

ENERGY PURCHASE COSTS

It was agreed that there was a need to review and fix any problems in the settlement process of the energy purchase cost calculations, and then to provide a complete and detailed discussion of the energy purchase cost methodology. The review was to include consideration of the following points, each of which is discussed in turn below:

- Calibration for the estimation of spot prices for 2009-10;
- Treatment of caps;
- Forecasting of future contract prices;
- Calendar alignment; and
- Foresight of outcomes.

The discussion of the results in the Second Draft Report is also to include reporting of the costs associated with each type of hedge, and any cap payoffs.

CALIBRATION

The key element of calibration that is relevant to the spot price forecasts that are used in the energy purchase costs calculations is the calibration of the inputs to the model to set the bid characteristics which are then used to model actual bids and thus create spot price forecasts.

It was found that the original calibration which had underpinned the results in the First Draft Report had resulted in exceedingly high spot prices and extreme volatility which was not reasonable to expect. In the workshop, it was suggested that the outcomes that had been observed in 2007-08 should be used as the basis for the calibration for 2009-10. The financial year 2007-08 was characterised by reduced availability of plant, due to drought. During 2008-09, we are seeing plant that was not available due to drought in the previous financial year now becoming available again, and the most recent NEMMCO reports on the drought are now showing only very slight restrictions on generation. Therefore, it does not seem appropriate to continue to use in 2009-10 the bid characteristics from 2007-08, which was a drought year, given that no drought restrictions are expected to apply in 2009-10.

Our alternative proposal, on which we currently intend to base our calculations for the Second Draft Report, is to calibrate the model inputs based on normalisation of price duration curves from the last 10 years, to find a price duration curve for a “typical year”, and to use that as the basis in the model for determining bid characteristics for 2009-10. If generation restrictions can be shown still to be needed in 2009-10, then we can directly apply those restrictions as appropriate to the bid characteristics that result from our use of the normalised price duration curve.

A further question arose at the workshop concerning how the forecasting approach adjusts its price forecast in the calibration in order to minimise errors. That is, is it trying to minimise error on the average price only, or minimise errors on each half hour price, or is it only trying to minimise error with regard to whether the price is over or under \$300. The main thrust of the question was about what measure the forecast calibration is seeking to minimise.

In response to this question, we note that we use the normalised approach over 10 years to avoid / minimise the effect of short-term variables such as weather patterns that would not necessarily occur in subsequent forecast years. This approach is used in preference to applying qualitative judgements to determine whether any single year is “typical”.

What is important is the annual price duration curve and annual average price, with emphasis on the top 200-300 hours which are the most difficult to match. It is not meaningful to try to calibrate to get each and every half-hour to match. We do not use an arbitrary accuracy test of the calibration of the form that seems to be suggested by the question that was raised.

TREATMENT OF CAPS

In the First Draft Report, the cap price that was used was the price for caps that apply to all settlement periods. However, this cap price was then taken up only for peak settlement periods, rather than for all settlement periods as would have been appropriate.

Our stated methodology is to take up caps only for peak periods, but we are hampered by the lack of publication by d-cypha Trade of cap prices that apply only to peak periods. While we note that there is an alternative source of published cap prices that apply only to peak periods, it has also been suggested by stakeholders that there is no ready market for these caps.

In light of this, we propose to amend our methodology to take up caps for all periods. Assuming that pricing of all period caps increases in proportion to the probability weighted increase in risk to the seller, this should give an equivalent result as compared to using the price of caps that apply only to peak periods and applying that price only to peak periods.

FORECASTING OF FUTURE CONTRACT PRICES

Our method of estimating energy purchase costs is based on retailers building up a portfolio of contracts over a 24 month period leading to the tariff year 2009-10. While contract prices for the first part of that 24 month period are already known, future contract prices that will apply to contracts entered into during the latter part of the 24 month period are not yet known. In the past we have addressed this issue by using the average of the contract prices that were published for the last two months of available data, and applying this average price to all future contract purchase dates in the remainder of the 24 month period.



INTERNATIONAL

It was suggested that CRA should consider development of a more sophisticated way of forecasting future contract prices rather than simply taking an average of the most recent prices. AGL suggested that there is an observed relationship between observed spot price and contract prices and a trend in contract prices over time beyond that of seasonality. We are aware of a general correlation between historical spot prices and published contract price information and that forward contract prices provide some guidance on future spot prices. However, we are not aware of a sufficiently stable relationship to recommend its use in this application, given that the contract price would need to be based on a forecast of spot price from modelling and this in turn is a function of the contract price. QCA invited stakeholders to present any information that stakeholders could provide on these or other relationships that could assist in this regard.

In the event, no stakeholder input has been received to date. In the absence of stakeholder input, we retain the view that the best forecast of future contract prices is whatever prices for relevant future periods are today. The highest probability of where prices will be in future is where they are now. In practice this means that the price of final tranche of contracts purchased for the tariff year will be taken to be the average of the prices paid for the most recently purchased tranches. Rather than take the very last quoted available price, which may not be characteristic of recent prices, we go back a reasonable length of time to make the averaging more robust. We proposed two months, and in the previous consultation stakeholders were divided as to whether two months was too short or too long a period of time. In the absence of further stakeholder input, we propose to continue to estimate future contract prices based on carrying forward the most recent observed prices, without any methodological change.

CALENDAR ALIGNMENT

Some misalignment of day types occurred in the First Draft Report due to inputs having been based on a previous year without adjustment for the day of the week on which the year starts. This caused some weekday demands to be matched with weekday prices, and vice versa. This is being corrected for the Draft Second Report.

FORESIGHT OF OUTCOMES

We currently have perfect foresight of half-hourly demand outcomes when we undertake our hedging – because we use the same demand forecast for constructing the hedging strategy as we do for post-event settlement. This does not reflect a reasonable scenario; in reality there are volume risks for the retailer, because outturn half-hourly demands differ from forecasts. Because retailers settle half-hourly in the NEM, the settlement outcomes in the energy purchase cost calculations are sensitive to individual half-hourly demand outcomes.

We propose to address this by applying Monte Carlo simulation to our forecast demands to provide various sensitivities around our half-hourly demand forecasts, and using a weighted result. This approach has been chosen in order to simulate the half-hourly volume risks for the retailer, while maintaining the demand forecast as the best estimate of the expected demand outcomes.