit of existing retailers and, thus, reduce potential competition and innovation, which ultimately leads to inferior outcomes for consumers (AGL Energy, sub. DR86, attachment; Energy Retailers Association of Australia, sub. DR76; Origin Energy, sub. DR64).

Accordingly, the Commission, along with many others, has previously advocated the removal of retail price regulation for electricity, recognising its inconsistency with the long‑term interests of consumers (for example, PC 2008, 2012b; DRET 2011).

To date, only Victoria and, just recently, South Australia have removed retail price regulation for electricity, despite COAG having agreed in 2006 to a process for its removal, subject to assessment of retail contestability in each jurisdiction by the AEMC. (The slow progress in deregulating retail prices is discussed later).

Regulated retail prices are set by state and territory regulators under delegation from the relevant Minister. The regulated ‘standing offer’ or a ‘notified’ price is then required to be available to residential and some smaller business consumers.[[12]](#footnote-12) Consumers can choose to purchase (unregulated) market offers, although these are effectively ‘capped’ by the standing offer, with market offers typically taking the form of a percentage reduction from the benchmark of the standing offer.

The emergence of competition is affected by the amount of ‘headroom’ between the standing offer price and a retailer’s actual supply costs, since that margin provides the incentive for entry of new retailers. If there is no headroom, or worse still, if the regulated standing offer price is held below costs, the likelihood of a vibrant retail market is significantly reduced. Incumbent retailers are then also likely to exit the market.

The dependency between the regulated and unregulated product is reinforced by some consumers’ perceptions that a control on prices signals a ‘good deal’, discouraging them from ‘switching’ to a potentially cheaper market offer. (A lack of switching or customer inertia can further stifle competitive outcomes and frustrate the achievement of lower prices.)

However, there is evidence that consumers can do significantly better under most market rates offered by competing retailers than remaining on a regulated product and, as indicated in figure 12.1, usually to the tune of several hundred dollars a year. (This does not apply in Tasmania, where there is currently only one retailer, and there is little evidence of cheaper deals in the ACT given the incumbent’s dominant market position.) Also of concern is that one analysis has found that lower-income consumers are significantly over-represented among those on the more costly regulated retail product (ESCOSA 2006).

Figure 12.1 Annual savings from market offers**a**

Frequency of offers (vertical-axis) by category of annual dollar savings (horizontal axis) when compared with the standing offer in 2012b

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a Excludes green energy offers. b A broad geographical range of postcodes surveyed (n=10); assuming medium range annual consumption of 2100 kWh. c While Victoria no longer has retail price regulation, standing offer tariffs are still gazetted (under the Electricity Act 2000) to apply in cases where customers have not yet entered into a market contract. d Annual price savings may not reflect the current potential for savings, given the recent ‘freeze’ of regulated retail charges (tariff 11).

*Data source*: http://www.switchwise.com.au/.

In Queensland, the standing offer has removed significant headroom following the introduction of the 12-month tariff freeze in July 2012. As such, market offers would now generally be above the regulated rate and the removal of retail price regulation would likely see prices increase in the short term. While the intention of the freeze was to lower the cost of living, it does not serve consumers’ interests well in the longer term. Rather than imposing retail price regulation, governments need to address the underlying cost pressures on prices — including by implementing the suite of measures proposed in this report.

Because retail price regulation hinders the development of a competitive retail market, its removal may initially increase prices if incumbent retailers take advantage of their market power to increase profits. However, any increase in profits would quickly attract new entrants to the market and increase competition, resulting in lower prices over the longer term. Nevertheless, governments may prefer to adopt a more gradual approach to removing retail price regulation in jurisdictions where it has prevented a competitive retail market developing. That could include the phasing out of retail price regulation by making it progressively less ‘binding’ over time with a view to lessening their influence on the market permanently once competitive outcomes are more certain. During any such process, it would be important to raise consumer awareness about the ability to get a ‘better deal’ from purchasing electricity services from the market. (However, any such communication should not be presented as a guarantee, since there may be some less scrupulous retailers — as is the case in any competitive market.) Consumer awareness and ‘caveat emptor’ remain important considerations as for most products that consumers buy every day.

Governments would clearly be interested in minimising risks for consumers whose inexperience in purchasing their electricity from a competitive market could result in them signing on to a worse deal. Similarly, it could help to drive competition by shining a light on the relative competitiveness of retail market offers. To that end, there would be benefits in ensuring that consumers have access to an independent source of comparison information when choosing among retail contracts. Already, online sources of comparison information exist, but maintaining the independence and, in turn, consumers’ confidence in such information is crucial. A national online tool would be most effective to brand and market to consumers, which could build on the existing ‘energy made easy’ online comparison site established and maintained by the AER (as part of its new retail responsibilities under the National Energy Customer Framework).

While previous grounds for removing retail price regulation were sound, the fact that most consumers do not have smart meters has significantly limited the scope for more innovative time-based tariff offers to drive competition at the retail level and efficiencies in the network. This suggests that the potential benefits for consumers from the removal of retail price regulation may be even greater in future than when it was initially agreed by COAG.

The success of the phased and coordinated suite of reforms proposed in chapters 10 and 11 rests on pricing flexibility, competition and innovation in the retail sector, which would be promoted through retail price deregulation. The benefits, while not eliminated, would be significantly smaller were retail price regulation retained.[[13]](#footnote-13)

Retail price regulation prevents consumers from facing more efficient price signals — a point widely acknowledged by participants:

What is clear is that exposure to efficient prices is likely to be the most significant driver of change to end use electricity demand. However, this is unlikely to happen whilst retail price setting remains largely in the hands of government. (Loy Yang Marketing Management Company, sub. 25, p. 3)

With progression towards time-based network charges, retailers will play a key role in fashioning and re-packaging tariff offers to meet a wide range of consumer preferences and needs. This includes different levels of exposure to peak prices, different levels of price smoothing (in exchange for an appropriate premium) and different billing periods to assist with budgeting.

To assist households in managing their exposure to higher peak prices in the future, and to take advantage of opportunities to make savings by shifting the timing of their electricity use, retailers will need to add value to their existing service range. This will be likely to involve providing:

* electricity demand management services, including assessments of household appliances and bill consultations
* add-on technologies to optimise the use of smart meters, provide real time in home consumption information, warn customers in advance of peak consumption days, warn customers about bills exceeding a pre-agreed threshold in a billing cycle, and, where desired by consumers, facilitate load control services, or automate other aspects of electricity use.

Price regulation applied to a time-based tariff would be complex and costly for state and territory regulators to administer in order to avoid locking-in cross-subsidies for peaky users (box 12.3). This mainly reflects that the authorities determining regulated prices would find it difficult to adjust for the changing average load profile (and associated cost) of supplying the group of customers served by the regulated (load weighted average) price.

#### Accelerating retail price deregulation

COAG agreed in 2006 to a process of phasing out retail price regulation for both electricity and natural gas where ‘effective retail competition can be demonstrated’ by the AEMC (box 12.4).

However, progress under the COAG process has been very slow and, in the absence of change, is likely to continue to be so.

* To date, the AEMC has completed reviews of retail competition in only three jurisdictions — Victoria (in 2007), South Australia (in 2008) and the ACT (2011) — and recommended the removal of retail price regulation, accompanied by the implementation of consumer awareness and price monitoring measures in each case (box 12.4). The Victorian Government responded by removing its retail price regulation in 2009. The South Australia Government initially rejected the AEMC’s advice, but deregulated its retail prices some four years later in February 2013. The ACT Government rejected the AEMC’s advice and decided to retain its retail price regulation for a further two years (until 2013), due to concerns that the removal of retail price regulation would lead to increases in electricity prices.
* Although there is a timetable for AEMC reviews of jurisdictions with retail price regulation, even were the reviews to proceed as scheduled, they would not all be completed before 2016. Further, COAG’s December 2012 implementation plan for energy market reform does no more than require those state and territory governments with retail price regulation to report to SCER by the end of 2013 on clear transition plans to price deregulation, among other things.

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| Box 12.3 The impracticality of regulating a time-based retail price |
| It would be very challenging for a regulator to appropriately calculate the regulated price of a time-based retail product. In particular:   * the price that would recover a retailer’s efficient costs would change with the timing of a customer’s actual consumption, which would vary from season-to-season and year‑to‑year * the weighted price that reflects the *average* load profile of a potentially large group of consumers would be too high for some households and too low for others — in effect ‘writing a cheque’ from less peaky users (which typically also have lower incomes) to ‘peakier’ users * since those households with peakier patterns of use would not bear the full costs of their electricity use, any incentive for them to reduce their peak consumption and shift power use to non-peak times is substantially weakened. The upshot is a higher average price, reflecting the need for an inefficiently high level of investment in peak-specific capacity, which may further distort efficient consumption choices * less peaky users on the regulated tariff could source a better deal from the retail market, so would migrate from the regulated tariff. Predicting the rate at which less peaky consumers take up market offers would be difficult, with estimates of the average consumption profile and regulated price of the group remaining on the regulated product requiring accurate information and sophisticated analysis.   Another major obstacle to implementing and administering price regulation on cost‑reflective tariffs is that it would be difficult to incorporate geographic differentiation of charges into a single regulated product.  To counter these problems, the regulated price would have to:   * be set often (which would incur an extremely high administrative cost) * increase substantially over time (which could risk government interference).   Realistically, any regulated price could only be re-weighted and calculated annually, which could lock-in significant errors. The extent of errors would depend upon the accuracy of assumptions about:   * the price responsiveness of consumers to the structure and level of time-based prices * the representativeness of the estimated average load profile of the group of households served by the tariffs, which as noted above, would be a moving feast as consumers switched to cheaper market offers.   Even if errors were minimised, cross-subsidies and inefficient consumption behaviour would continue, driving prices higher than they should be over the longer term. |
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| Box 12.4 What progress has been made in phasing out retail price regulation? |
| COAG agreed in 2006 to a process for phasing out retail price regulation for electricity and natural gas where ‘effective retail competition can be demonstrated’ (Australian Energy Market Agreement, clauses 14.10–17). The AEMC is tasked with assessing the effectiveness of retail competition in each jurisdiction (apart from Western Australia being outside of the NEM). If it finds that retail competition is effective, it must advise on ways to phase out retail price regulation. If it finds that competition is not effective, it must identify ways to promote the growth of effective competition. State and territory governments make the final decision on this matter. The AEMC reviews are conducted according to a schedule determined by the MCE (now SCER).  To date, the AEMC has completed retail competition reviews for just three jurisdictions — Victoria, South Australia and the ACT.   * In its reviews of the Victorian and South Australian energy markets in 2007 and 2008, respectively, the AEMC found competition was effective in both markets and recommended that retail price regulation be discontinued and replaced with a price monitoring regime. The Victorian Government accepted the AEMC’s recommendations and removed retail price regulation on 1 January 2009. However, the South Australian Government did not accept the AEMC’s recommendations; it was concerned that more than 30 per cent of small energy customers remained on standing contracts with regulated prices and that stakeholders were polarised in their views on the effectiveness of competition. It was not until 1 February 2013 that the South Australian Government deregulated retail prices. * In its review of the ACT energy market between 2010 and 2011, the AEMC found that competition in the ACT small customer market was not effective, partly because customers were unaware of their ability to switch retailers. It recommended removing retail price controls from 1 July 2012 in conjunction with other measures such as running a consumer education campaign to increase awareness of the benefits of competition and a price monitoring regime. However, the ACT Government decided to retain retail price controls for another two years as it considered that removing them would increase the average cost of electricity, which would not benefit consumers.   The AEMC commenced a review of the New South Wales energy market in late 2012, which it is required to finalise by 30 September 2013. Further AEMC reviews are scheduled for Queensland (2013), the ACT (2016) and Tasmania (within 18 months of full retail contestability being introduced).  (Continued next page) |

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| Box 12.4 **(continued)** |
| In COAG’s December 2012 implementation plan for energy market reform, key recommendations on the deregulation of retail prices included that jurisdictions with retail price regulation:   * work towards effective competition where it does not exist to allow greater opportunities for innovation in, and choice of, retail offers, and to provide advice to SCER by end of 2013 on the current state of competition and policy settings to fulfil this commitment, including where appropriate, clear transition plans to price deregulation * that have previously been advised by the AEMC to deregulate prices (namely, the ACT) to re-evaluate that advice and report back to SCER by end of 2013 on the potential to act on that advice.   In relation to Tasmania, the State Government’s reforms to the electricity supply industry announced in May 2012 and expanded upon in March 2013 included the following elements:   * the introduction of full retail competition from 1 January 2014 * the sale of Aurora’s retail customers in blocks to new, competing private sector retailers from or before the start of full retail competition, including: * the packaging of Aurora’s business and residential retail customers into two bundles for sale with each bundle covering a range of local government areas * the continuation of retail price regulation by the Tasmanian Economic Regulator until retail competition is effective * the Tasmanian Economic Regulator being given a new objective of monitoring and reporting on the development of competition in the electricity retail market. |
| *Sources*: ACT Government (sub. DR75, p. 2); AEMC (2012x; 2011l; 2008c, d); AER (2012q; 2013a); COAG (2012); Conlon (2009); Corbell (2011); ESCOSA (2013); Green (2012, attachment); MCE and MCMPR (2011); Tasmanian Government (2013). |
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The capacity of state and territory governments to reject the outcomes of an AEMC review of the effectiveness of retail competition — as occurred in the case of reviews of the ACT and South Australia — is a weakness of the current COAG process.

Origin Energy suggested that once the AEMC has found competition to be effective in a jurisdiction, the onus should be placed on the relevant state or territory government to justify its decision not to remove price regulation:

… the jurisdiction [should] be required, via an amendment to the Australian Energy Markets Agreement … to provide:

* A transparent rationale for their decision not to deregulate, using evidence to identify where competition is inadequate;
* Proposed steps to be taken by the jurisdictional government to address remaining limitations in the competitive environment;
* A date within the next twelve months by which to report on progress in addressing limitations in the competitive environment as identified, with new measures proposed if required; and
* A date within the next twelve months by which time a new decision on removing price regulation will have been taken. (sub. DR64, p. 5)

The Commission considers that state and territory governments should implement their COAG commitments. A government should remove its retail price regulation of electricity as soon as practicable after the AEMC finds that retail competition in the jurisdiction is effective. The exception would be where the AEMC advises that there is strong evidence that competitive pressures would be weak after the removal of the regulation and could not be addressed by consumer awareness or price monitoring measures. In that case, measures recommended by the AEMC to promote effective retail competition in a jurisdiction, including structural reforms, should be implemented by the relevant state and territory government as soon as practicable. The Commission notes that governments continue to have the opportunity to participate in an AEMC review, and to submit their own evidence on the effectiveness of competition, or on the rationale for retaining retail price regulation.

Despite the existence of a timetable of AEMC reviews and a commitment by governments to report back to SCER by 2013 on transition plans to remove price regulation, there is no tight agreed deadline for the removal of retail price regulation. The absence of a deadline can lead to further delays and procrastination.

The Commission considers that all retail price regulation should be removed by no later than 2015. Such a deadline would require accelerating the AEMC’s current timetable of reviews particularly for Tasmania and the ACT.[[14]](#footnote-14)

Regardless of any such deadline or timetable, retail price regulation should not apply in network regions where smart meters have been (or would soon be) rolled out and where time-based network charges could be introduced, including to business customers.

Recommendation 12.2

State and territory governments should implement, as soon as practicable, any advice from a retail competition review by the Australian Energy Market Commission to remove retail price regulation, and/or undertake consumer awareness measures and structural reforms to improve the effectiveness of retail competition.

Recommendation 12.3

The Standing Council on Energy and Resources, in consultation with the Australian Energy Market Commission, should revise the current timetable for retail competition reviews to enable all retail price regulation to be removed no later than 2015.

### How would retailer behaviour change?

The retail tariff faced by an end-user embodies network charges, wholesale energy costs, hedging and other costs, and the retailer’s margin (box 12.5). The network component is sometimes partially or completely ‘hidden’. As such, the extent of demand responses by customers to more cost-reflective network pricing depends in part on the intermediary role played by retailers.

In the residential market, retailers mostly hedge the variability in wholesale energy prices on behalf of the majority of their customers. (They similarly smooth variability in energy prices for business customers, but usually to a lesser extent.) Retailers achieve such price smoothing in a variety of ways: either by hedging arrangements, through contracts with generators or, in rare cases, by taking the price risk directly themselves.

Cost-reflective network charges will have little effect on consumers if retailers do not have incentives to pass through at least some form of those time-based charges in their retail offers.

It would not be efficient (or financially sustainable) for retailers to maintain the same level of (almost universal) smoothing of time-based network charges as they currently do for wholesale energy costs. Smoothing variability in network charges would effectively take the form of risk pooling or insurance to cover the much higher cost of peak consumption. Irrespective of whether a retail business purchased such insurance from the market or ‘self-insured’, commercial incentives would

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| Box 12.5 How might retail tariffs reflect cost-reflective network charges |
| The price of electricity to households and businesses incorporates:   * charges for transmission and distribution network services that are passed on to retailers * wholesale energy and risk management costs from the spot and contracts market (including carbon pricing) * various environmental costs (and in Victoria, smart metering) * retail costs, including for customer procurement, billing services, financing the necessary working capital, and a profit margin.   The retailer recovers these costs from customers.  Box 12.5 Figure 1 How might retail tariffs reflect cost-reflective network charges. This figure shows the different charges that make up the cost of electricity and how costs to retailers are recovered from customers.  Various factors (such as barriers to competition) could mute the incentives for retailers to reflect the time-based differentiation of network charges in final electricity prices. Nonetheless, the Commission is confident that these incentives can be strengthened, so that time-based network charges would translate reasonably directly into the prices faced by many households and businesses. This would be either as retail prices that vary by time or, for those consumers who choose not to adopt time-varying retail prices, as high flat (uncapped) tariffs that reflect the full costs of supplying power to them. |
| *Source*: AEMC (2011a, pp. ii‑iv). |
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usually call for some degree of risk-reduction — and a passing-through of price risks to customers to correct for the moral hazard[[15]](#footnote-15) from high peak consumption. In the electricity market, another risk management approach in regard to variations in network charges might take the form of demand management. That could include some level of price exposure for customers and the availability of load management programs.

In the longer run, any incumbent retailer that maintained a business model of smoothing all variability in energy *and* network charges would risk making lower returns unless customers were prepared to pay a large premium for this service. Customers who would prefer to avoid paying such a premium would be likely to switch to another retailer who offered a discounted time-based product. Such a scenario would transpire as new retailers or competing incumbent retailers progressively offered more innovative products, which could lure customers with genuine bill savings through a combination of time-dependent tariffs and demand management services to manage price risks.

The AEMC in its Power of Choice review anticipated that retailers are likely to pass through the structure of network charges in a way that closely resembles their original form (2012u, p. 171). Where the network tariff is flat, it would be teamed with a flat energy usage charge. If a network charge included some time-based components in the tariff, the overall retail charges would likely also incorporate that variation.

Conversely, KPMG (2008) was sceptical about the appetite for retailers to pass through price variability in tariffs. In particular, KPMG noted concern among retailers about losing customer share from complex tariff offerings. As of mid-2009, more than three-quarters of the end household customers serviced by Ausgrid’s then integrated retail arm were exposed to an (untargeted) time of use network charge that followed the time of use tariff (applied by Ausgrid as a distributor). However, of those customers with an external retailer, only an estimated half of these faced time of use tariffs from their retailer of choice (EnergyAustralia 2009, p. 9).

The key quandary for network businesses is, in practice, what degree of demand management would be initiated by pricing plans of retailers, since hedging and bill smoothing may distort consumption responses to cost-reflective network charges. If network businesses engaged early with retailers in explaining their tariff setting process, it would allow retailers time to prepare their marketing strategies and offers to consumers and could help support a higher rate of pass-through of tariff structures to end-users.

While retailers would be free to decide how to include the relevant network tariff into their retail offer, it is expected that they would put forward a range of tariff offers, including, perhaps, the option of a flat tariff. However, the price of a flat retail tariff would have to reflect the overall cost of supplying an individual consumer and would need to include a premium for the ‘insurance’ against any price risks. (In such cases, particularly ‘peaky’ users could potentially face a hefty premium.[[16]](#footnote-16)) While some consumers may of course be prepared to ‘wear’ the extra cost of the flat tariff, many consumers would prefer to reduce future bill increases by taking up innovative retail offers that encourage consumers to shift the timing of their power use. Where beneficial to consumers, tariff options could be complemented by information (such as online access to real-time usage data and relevant charges) and technologies (such as direct load control or a home area network) to assist with energy management. Providing such technologies (and education about how to use them to respond to price signals) would represent a key role for retailers.

Despite the possibility that some retail products may reduce the price exposure of consumers at peak times by some smoothing of network tariffs, the Commission expects many retailers would choose to pass through cost-reflective network tariffs, resulting in more efficient outcomes (chapter 11). Further, the prospects of a national wholesale energy hedging market developing (chapter 19) may help increase retail competition (reducing the trends towards the ‘gentailer’ business model) and lessen any risks from the removal of retail price regulation (box 12.6). Chapter 11 also explains why it is unlikely that retailers would attempt to expose household consumers directly to the pricing volatility in the wholesale energy market and why it would not be efficient for them to do so.

Nevertheless, there is a risk that retail competition and contestability may not develop with an efficient degree of pass-through of cost-reflective network tariffs as foreshadowed. If this were to occur in some retail markets, there would be an option (at that point in time, rather than pre-emptively) to require that a retail tariff took a certain form. That could be implemented under the National Energy Customer Framework (or other jurisdictional legislation) and include:

* mandating the pass-through of critical peak network charges to ensure consumers face charges commensurate with the costs of their consumption
* placing complementary obligations on retailers to inform customers of demand management options, such as direct load control of peak‑intensive appliances offered by distribution businesses, or requiring retailers to provide demand management technologies and services themselves.

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| Box 12.6 A national hedging market would strengthen retail competition |
| The emergence of ‘gentailers’ (retailers that also own generation assets) as a business model to internally hedge price volatility and quantity risks raises questions about retail contestability.  Currently, hedging markets are state-based, with a spot price determined at each state’s regional reference node. Hedging markets are similarly confined to within state boundaries. A national hedging market could enhance retail contestability, as a new entrant retailer could more readily access financial products to manage price and quantity risks, and could use contracts with out of state generators.  Chapter 19 suggests two key changes that would help support a national hedging market and retail contestability:   * Implementation of an optional firm access regime for transmission, which will support firmer hedging options across state boundaries (recommendation 19.2). (The costs and benefits of this option have yet to be formally assessed.) * The possibility of increasing the transparency of hedging positions, principally to monitor market power issues but also to better inform retail entrants. (The costs and any risks of this option have not yet been fully explored.). |
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Such measures should only be used if it were evident that retail tariffs did not develop to offer customers a choice of products, including opportunities to pay less for the use of the network by shifting the timing of consumption. Further, a decision to implement a regulated approach should not be taken lightly, as this would suppress innovation and contestability in the market over the longer term.

## 12.4 The AEMC’s proposed ‘demand response mechanism’ in the Power of Choicereview

Addressing the incentives of network businesses and other NEM participants to adopt demand management was a focus of the AEMC’s Power of Choice review. The AEMC gave particular focus to securing demand-side participation from commercial and industrial end-users.

The Commission has sought to avoid duplicating much of Power of Choicereview. However, it notes that one of the AEMC’s proposals in this review is to allow consumers to be paid the wholesale electricity spot price for reducing their demand (2012u, p. ii, rec. 1). The AEMC considered the proposal would mainly apply to large electricity users, such as commercial and industrial end-users that wish to offer their demand response to the wholesale electricity market directly, or through a specialist intermediary such as a demand aggregator. It envisaged that, in future, the proposal could be adapted by aggregators to include demand responses from residential consumers who have appropriate metering technology in place (2012u, p. 112).

The Commission has not analysed the finer details of this proposal, but observes the following:

* The proposal enhances consumer participation in the wholesale spot market. As the AEMC noted:

Our overall assessment of the DRM [demand response measure] is that it meets the NEO [national electricity objective] in a number of ways. Firstly it enhances consumption participation in the wholesale market and allows consumers to see the value of changing their consumption in line with market signals, such as the spot price. In turn, we consider that informed consumer choices leading to efficient consumption in the market will result in lowered generation and network costs, as well as increased competition in the energy market that will benefit all consumers (2012u, pp. 120‑1)

* Removing barriers to demand aggregators participating in the spot market could be beneficial. Demand aggregators may be able to source load reduction more cheaply than retailers. Allowing their participation may allow more cost‑effective load curtailment to address network congestion. (Given largely fixed negotiation and contracting costs, there are efficiencies in aggregating demand response for both network and wholesale purposes.) Demand aggregators could also provide a link between the underlying market value of distributed generation sources and spot market outcomes.
* The AEMC identify some adverse or perverse outcomes, but did not consider these to be significant. For example, it noted that its proposal could work in opposition to an existing successful demand management response program such as SP AusNet’s critical peak pricing program. However, it considered this could be ‘easily remedied’ by adjusting how the consumer’s baseline consumption is estimated (2012u, p. 126). (The baseline consumption together with the consumer’s actual consumption is a necessary part of estimating the demand response delivered to the wholesale market.) The AEMC also noted the scope for consumers to ‘game’ their baseline consumption. However, it considered this depended on the governance arrangements for estimating baseline consumption (pp. 135‑6).
* Several participants in this inquiry commented on the AEMC’s proposal.
* Some considered its costs outweighed the benefits (Energy Supply Association of Australia, sub. DR70; Energy Retailers Association of Australia, sub. DR76). For example, the Energy Supply Association of Australia considered that: the proposal imposed risks on energy retailers and generators at the expense of rewarding consumers; the link between the proposal and purported network savings were unclear; and establishing baselines was complex and subject to gaming (sub. DR70, pp. 4‑5).
* In contrast, EnerNOC (2012, pp. 3, 5; trans., p. 387), a demand aggregator, supported demand-side bidding, considering that the costs should be very small in comparison to the benefits. It suggested improvements to address issues with NEM dispatch and settlement processes that could unlock further benefits.

1. This issue has previously been considered by IPART (2001) and the Essential Services Commission of Victoria (ESC 2004b). [↑](#footnote-ref-1)
2. The major argument in favour of WAPCs is the incentives that they provide, in theory, for network businesses to set ‘efficient’ prices. If the AER were to play an active role in setting prices (as the Commission proposes in chapter 11), prices would be set at an efficient level under either a WAPC or a revenue cap. As a result, the incremental efficiency gains under a WAPC would be smaller. [↑](#footnote-ref-2)
3. In contrast, EnerNOC argued that, although the theoretical reasoning behind WAPCs is sound, it does not apply to Australian distribution networks, as almost all distributors’ costs are fixed within the five year regulatory period (sub. DR83, p. 5). [↑](#footnote-ref-3)
4. While efficient, Ramsey pricing is sometimes criticized for its equity implications (Bhattacharyya 2011). [↑](#footnote-ref-4)
5. In the absence of smart meters (which can allow time of use and critical peak pricing), it is not clear what the AER would consider as evidence of efficient pricing. [↑](#footnote-ref-5)
6. AER, pers. comm., 26 Feb 2013. [↑](#footnote-ref-6)
7. This task will be made more difficult by the need to estimate demand response under the new tariff schedule. [↑](#footnote-ref-7)
8. Although, given the different regulatory structures employed around the world, it is difficult to draw strong conclusions regarding the success of different control mechanisms. [↑](#footnote-ref-8)
9. For instance, in Queensland, a variance between expected and recovered revenue of less than 2 per cent is recovered in one year, a variance between 2 and 5 per cent is recovered over two years and a variance greater than 5 per cent must be recovered based on a ‘clearly documented plan’ submitted to the AER. [↑](#footnote-ref-9)
10. It is unlikely that these tariff adjustments have resulted in a more efficient pricing structure. [↑](#footnote-ref-10)
11. For instance, cost pass throughs are permitted where network businesses are unable to influence the likelihood or costs involved, such as for tax changes and price rises of some large inputs, but they are not allowed where the network business can control the costs, such as the costs of construction or the cost of capital. [↑](#footnote-ref-11)
12. The prices set are intended to ensure an electricity retailer can recover costs that an ‘efficient’ retailer would expect to incur. Each electricity retailer must submit an application to the state or territory regulator outlining its expected costs for the period ahead. The retailer is also provided with a ‘reasonable’ margin (on top of retail operation, energy, network costs), which ranges from 3–10 per cent depending on the jurisdiction (Plumb and Davis 2010). The phasing out of retail price regulation has usually commenced with large business customers, followed by small to medium business customers (a change recently signalled to occur in New South Wales (Macdonald-Smith 2012). Residential customers are usually the last customer segment reviewed. [↑](#footnote-ref-12)
13. In its Power of Choicereview, the AEMC was cautious about the impact of removing retail pricing regulation on retailers’ pricing flexibility:

    We are not convinced that simply removing pricing regulation will result in all retailers offering a wide range of DSP [demand side participation] products to consumers. Under the existing arrangements in states which have retail contestability, retailers are already able to provide diverse market offers, including innovative DSP related tariffs to retail consumers.

    While we do not agree that retail price regulation per se should discourage retailers from introducing flexible prices (provided sufficient headroom is allowed for in regulated prices), we do consider that price regulation could add to compliance costs and reduces flexibility for retailers. (2012u, pp. 194‑5)

    The Productivity Commission agrees that the presence of retail contestability creates pressures on retailers to offer innovative and flexible tariffs to customers, even if there is retail price regulation with sufficient headroom. However, retailers’ pricing flexibility is likely to be much greater under deregulation. [↑](#footnote-ref-13)
14. The AEMC review of Tasmania’s retail market is scheduled to occur 18 months after full retail contestability is introduced in that jurisdiction. As the Tasmanian Government has announced that full retail contestability would be introduced in January 2014, an AEMC review is unlikely before July 2015. The ACT review is scheduled for 2016. However, SCER has asked the ACT Government to revisit the findings and recommendations of the AEMC’s 2011 review and report back by the end of 2013. [↑](#footnote-ref-14)
15. That is, the likelihood that consumers would not seek to limit their consumption at peak times, given they do not bear the associated cost. [↑](#footnote-ref-15)
16. This could encourage peaky users to reduce their peak consumption (and reduce their flat tariff), or transfer to a different retail tariff. [↑](#footnote-ref-16)