

Independent Pricing and Regulatory Tribunal
New South Wales

Monitoring of wholesale and retail markets for fuel ethanol in 2017-18

Proposed approach



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Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by 10 September 2018

We would prefer to receive them electronically via our online submission form <www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission>.

You can also send comments by mail to:

Monitoring of wholesale and retail markets for fuel ethanol

Independent Pricing and Regulatory Tribunal

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If you would like further information on making a submission, IPART's submission policy is available on our website.



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1 Introduction

Under the NSW *Biofuels Act 2007* (Biofuels Act), volume fuel retailers must ensure that ethanol accounts for at least 6% of the total volume of petrol sold in any one quarter (ethanol mandate), unless they have been provided an exemption.¹ The Independent Pricing and Regulatory Tribunal (IPART) has two ongoing roles under the Biofuels Act:²

1. to determine, and periodically review, a 'reasonable wholesale price' (wholesale price) for ethanol for use in the production of petrol-ethanol blends such as E10,³ and
2. to monitor the retail market (including prices) for petrol-ethanol blends and make reports to the Minister for Innovation and Better Regulation (the Minister) on the effect of a determination of the reasonable price for wholesale ethanol.

IPART's determined wholesale price for ethanol forms part of the exemptions framework for the ethanol mandate. The Minister may exempt a volume fuel retailer from complying with the mandate if the price at which they purchased ethanol exceeded the price determined by IPART. Other grounds for exemption also exist, such as there being insufficient sales of E10 after the volume fuel retailer has taken all reasonable steps to comply with the mandate.⁴

In 2016 we carried out our first review of wholesale ethanol prices.⁵ We developed a framework for assessing the degree of price regulation required in the wholesale ethanol market and found that a 'less intrusive' approach to price regulation was appropriate. Given this finding, we developed a methodology for determining wholesale ethanol prices from 1 January 2017 based on an estimate of the import parity price (IPP) for ethanol and an approach to monitoring and reporting on the retail market for E10. In 2017 we reviewed this approach and decided to continue to apply an IPP methodology to determine wholesale ethanol prices from 1 January 2018.

This Issues Paper sets out how we propose to review the methodology for determining the price of wholesale ethanol from 1 January 2019 and our proposed approach for monitoring and reporting on the 2017-18 retail market for petrol-ethanol blends (E10).

1.1 How can stakeholders provide input to the review?

For this review, we will consult publicly as well as directly with key stakeholders, such as ethanol producers, fuel wholesalers and retailers, industry bodies and government agencies.

¹ *Biofuels Act 2007* (NSW), ss 6-9B.

² *Biofuels Act 2007* (NSW), s 17A.

³ E10 is regular unleaded petrol (RULP) mixed with up to 10% ethanol. As of mid-2016, over 99% of petrol-ethanol blended fuel sold in NSW was E10. NSW Fair Trading, *Service station data collection results – July 2016*. Available at m.fairtrading.nsw.gov.au/biz_res/ftweb/pdfs/Businesses/Biofuels_industry/Service_station_data_collection_results.pdf, accessed 1 August 2018.

⁴ *Biofuels Act 2007* (NSW), s 9A(2) and s 9B(1); and *Biofuels Regulation (No 2) 2016* (NSW) cl 9.

⁵ IPART, *Review of a maximum price for wholesale ethanol in automotive blends – Final Report*, December 2016.

Stakeholders are invited to make a submission in response to this Issues Paper by 10 September 2018. Details on how to make a submission are provided at the front of this paper. The key issues for which we are seeking stakeholder comment are listed below in section 1.3.

If we find that any changes to our approach or our IPP methodology are required, we will consult with stakeholders in our draft report. The draft report will also detail our draft findings and supporting analysis on the retail market for E10, and stakeholders will have the opportunity to comment on these.

Table 1.1 provides an indicative timetable for the review. We will update this timetable on our website as the review progresses.

Table 1.1 Indicative review timetable

| Milestone | Indicative date |
|---------------------------------|-----------------------|
| Issues Paper released | August 2018 |
| Submissions on Issues Paper due | 10 September 2018 |
| Draft Report released | October 2018 |
| Submissions on Draft Report due | October/November 2018 |
| Final Report to Minister | December 2018 |

1.2 How is this paper structured?

The rest of this Issues Paper provides more information on our proposed analytical approach, and the key issues we will consider. It also sets out specific issues that we are seeking stakeholders' comments on:

- ▼ Chapter 2 sets out how we propose to assess whether the less intrusive approach we currently take for setting wholesale ethanol price remains appropriate
- ▼ Chapter 3 discusses how we propose to review the approach to determining the wholesale price, once we have concluded our assessment of the level of intervention required in the wholesale market. It outlines the principles we propose to apply and then discusses our IPP methodology and seeks feedback on potential refinements.
- ▼ Chapter 4 provides an overview of how we propose to monitor and report on the retail market for petrol-ethanol blend.

1.3 List of issues for stakeholder comment

Throughout this paper, we have identified the issues on which we particularly seek stakeholder comment. Stakeholders may address all or some of these issues, and are also free to raise and discuss any other issues relevant to the review and IPART's role under the Biofuels Act. For convenience, a full list of the issues we seek comment on is provided below:

- 1 We have outlined a range of indicators that we propose to use to assess whether the degree of consumer choice for retail fuel has changed over the past year. Are there any other indicators we should consider? 7

| | | |
|----|---|----|
| 2 | Have there been significant changes since mid-2017 in the availability of regular unleaded petrol (RULP) in NSW? | 7 |
| 3 | Has there been any change in the factors likely to impact the availability of RULP in NSW in the near term? | 7 |
| 4 | We have outlined a range of indicators we propose to use to assess whether the extent of competition in the wholesale ethanol market has changed over the past year. Are there any other indicators we should consider? | 8 |
| 5 | Have there been significant changes since mid-2017 in the level of competition in the wholesale ethanol market in NSW, including the number of producers or changes in market shares? | 8 |
| 6 | Are there any other factors likely to impact the level of competition in the wholesale ethanol market in NSW in the near term, such as regulatory barriers or the availability or cost of feedstock? | 8 |
| 7 | Have fuel wholesalers and ethanol producers continued to negotiate prices below our determined wholesale prices? | 15 |
| 8 | Do you agree that the principles set out in Box 3.1 are the appropriate principles to apply in assessing our approach? | 15 |
| 9 | Could improvements be made to the IPP methodology without significantly impacting on the simplicity, transparency and predictability of the methodology? | 15 |
| 10 | Do the US and Brazil remain the two most likely sources for ethanol if it were to be imported to Australia in 2018? | 15 |
| 11 | Would adopting a commercial IPP, from providers such as OPIS or Platts, align more closely with the principles set out in Box 3.1? | 15 |
| 12 | Should we continue to determine the wholesale price on a quarterly basis, or should we move to a longer timeframe such as six-monthly determinations? | 15 |
| 13 | Do you agree with our proposed approach to monitoring the retail price for E10, including our proposal to compare average E10 and average RULP prices? | 17 |
| 14 | Are there other issues we should consider in monitoring the retail price of E10? | 17 |

2 Level of pricing intervention required in the wholesale market for ethanol

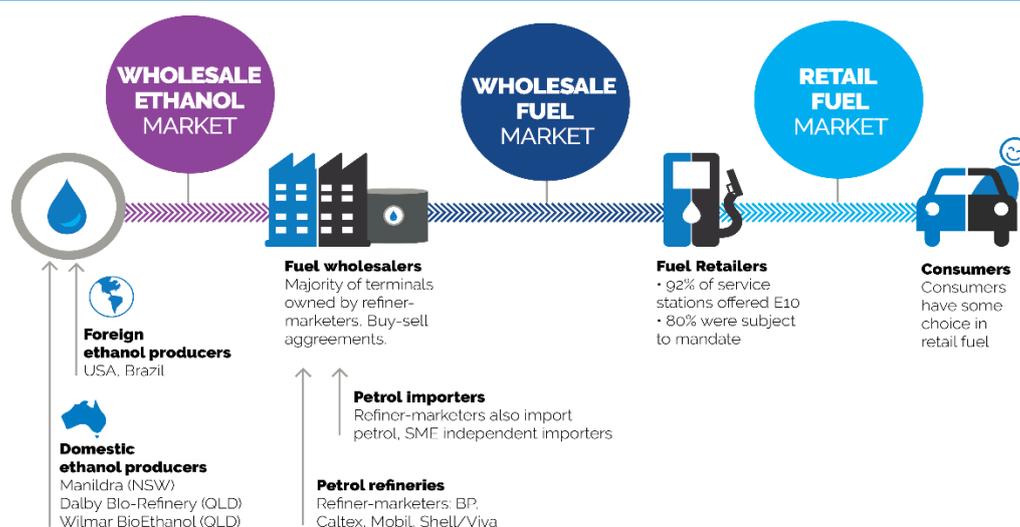
In 2016 we developed a framework for assessing the level of price intervention required in the wholesale market for fuel ethanol.⁶ We then applied this framework taking into account conditions in the relevant markets and found that a less intrusive approach to regulation of the wholesale price was appropriate. We indicated that we would review this analysis annually to ensure that this less intrusive approach continues to be suitable.

This chapter sets out the framework we will use for this analysis, which is based on an assessment of the level of choice available to customers purchasing fuel from retailers and of the level of competition in the wholesale market for ethanol. Our analysis will focus on whether there have been any changes in the market since we last undertook this analysis that we consider warrant a move away from a less intrusive approach.

2.1 Overview of the framework we propose to apply

In any market, the need for government intervention depends on the extent of, and potential for, competition in the market. In the wholesale ethanol market, it also depends on the degree of consumer choice for retail fuels and the level of oil/petroleum prices. By regulating the mix of fuel types offered at service stations in favour of ethanol blends such as E10, the ethanol mandate has the potential to restrict consumer choice and increase the opportunity for ethanol producers to exercise market power.

Figure 2.1 Markets involved in the supply of retail fuel, including E10



Source: IPART, *Monitoring of wholesale and retail markets for fuel ethanol 2016-17*, Final Report, December 2017, p 5, 7, 10, 14, 19; ACCC, *Petrol prices and Australian consumers: Report of the ACCC inquiry into the price of unleaded petrol*, December 2007, p 49, 55, 56, 65.

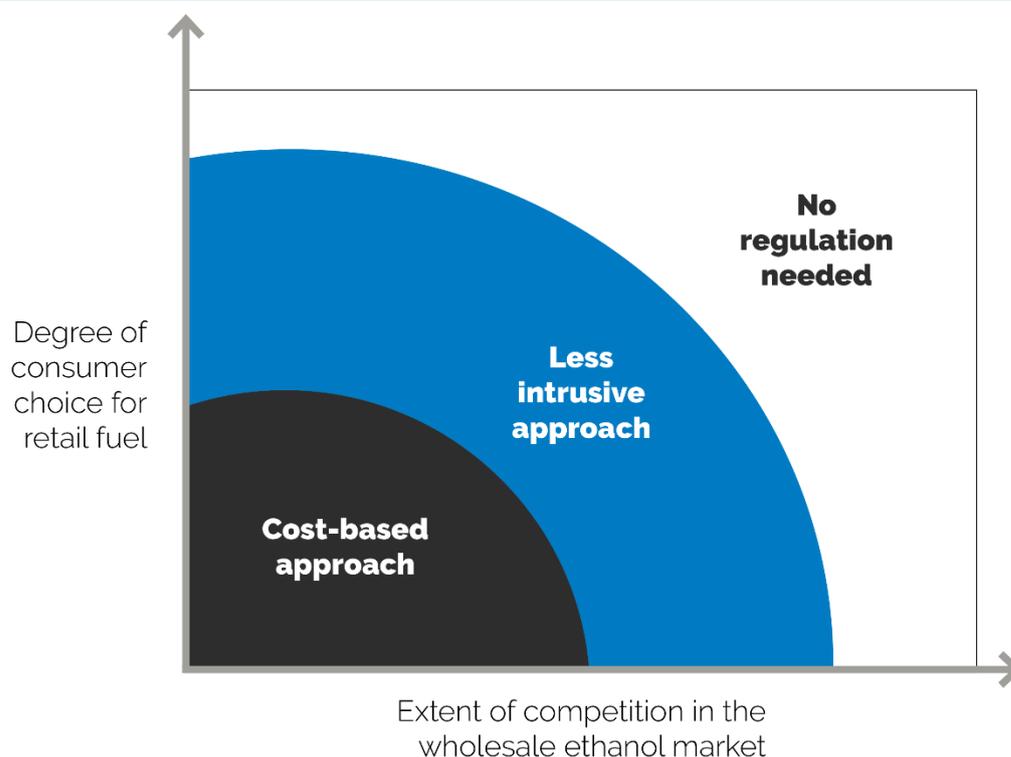
⁶ IPART, Final Report on the *Review of a maximum price for wholesale ethanol in automotive fuel blends*, December 2016.

As part of our 2016 review, we developed a framework to assess the need for pricing intervention in the wholesale ethanol market. The framework considers the extent of competition in the wholesale ethanol market and the degree of consumer choice for retail fuels to identify whether ethanol producers' market power is such that:

- a) cost-based price regulation is required, or
- b) a less intrusive approach to price regulation is needed, or
- c) no price regulation is needed.

A schematic representation of this framework is shown in Figure 2.2.

Figure 2.2 Framework for assessing the level of pricing intervention required in the wholesale fuel ethanol market



Note: This is a schematic representation and the regions within this figure are indicative only.

Source: IPART, *Review of a maximum price for wholesale ethanol in automotive fuel blends – Final Report*, December 2016, p. 10.

In our 2016-17 final report, we found that customers continued to have choice in retail fuels, and that wholesale market competition was emerging. On this basis, we considered that the market provided reasonable protection for fuel consumers, such that the 'less intrusive' import parity price (IPP) approach to price regulation continues to be suitable.⁷

We propose to use the same framework this year to consider whether there have been changes in the markets for petrol or wholesale ethanol that warrant a move away from this less intrusive approach to price regulation.

⁷ IPART, *Monitoring of wholesale and retail markets for fuel ethanol 2016-17 – Final Report*, December 2017, p. 18.

Under the framework, if we find that there have been changes such that:

- ▼ There is now very limited consumer choice of retail fuel (eg, if E10 were the only fuel available) **and** little or no competition in the wholesale ethanol market (eg, only one producer that could supply NSW and there were high barriers to entry), then it would be appropriate to change our approach to setting the wholesale price to a cost-based approach.⁸
- ▼ There is now a high degree of consumer choice of retail fuel (eg, if the ethanol mandate were removed completely) **or** the wholesale market is workably competitive (or with a strong threat of competition and low barriers to entry) then there would be no need for any intervention in the pricing of wholesale ethanol.

In other cases, the assessment framework suggests that the current less intrusive IPP approach to setting the wholesale ethanol price continues to be appropriate.

2.2 Assessing the degree of consumer choice for retail fuel

To assess the degree of consumer choice we propose to consider data on the different fuels available at service stations in NSW, and the way that the mandate and supporting measures affect consumer behaviour. This would continue our approach we used in our 2016-17 monitoring of retail ethanol prices.

We propose to consider various indicators including (where available):

- ▼ the percentage of service stations subject to the mandate
- ▼ overall performance against the mandate (ie, percentage of ethanol in total volume of petrol sold)
- ▼ the percentage of service stations that offer ethanol-blended fuels
- ▼ the percentage of service stations that offer alternatives to ethanol-blended fuel, specifically, regular unleaded petrol (RULP)
- ▼ the percentage of service stations that offer RULP in addition to ethanol-blended fuel (eg, E10)
- ▼ the percentage of bowsers and nozzles across all service stations used to deliver RULP versus E10 (E10, no RULP), (E10 and RULP), and (RULP, no E10)
- ▼ the availability and usage of fuel-price monitoring services, and
- ▼ the fuel compatibility composition of the NSW vehicle fleet (ie, the percentage of vehicles that can feasibly use E10).⁹

In our 2016-17 Final Report we found that consumers generally have a relatively high degree of choice between RULP and E10.¹⁰ We also found that the increasing availability and use of apps and websites¹¹ that display, in near real-time, the prices of available fuels at each service

⁸ Based on the costs of a new entrant producer supplying ethanol into the wholesale market.

⁹ The increase in consumption of premium fuel, as evident in Figure 2.4 of the 2016-17 Final Report, may occur because of a shift towards cars that require higher octane ratings. This may in effect limit the choice available to consumers so that they are unable to use E10.

¹⁰ IPART, *Monitoring of wholesale and retail markets for fuel ethanol 2016-17 – Final Report*, December 2017, p. 7.

¹¹ For example, the NSW FuelCheck website at <https://www.fuelcheck.nsw.gov.au/app>.

station also makes it easier for consumers to find the nearest location at which their preferred fuel type is available. By reducing consumers' search costs, these apps and websites effectively increase the choice of retail fuels available to consumers.

IPART seeks comments on the following

- 1 We have outlined a range of indicators that we propose to use to assess whether the degree of consumer choice for retail fuel has changed over the past year. Are there any other indicators we should consider?
- 2 Have there been significant changes since mid-2017 in the availability of regular unleaded petrol (RULP) in NSW?
- 3 Has there been any change in the factors likely to impact the availability of RULP in NSW in the near term?

2.3 Assessing the extent of competition in the wholesale ethanol market

If there is a relatively high degree of consumer choice of ethanol-blended and non-ethanol blended petrol, then the amount of ethanol consumed depends on consumer preferences for ethanol-blended petrol such as E10, and whether these fuels are priced competitively relative to non-ethanol petrol types. With a high degree of choice, the price charged for wholesale ethanol is constrained by the price of non-ethanol petrol, and the need for pricing intervention in this market becomes less dependent on the extent of competition between ethanol producers. Therefore, we consider an in-depth review of the extent of competition in the wholesale ethanol market is only necessary if, compared to our 2016-17 findings:

1. we find a significant deterioration in the degree of consumer choice of retail fuels, or
2. a preliminary assessment suggests there has been a substantial lessening of competition or changes in factors likely to negatively impact on competition in the near term.

There is no single indicator that provides a complete view of the level of competition in a market. Instead, we are proposing that our assessment of the extent of competition focus on whether there have been any significant changes in the following key market characteristics:

- ▼ **Barriers to entry, exit and expansion.** There are economic, legal, regulatory and other barriers that affect the ability to enter the wholesale ethanol market, expand market share, and exit the market. A market with low barriers to entry will generally be competitive, as incumbent producers face an ongoing threat of competition from new or potential entrants into the market. Low barriers to entry therefore provide the most effective protection from the exercise of market power and uncompetitive pricing.
- ▼ **Market concentration.** A highly concentrated market means that a small number of sellers supply the majority of the market. The wholesale ethanol market in eastern Australia is currently supplied by three producers.
- ▼ **Pricing outcomes.** In competitive markets, producers cannot sustain prices above the long-run marginal cost of production for extended periods. Rather, producers will tend to compete by lowering their prices until prices reflect the cost of production.

Some of the indicators that we may consider in assessing whether these market characteristics have changed over the past year include:

-
- ▼ The number of ethanol producers contesting the wholesale ethanol market in eastern Australia, and whether new producers have entered the market or are expected to enter the market in the near future.
 - ▼ The market share of producers, and whether there have been recent changes in these market shares.
 - ▼ Whether there have been significant changes in regulatory barriers, such as planning approvals and environmental impact assessments, as well as in regulatory uncertainty.
 - ▼ Whether there have been significant changes in the availability of production inputs, in particular feedstock, at prices that allow for competitive ethanol production.
 - ▼ The actual prices paid for wholesale ethanol and how they compare with estimates of the efficient cost of a new entrant producer provided by AECOM in our 2016 review of wholesale ethanol prices. AECOM's findings are summarised in Box 2.1, and their full report to our 2016 review is available on our website, www.ipart.nsw.gov.au. AECOM's cost estimates may need to be updated if there have been significant changes in input costs, in particular in the costs of feedstock.
 - ▼ Changes in the level of oil and petrol prices, and the effect these may have on the wholesale price of ethanol. When there is a relatively high degree of consumer choice in non-ethanol blended petrol, a low oil/petrol price puts a constraint on the ability of ethanol producers to charge prices significantly above the cost of production.

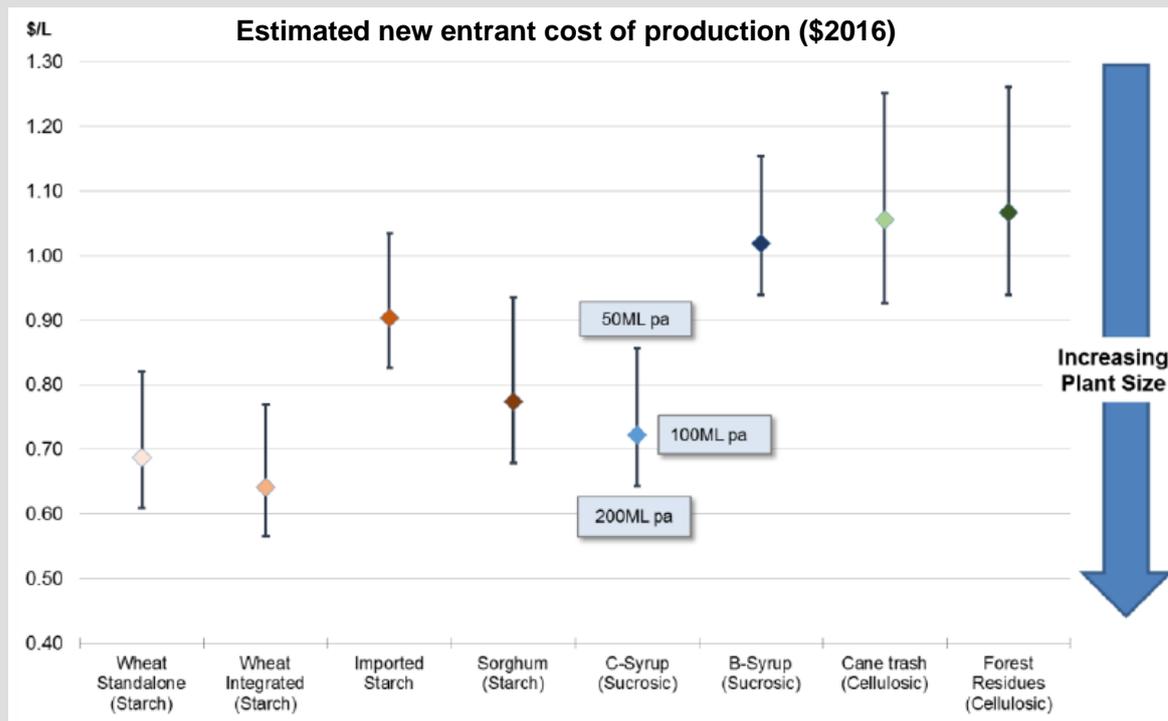
IPART seeks comments on the following

- 4 We have outlined a range of indicators we propose to use to assess whether the extent of competition in the wholesale ethanol market has changed over the past year. Are there any other indicators we should consider?
- 5 Have there been significant changes since mid-2017 in the level of competition in the wholesale ethanol market in NSW, including the number of producers or changes in market shares?
- 6 Are there any other factors likely to impact the level of competition in the wholesale ethanol market in NSW in the near term, such as regulatory barriers or the availability or cost of feedstock?

Box 2.1 AECOM's findings on new entrant costs of production for IPART's 2016 review of wholesale ethanol prices

We engaged AECOM to research and provide advice on the efficient operating and capital costs of new entrant ethanol producers. AECOM's analysis considered a number of potential production pathways, and identified the likely locations, feedstock availability and production scale (plant size) for each pathway, as well as process and plant requirements.

AECOM estimated ranges of efficient production costs depending on feedstock and production capacity. These ranges are shown in the figure below.



Some of AECOM's key findings were:

- ▼ As of 2016, the lowest cost of production was available through the use of wheat starch in an integrated facility that primarily produces gluten.
- ▼ To be competitive, a new entrant would have to invest in an integrated gluten and ethanol production facility and be based in remote NSW to take advantage of wheat price differentials and the current over-supply in global wheat markets.
- ▼ Economies of scale apply, so that a larger plant can produce ethanol at a lower cost per unit.
- ▼ Feedstock costs are in general not closely linked to global commodity or oil prices.

While AECOM found that the use of wheat feedstocks was the most cost-effective as of 2016, feedstock prices can fluctuate considerably over time. For most production pathways, the cost of feedstock is by far the largest cost component. The market price of feedstock varies with the supply and demand for it and is affected by factors that influence feedstock availability, such as drought.^a

Source: AECOM, *Efficient Costs of New Entrant Ethanol Producers*, 13 December 2016, at <https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/pricing-reviews-section-12a-publications-review-of-a-maximum-price-for-wholesale-ethanol/aecom-efficient-costs-of-new-entrant-ethanol-producers-final-report-december-2016.pdf>

^a ABARES, *Agricultural commodities: March quarter 2016*, Table 10, p 211

3 Methodology for determining the wholesale ethanol price from 1 January 2019

Once we have concluded our assessment of the level of intervention required in the wholesale market (see Chapter 2), we will consider whether any changes should be made to our approach to determining the wholesale price.

If our findings on the level of pricing intervention required in the wholesale ethanol market suggest that a 'less intrusive' approach to determining the price of wholesale ethanol remains appropriate, we propose to retain an import parity price (IPP) methodology¹² but review our approach to estimating it.

The remainder of this section will focus on the principles we propose to apply in assessing the approach we take, outlines the key elements of the IPP methodology established in 2016 and then discusses potential refinements that could be made to the IPP methodology would be appropriate.

3.1 Principles for assessing the methodology for determining wholesale prices

We have developed a set of principles that we propose to use to assess alternative regulatory approaches once we have assessed what level of intervention is required in the market. If we conclude that a less intrusive approach to determining the wholesale price remains appropriate then we propose to apply these principles to help us determine whether to move to an alternative method for estimating the IPP.

Our proposed principles are set out in Box 3.1. These principles draw upon well-established regulatory theory and precedent in monitoring and setting prices, as well as the objectives in the NSW Biofuels Act 2007. We consider that consistency with these principles would help facilitate an efficient, transparent and long-term sustainable approach to setting wholesale ethanol prices. We recognise that in practice there may be a trade-off between some of these principles – say between a framework that provides incentives for efficient behaviour and one that it is easy to understand and administer.

¹² The IPP methodology has been applied since January 2017 to determine wholesale prices for ethanol on a quarterly basis.

Box 3.1 IPART's proposed assessment principles

IPART proposes the following principles for assessing alternative ways of estimating the wholesale price:

- ▼ be capable of responding to expected changes in the wholesale ethanol sector efficiently and effectively – in other words, the framework should be capable of meeting regulatory objectives under different future scenarios.
- ▼ be easy to understand and provide stakeholders with a sufficient level of certainty over future wholesale price regulation.
- ▼ not impose an overly onerous administrative burden, either for stakeholder businesses or IPART. The higher the cost of implementing the framework, the greater the likelihood that the cost will outweigh the expected benefits.
- ▼ provide transparency regarding the determination of components of the wholesale price.
- ▼ promote consistency with regulatory precedent in monitoring and setting prices in other comparable industries IPART regulates (and, to the extent possible, frameworks applied by other regulators), where relevant.

3.2 IPART currently uses an IPP approach to determine the wholesale price

As discussed in chapter 2, for the past two years we have found that a less intrusive approach to determining wholesale ethanol prices is appropriate. Under this approach, we consider that the pricing methodology adopted should be administratively simple for stakeholders and should support the development of a competitive wholesale ethanol market. We consider effective competition in this market is the best way to support the availability of E10 to consumers at an attractive price and to achieve the objective of a sustainable biofuels industry in NSW.

In our 2016 review, we found that an IPP methodology, which includes the relevant fuel excise and customs duties, would support the development of competition in the wholesale ethanol market, and the methodology could be designed to be administratively simple. An IPP methodology means that the wholesale price for ethanol would be set in a way that reflects an option already available to local purchasers of wholesale ethanol – ie, importing ethanol from overseas. This price would therefore reflect the upper bound for what a local purchaser would be willing to pay for domestically produced ethanol.

Since domestic ethanol producers receive a subsidy for fuel excise and do not pay customs duties, import prices are currently higher than domestic ethanol prices. Importing ethanol is therefore not currently an economic option for fuel wholesalers. Using an IPP methodology that includes the full excise and customs duties allows local competition in ethanol production to continue to develop and deliver increasingly competitive prices over time. We expect producers and fuel wholesalers to continue to negotiate wholesale ethanol prices below our determined prices.

The IPP methodology IPART developed in 2016 is similar to the approach used by fuel importers and wholesalers to determine contract prices for petroleum. However, in contrast to the IPP methodologies used for petroleum pricing, which are estimated on a daily basis, we calculate the IPP on a quarterly basis. Updating the wholesale price quarterly provides greater

stability and predictability than more frequent updates, both of which were important to stakeholders. Quarterly pricing periods also have the advantage that they align with the exemption periods in which the prices apply.

Our IPP methodology is designed to reflect the price faced by fuel wholesalers for ethanol delivered to their terminals, rather than the price delivered to an import terminal. The components of the IPP are set out in Table 3.1.

Table 3.1 Components of IPART’s current IPP methodology

| | | |
|------------------------------------|---|---|
| IPP for wholesale ethanol (ex GST) | = | <i>International benchmark price for ethanol including costs of freight from the mill to port and export terminal charges</i> |
| | + | <i>Sea freight</i> |
| | + | <i>Insurance and loss</i> |
| | + | <i>Wharfage in Australia</i> |
| | + | <i>Landing costs in Australia (excise and import duties)</i> |
| | + | <i>Storage & handling at import terminal</i> |
| | + | <i>Freight from import terminal to wholesale fuel terminal</i> |

Source: IPART, *Review of a maximum price for wholesale ethanol in automotive fuel blends*, Final Report, December 2016, p 34

Appendix A provides the detailed IPP methodology we have used to determine quarterly wholesale ethanol prices since 1 January 2017. Chapter 4 in our December 2016 final report on the price for wholesale ethanol sets out the reasons we decided to take the approach to calculating each of the IPP components.¹³ The key component in the IPP is the international benchmark price for ethanol. In the 2016 review, we concluded that the US and Brazil were the two most likely sources for ethanol if it were to be imported to Australia.

3.3 Potential changes to the IPP methodology

Our IPP methodology was selected to support the development of competition in the ethanol market and we expect that ethanol producers and fuel wholesalers will negotiate wholesale ethanol prices below our determined prices. However, we are interested in whether the IPP methodology has worked as intended and remains fit for purpose. We will also consider whether there are any improvements we should make.

We seek information on whether prices paid for wholesale ethanol are below our determined prices. We are also seeking comments from stakeholders on their experiences with our IPP methodology and their views on whether there are any refinements we should make to it. We are also seeking comment on whether the US and Brazil remain the two most likely sources for ethanol if it were to be imported to Australia and whether we should continue to determine the wholesale price quarterly, or move to a longer timeframe.

¹³ IPART, *Review of a maximum price for wholesale ethanol in automotive fuel blends – Final Report*, December 2016, pp 32-45.

3.3.1 Suitability of IPPs developed by commercial providers

We are interested in stakeholders' views on whether we should obtain an IPP calculated by a commercial provider instead of continuing with our current approach (calculating the IPP by sourcing all of the inputs independently). In particular, we seek comments on how commercially provided information could be used to determine wholesale ethanol prices and whether there is support for this from stakeholders.

Two of the commercial options we will consider are:

- ▼ Oil Price Information Services (OPIS) provides pricing and analysis for fuels including ethanol. OPIS is listed as a settlement mechanism on commodity exchanges. OPIS derives ethanol, gasoline and biodiesel prices from many means, including surveying buyers and sellers, and receiving postings electronically from producers and purchasers. OPIS can provide daily price discovery for US ethanol spot markets, and weekly FOB Santos (anhydrous) ethanol spot prices.
- ▼ Platts, part of S&P Global, similarly provides pricing for ethanol at US markets, including Houston, and FOB Santos (anhydrous) ethanol. These assessments are based on transaction data. Platt's fuel ethanol prices are used by exchanges in the Chicago and Rotterdam markets to settle contracts.

We understand it would be possible to purchase the majority of the inputs of our IPP from these commercial providers. While these IPPs are well accepted and simple, they are less transparent to stakeholders, in part because of the cost of accessing the information.

3.3.2 Comparison with the ACCC approach

In our final report on market monitoring for 2016-17, we also indicated that we would assess the differences between our IPP methodology and that adopted by the Australian Competition and Consumer Commission (ACCC).

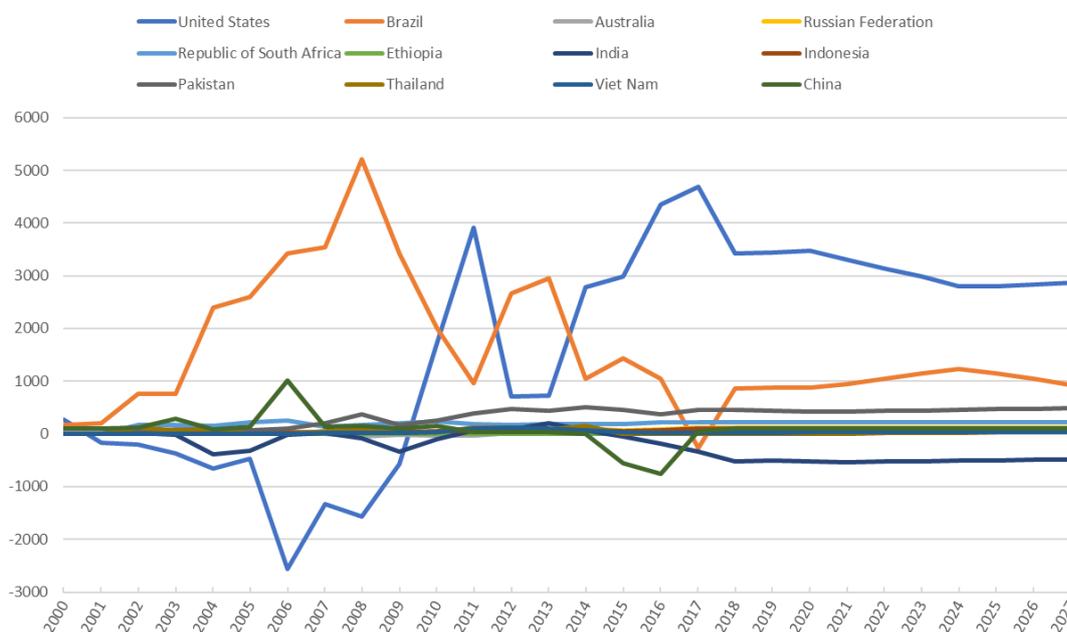
The ACCC has developed IPPs for RULP, PULP and diesel.¹⁴ In relation to ethanol, EnergyQuest prepared a report for the ACCC, which outlined an approach to determining an IPP for fuel grade ethanol (referred to in the remainder of this paper as the ACCC approach).¹⁵ The ACCC approach is similar to our approach in that it builds up an IPP from component parts. However, as the ACCC does not use an ethanol IPP for regulatory purposes, some of the components developed by EnergyQuest for the ACCC in 2010 were only illustrative. The key differences between the two approaches are discussed below (more detail is provided in Appendices A and B).

The first key difference between IPART and the ACCC is that the ACCC approach focuses only on Brazil whereas IPART's approach looks at both Brazil and the US. In 2010, Brazil was the dominant exporter of fuel ethanol and the ACCC's methodology, particularly the determination of the benchmark mill price, transport to port, wharfage costs, and sea freight costs, related specifically to ethanol sold at Sao Paulo and shipped from Santos. However, Brazil is no longer the dominant exporter, as shown below.

¹⁴ EnergyQuest, *Benchmarking the price of fuel ethanol in Australia: A report to the ACCC*, July 2010.

¹⁵ Ibid

Figure 3.1 Major ethanol net exporting countries – historical and forecast net exports (ML)



Note: Includes only countries with historical or forecast net ethanol exports greater than 50ML in any year from 2014 through 2027. Figures for 2017 and 2018 are estimates, and figures from 2019 onward are forecasts.

Source: OECD (2018), *Agricultural Outlook 1990-2028, by commodity*, at <http://stats.oecd.org/#> accessed 2 August 2018.

Second, the ACCC methodology did not specify an averaging approach that could be used to estimate the IPP over time (as this was not used for regulatory determinations). IPART calculates quarterly IPPs by averaging the IPP for a 9 month period prior to the quarterly price determination. We do this by estimating a weekly IPP for each week over the averaging period (37 to 39 weeks).

Finally, there are also some differences in the approaches we have taken to estimating the different components of the IPP. The differences in the IPART approach and the approach outlined in 2010 for the ACCC to determining the Brazilian IPP for ethanol are outlined in Table 3.2.

Table 3.2 Comparison of Brazilian IPP methodologies

| IPP component | IPART approach | ACCC approach |
|---------------------------------------|--|--|
| Benchmark price | ESALQ anhydrous ethanol price index | ESALQ anhydrous ethanol price index |
| Freight from mill-gate to export port | ESALQ research unit into agro-industrial logistics | Source not specified |
| Brazil port costs | ESALQ research unit into agro-industrial logistics | Source not specified |
| Sea freight from Brazil to Australia | Tariffs for 2000MT chemical shipment from Brazil to Asia Pacific sourced from ICIS Market Intelligence | Independent assessment by independent broker, volume not specified (4,000ML considered for worked example) |
| Insurance and loss | Quotes from sea freight insurance brokers | 0.4 per cent of ((FOB value + freight) +10 per cent) |

| IPP component | IPART approach | ACCC approach |
|--|--|--|
| Australian wharfage | Pricing information published by NSW ports | Pricing information published by east coast ports |
| Australian landing costs (taxes) | Australian customs tariff rates for fuel ethanol imports | Australian customs tariff rates for fuel ethanol imports |
| Storage and handling at Australian import terminal | Estimate by IPART based on confidential information | Source not specified |
| Transport costs from port to fuel terminal | Estimate by IPART based on confidential information | Source not specified (to include wholesale margin) |

Source: IPART, Monitoring of wholesale and retail markets for fuel ethanol 2016-17, Final Report, December 2017, p 22. EnergyQuest, Benchmarking the price of fuel ethanol in Australia: A report to the ACCC, July 2010.

As the ACCC approach is focused on a point in time and specific location, we consider that we could not adopt this approach. Nevertheless, we are interested in stakeholder views regarding whether we should consider the alternative data sources used by the ACCC for the components of the Brazilian IPP.

IPART seeks comments on the following

- 7 Have fuel wholesalers and ethanol producers continued to negotiate prices below our determined wholesale prices?
- 8 Do you agree that the principles set out in Box 3.1 are the appropriate principles to apply in assessing our approach?
- 9 Could improvements be made to the IPP methodology without significantly impacting on the simplicity, transparency and predictability of the methodology?
- 10 Do the US and Brazil remain the two most likely sources for ethanol if it were to be imported to Australia in 2018?
- 11 Would adopting a commercial IPP, from providers such as OPIS or Platts, align more closely with the principles set out in Box 3.1?
- 12 Should we continue to determine the wholesale price on a quarterly basis, or should we move to a longer timeframe such as six-monthly determinations?

4 Monitoring retail prices for petrol ethanol blends (E10)

Under the Biofuels Act, we are required to monitor and report on the retail market for E10,¹⁶ including the effect on retail prices of our determined wholesale ethanol prices. As the prices determined under our import parity price (IPP) methodology are unlikely to affect E10 retail prices in the near term, we are not proposing to assess the degree to which E10 retail prices reflect our determined prices for wholesale ethanol.

We note that the Australian Competition and Consumer Commission (ACCC) monitors and reports regularly on retail fuel prices nationally, including retail prices for E10. We are therefore proposing that our monitoring and reporting role should focus on the *difference* in the prices of regular petrol and E10.¹⁷

This chapter outlines how we propose to carry out this assessment and seeks stakeholder feedback on the proposed approaches.

4.1 Our findings in 2016-17

In our most recent market monitoring review (2016-17), we found¹⁸ that consumer choice in retail fuels remains high and availability of E10 had become more widespread under the revised ethanol mandate. Across New South Wales, retail prices of E10 were on average 2.2 cents per litre lower than regular petrol prices between August 2016 and June 2017, and sales of E10 in New South Wales as a proportion of total petrol sales were relatively stable during 2016-17, at around 24%.

As E10 contains around 10% ethanol, this means approximately 2.4% of total petrol sales were ethanol during 2016-17. The majority of volume fuel retailers were granted exemptions from meeting the 6% mandate. Most of these exemptions were granted on the basis that the retailers were not able to meet it despite having taken all reasonable steps to comply.

We found that the NSW Government's 'E10 Fuel for Thought' information campaign and its real-time fuel price monitoring service, FuelCheck, have provided consumers with better information to make fuel choices.¹⁹

¹⁶ Biofuels Act, s 17A(1)(b). While the Act requires us to monitor and report on the retail market for *petrol-ethanol blends*, we note that almost all the petrol-ethanol sales in NSW is in the form of E10.

¹⁷ The difference in the prices reflects the fact that E10 consists of approximately 90% RULP and 10% ethanol.

¹⁸ IPART, *Monitoring of wholesale and retail markets for fuel ethanol 2016-17* Final Report, December 2016, p1.

¹⁹ The Fuelcheck website allows consumers to shop around and find the lowest fuel prices, putting pressure on retailers to offer fuel at competitive prices.

4.2 Proposed approach to market monitoring for 2017-18

As E10 and RULP are close substitutes for many vehicles (but not all), and since E10 consists of approximately 90% RULP and 10% ethanol, we propose to continue to compare average prices for E10 and RULP using historical data from the FuelCheck website.²⁰

To undertake this comparison we propose to consider:

- ▼ whether the price differences between E10 and RULP vary systematically over the NSW petrol price cycle, and the extent to which this may impact any conclusions
- ▼ whether to restrict observations to prices occurring during business hours
- ▼ whether to restrict observations to those stations selling both fuel types.

Accounting for these factors may influence the estimated retail price differences between E10 and RULP. For example, consider the case where one service station changes the price of E10 from \$1.20 to \$1.30 per litre at 8pm on a Tuesday and maintains the higher price for all of Wednesday, while another station changes the price from \$1.20 to \$1.30 at 6am on the Wednesday morning. On the current methodology, the average price across Wednesday for the first station would be \$1.30; but for the second station it would be \$1.275 (since for a quarter of the day the price was \$1.20). However, since sales during the night are typically very small, the bulk of petrol sold at the second station on the Wednesday would have been at \$1.30 per litre, and \$1.275 would underestimate the average price.

Ideally, we would like to use transaction level data when calculating average prices so we could obtain volume weighted averages. But that data is not available to us. Restricting price observations to business hours, and using a proxy for volumes sold at a service station, could provide improved estimates of average prices.

IPART seeks comments on the following

- 13 Do you agree with our proposed approach to monitoring the retail price for E10, including our proposal to compare average E10 and average RULP prices?
- 14 Are there other issues we should consider in monitoring the retail price of E10?

²⁰ This is expected to cover the period August 2016 through to June 2018.



Appendices

A IPART's current methodology for calculating the import parity price (IPP)

This appendix sets out the methodology considered to calculate the reasonable price for wholesale ethanol in each quarterly pricing period in 2019. The first pricing period will commence on 1 January 2019.

A.1 Step 1: Calculating weekly IPPs for US and Brazilian ethanol

The first step in calculating the reasonable price for wholesale ethanol is calculating weekly IPPs for US and Brazilian ethanol for nine months up to one month prior to the commencement of the pricing period. This is illustrated in Figure A.1, which shows that for the pricing period commencing at Month 1, the averaging period for weekly IPPs covers Month -9 through Month -1. Weekly IPPs need to be calculated for every week for which the Friday of that week is within the averaging period. The averaging period will typically include around 39 weeks of weekly IPPs.

Table A.1 sets out volume and mass conversion factors required. Tables A.2 through A.4 describe how the weekly IPPs are calculated for US and Brazilian ethanol. These weekly IPPs include relevant fuel excise and customs duties, but exclude GST.

Table A.1 Conversion factors

| Parameter | Definition | Unit |
|--|---------------------------|-------------------|
| <i>Ethanol kg per litre at 20°C</i> | 1 litre = 0.7893 kg | kg per litre |
| <i>Gallon to litre conversion factor</i> | 1 gallon = 3.78541 litres | Litres per gallon |

Figure A.1 Pricing periods and corresponding averaging periods for weekly IPPs

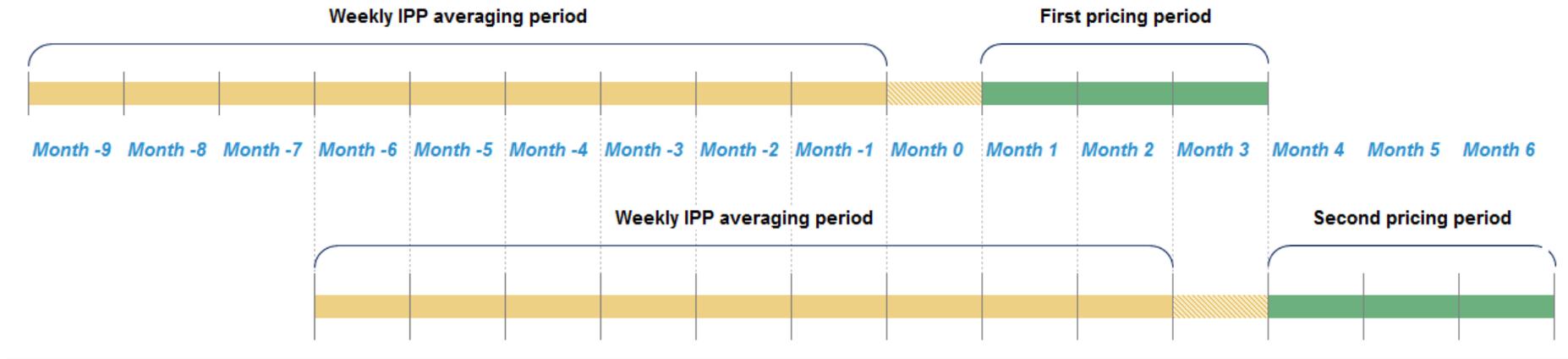


Table A.2 Parameters common to the calculation of weekly IPPs for US ethanol and Brazilian ethanol

| Parameter | Definition | Unit |
|--------------------------------|--|-----------|
| $Ex^{AUD/USD}$ | Daily AUD/USD (A\$1=USD) exchange rate as published by the Reserve Bank of Australia (RBA) at http://www.rba.gov.au/statistics/historical-data.html#exchange-rates | AUD/USD |
| $Ex^{USD/BRL}$ | Daily USD/BRL (US\$1=BRL) exchange rates as published by the US Federal Reserve at https://www.federalreserve.gov/releases/h10/hist/dat00_bz.htm | USD/BRL |
| $Ex_{Week\ t}^{AUD/USD}$ | Arithmetic mean of $Ex^{AUD/USD}$ for Monday through Friday in week t | AUD/USD |
| $Ex_{Week\ t}^{AUD/BRL}$ | Arithmetic mean of $(Ex^{AUD/USD} \times Ex^{USD/BRL})$ for Monday through Friday in week t | AUD/BRL |
| $C_{Wharfage,Week\ t}^{AUD}$ | Wharfage charges at Australian import terminal in week t , based on ex-GST bulk liquids tariffs at Port Botany, published at https://www.nswports.com.au/resources/port-charges/ For the pricing period commencing 1 January 2019, the relevant wharfage charges for the weekly IPP calculations are: <ul style="list-style-type: none"> ▼ 1 July 2017 to 30 June 2018: AUD 2.53/tonne ▼ 1 July 2018 to 30 June 2019: AUD 2.58/tonne For the purpose of our methodology, these amounts are converted to AUD/litre. Wharfage charges in the calculation of weekly IPPs from 1 July 2019 will reflect updates to Port Botany's bulk liquids tariffs. | AUD/litre |
| $C_{S\&H}^{AUD}$ | Cost of storage and handling at import terminal, assumed constant at AUD 0.03/litre | AUD/litre |
| $C_{Freight\ Australia}^{AUD}$ | Cost of freight from import terminal to fuel wholesaler's terminal, assumed constant at AUD 0.015/litre | AUD/litre |
| $T_{Excise,Week\ t}^{AUD}$ | Fuel excise tariffs applicable to imported ethanol in week t , as published by the ATO at https://www.ato.gov.au/business/excise-and-excise-equivalent-goods/fuel-excise/excise-rates-for-fuel/ For the pricing period commencing 1 January 2019, the relevant excise tariff for the weekly IPP calculations are: <ul style="list-style-type: none"> ▼ 5 February 2018 to 31 July 2018: AUD 0.409/litre ▼ 1 August 2018 to 31 January 2019: AUD 0.412/litre Excise tariffs in the calculation of weekly IPPs from 1 February 2019 will reflect updates to the excise tariffs published by the ATO. | AUD/litre |

Table A.3 Calculation of weekly US IPPs

| Parameters | Definition | Unit |
|--------------------------------------|--|-----------|
| $P_{USDA,Week\ t}^{USD}$ | <p>Price of wholesale ethanol at the mill gate in the US in week t.</p> <p>The USDA publishes end-of-week (EOW) low/high spot bids for wholesale ethanol at the mill-gate for seven major ethanol producing regions. Bids are presented in USD/gallon, and are converted to USD/litre.</p> <p>For each week, $P_{USDA,Week\ t}^{USD}$ is calculated as the median of the mid-points of the EOW bids in each of the seven regions (where available).</p> <p>Occasionally, the USDA does not publish the EOW bids. In those cases, we will seek daily price information directly from USDA, and use the latest of the bids obtained for the relevant week. Each $P_{USDA,Week\ t}^{USD}$ used in the calculation of the IPP will be published in the IPP model on our website www.ipart.nsw.gov.au.</p> <p>In the case that we do not obtain the necessary prices for the relevant week, we will use the last price previously available.</p> | USD/litre |
| $P_{USDA,Week\ t}^{AUD}$ | $P_{USDA,Week\ t}^{USD}$ converted from USD to AUD | AUD/litre |
| $C_{US\ Freight}^{USD}$ | <p>Sum of the costs of transporting the ethanol from the mill-gate in the US to Houston Port, plus any port and handling costs at Houston Port.</p> <ul style="list-style-type: none"> ▼ US freight costs assumed to be constant at 0.0561 USD per litre ▼ Houston port costs assumed to be constant at 0.0250 USD per litre | USD/litre |
| $C_{US\ Freight,Week\ t}^{AUD}$ | $C_{US\ Freight}^{USD}$ converted from USD to AUD in week t | AUD/litre |
| $FOB_{US,Week\ t}^{AUD}$ | <p>Estimated price of the ethanol delivered 'Free-On-Board' (FOB) the vessel at Houston port in week t, calculated as</p> $FOB_{US,Week\ t}^{AUD} = P_{USDA,Week\ t}^{AUD} + C_{US\ Freight,Week\ t}^{AUD}$ | AUD/litre |
| $C_{US\ Sea\ freight}^{USD}$ | <p>Cost of sea freight from US to Australia.</p> <p>Assumed constant at 81.43 USD per tonne, converted to USD/litre</p> | USD/litre |
| $C_{US\ Sea\ freight,Week\ t}^{AUD}$ | $C_{US\ Sea\ freight}^{USD}$ converted from USD to AUD in week t | AUD/litre |
| $C_{US\ Insurance,Week\ t}^{AUD}$ | <p>Insurance of ethanol in transit from the US to Australia in week t, calculated as:</p> $C_{US\ Insurance,Week\ t}^{AUD} = 0.4\% \times (FOB_{US,Week\ t}^{AUD} + C_{US\ Sea\ freight,Week\ t}^{AUD})$ | AUD/litre |

| Parameters | Definition | Unit |
|---|--|-----------|
| $C_{US\ Import\ ex\ tax,Week\ t}^{AUD}$ | Total costs associated with the shipping of ethanol from the US to fuel wholesaler's terminal in NSW in week t , excluding taxes. Calculated as: $C_{US\ Import\ ex\ tax,Week\ t}^{AUD} = C_{US\ Sea\ freight,Week\ t}^{AUD} + C_{US\ Insurance,Week\ t}^{AUD} + C_{Wharfage,Week\ t}^{AUD} + C_{S\&H}^{AUD} + C_{Freight\ Australia}^{AUD}$ | AUD/litre |
| $T_{US\ Customs\ duty,Week\ t}^{AUD}$ | As of August 2018, customs duty on ethanol imported from the US was nil, as set out in the Australia – United States Free Trade Agreement (FTA), found here: http://dfat.gov.au/trade/agreements/ausfta/pages/australia-united-states-fta.aspx The customs duty for US ethanol is thus calculated as: $T_{US\ Customs\ duty,Week\ t}^{AUD} = 0.0\% \times FOB_{US,Week\ t}^{AUD}$ If relevant changes are made to the FTA, the changes will be reflected in the calculation of weekly US IPPs for the subsequent pricing period. | AUD/litre |
| $T_{US\ Total,Week\ t}^{AUD}$ | Total import taxes on US ethanol in week t , calculated as: $T_{US\ Total,Week\ t}^{AUD} = T_{US\ Customs\ duty,Week\ t}^{AUD} + T_{Excise,Week\ t}^{AUD}$ | AUD/litre |
| $IPP_{US,Week\ t}^{AUD}$ | Total IPP for US ethanol in week t , calculated as: $IPP_{US,Week\ t}^{AUD} = FOB_{US,Week\ t}^{AUD} + C_{US\ Import\ ex\ tax,Week\ t}^{AUD} + T_{US\ Total,Week\ t}^{AUD}$ | AUD/litre |

Table A.4 Calculation of weekly Brazilian IPPs

| Parameters | Definition | Unit |
|---------------------------|---|-----------|
| $P_{ESALQ,Week\ t}^{USD}$ | Price of wholesale ethanol at the mill gate in São Paulo, Brazil in week t . The Centre of Advanced Studies on Applied Economics (CEPEA) at the “Luiz de Queiroz” College of Agriculture (ESALQ) at the University of São Paulo publishes weekly volume-weighted average spot prices for wholesale anhydrous ethanol at the mill-gate for ethanol producers in São Paulo. This publication is referred to as the CEPA/ESALQ Anhydrous Ethanol Index - São Paulo (ESALQ index), and is published at: http://www.cepea.esalq.usp.br/en/indicator/ethanol.aspx The index is published in USD per litre. | USD/litre |
| $P_{ESALQ,Week\ t}^{AUD}$ | $P_{ESALQ,Week\ t}^{USD}$ converted from USD to AUD in week t | AUD/litre |
| $C_{BR\ Freight}^{BRL}$ | Sum of the costs of transporting the ethanol from the mill-gate in São Paulo to Santos Port, plus any port and handling costs at Santos Port. | BRL/litre |

| Parameters | Definition | Unit |
|---|---|-----------|
| | <ul style="list-style-type: none"> ▼ São Paulo freight costs assumed to be constant at 0.10 BRL per litre ▼ Santos port costs assumed to be constant at 0.10 BRL per litre | |
| $C_{BR\ Freight,Week\ t}^{AUD}$ | $C_{BR\ Freight}^{BRL}$ converted from USD to AUD in week t | AUD/litre |
| $FOB_{BR,Week\ t}^{AUD}$ | Estimated price of the ethanol delivered 'Free-On-Board' (FOB) the vessel at Santos port in week t , calculated as $FOB_{BR,Week\ t}^{AUD} = P_{ESALQ,Week\ t}^{AUD} + C_{BR\ Freight,Week\ t}^{AUD}$ | AUD/litre |
| $C_{BR\ Sea\ freight}^{USD}$ | Cost of sea freight from Brazil to Australia. Assumed constant at 87.50 USD per tonne for 2018, converted to USD/litre | USD/litre |
| $C_{BR\ Sea\ freight,Week\ t}^{AUD}$ | $C_{BR\ Sea\ freight}^{USD}$ converted from USD to AUD in week t | AUD/litre |
| $C_{BR\ Insurance,Week\ t}^{AUD}$ | Insurance of ethanol in transit from Brazil to Australia in week t , calculated as: $C_{BR\ Insurance,Week\ t}^{AUD} = 0.4\% \times (FOB_{BR,Week\ t}^{AUD} + C_{BR\ Sea\ freight}^{AUD})$ | AUD/litre |
| $C_{BR\ Import\ ex\ tax,Week\ t}^{AUD}$ | Total costs associated with the shipping of ethanol from Brazil to fuel wholesaler's terminal in NSW in week t , excluding taxes. Calculated as: $C_{BR\ Import\ ex\ tax,Week\ t}^{AUD} = C_{BR\ Sea\ freight}^{AUD} + C_{BR\ Insurance,Week\ t}^{AUD} + C_{Wharfage,Week\ t}^{AUD} + C_{S\&H}^{AUD} + C_{Freight\ Australia}^{AUD}$ | AUD/litre |
| $T_{BR\ Customs\ duty,Week\ t}^{AUD}$ | As of August 2018, customs duty on ethanol imported from Brazil was 4.0%, as specified in Schedule 3 to the Customs Tariff Act 1995 – Item 2207.20.10. The customs duty for Brazilian ethanol is thus calculated as: $T_{BR\ Customs\ duty,Week\ t}^{AUD} = 4.0\% \times FOB_{BR,Week\ t}^{AUD}$ If relevant changes are made to the customs duty that applies to ethanol imported from Brazil, the changes will be reflected in the calculation of weekly Brazilian IPPs for the subsequent pricing period. | AUD/litre |
| $T_{BR\ Total,Week\ t}^{AUD}$ | Total import taxes on Brazilian ethanol in week t , calculated as: $T_{BR\ Total,Week\ t}^{AUD} = T_{BR\ Customs\ duty,Week\ t}^{AUD} + T_{Excise,Week\ t}^{AUD}$ | AUD/litre |
| $IPP_{BR,Week\ t}^{AUD}$ | Total IPP for Brazilian ethanol in week t , calculated as: $IPP_{BR,Week\ t}^{AUD} = FOB_{BR,Week\ t}^{AUD} + C_{BR,Import\ ex\ tax,Week\ t}^{AUD} + T_{BR\ Total,Week\ t}^{AUD}$ | AUD/litre |

A.2 Step 2: Calculating the price for wholesale ethanol

After weekly IPPs for US and Brazilian ethanol have been calculated for all relevant weeks in the averaging period, they are combined to produce the price for wholesale ethanol. Let t represent the week-number of a given week in an averaging period, so Week 1 is the first week in the averaging period, etc.

The reasonable price for wholesale ethanol is calculated as follows:

Reasonable price for wholesale ethanol =

$$\frac{1}{n} \sum_{t=1}^n \text{MIN}\{IPP_{US,Week t}^{AUD}, IPP_{BR,Week t}^{AUD}\}$$

Where:

Week 1 = the first week ending on a Friday within the averaging period

n = the number of Fridays in the averaging period

Table A.5 sets out the averaging periods and corresponding week numbers for the pricing periods in 2019.

Table A.5 Averaging periods and week numbers

| Pricing period | Week 1 is the week ending on the following Friday | Week n is the week ending on the following Friday | Number of Fridays in period, n |
|-----------------------|--|--|---------------------------------------|
| 2019 Q1 | 2 March 2018 | 30 November 2018 | 40 |
| 2019 Q2 | 1 June 2018 | 22 February 2019 | 39 |
| 2019 Q3 | 7 September 2018 | 31 May 2019 | 39 |
| 2019 Q4 | 7 December 2018 | 30 August 2019 | 39 |

B ACCC methodology for calculating the import parity price (IPP)

This appendix describes the methodology considered by the ACCC to determine an import parity price for fuel grade ethanol, as set out in the 2010 report “Benchmarking the Price of Fuel Ethanol in Australia”.²¹ It should be noted that this approach was not used for regulatory purposes, and some components were only illustrative.

B.1 Step 1: Determine dominant source of fuel ethanol for the export market

In the 2010 report, it was argued that “So long as Brazil is the dominant source of fuel ethanol for the export market, it can be argued that a benchmark ethanol price should be based on Brazil price quotations. the benchmark price should be an FOB price at a major export terminal in Brazil”.²² The methodology then proceeds to determine the cost of fuel ethanol imported from Santos, located near São Paulo.

Brazil was indeed the dominant exporter up to 2009; however, it is no longer the dominant exporter (see chapter 2). In 2017 Brazil was a net importer, importing 267ML of ethanol, whereas the United States exported 4,684ML.²³ The most recent OECD forecasts expect the United States to remain the largest exporter through to 2027.²⁴

The IPART methodology in Appendix A obtains an average of weekly IPPs for 9 months up to one month prior to the commencement of the pricing period. By contrast, the ACCC methodology calculates the IPP at a single point in time. There is no averaging of prices.

B.2 Step 2: Determine IPP

The assessment of freight charges for chemical carriers on the Brazil/Australia route were stated to present challenges compared to more common routes such as Singapore/Australia. Two options were described:

- ▼ Obtain a consensus assessment for specific routes from ship owners and brokers familiar with Australian trade.
- ▼ Contract with an independent broker to obtain an independent assessment.

²¹ EnergyQuest, *Benchmarking the price of fuel ethanol in Australia: A report to the ACCC*, July 2010.

²² *Ibid*, p 23.

²³ OECD (2018), *Agricultural Outlook 1990-2028*, by commodity, at <http://stats.oecd.org/#>

²⁴ *Ibid*.

The latter was stated to be preferred in the report. For the purposes of the report, a freight assessment of US\$110 pmt was used, reflective of a 4,000 tonne cargo of ethanol from Brazil to Australia.²⁵

The calculation of the IPP is set out in the following box, and in more detail in Table B1.

Box 2.3 Indicative ethanol IPP²⁶

| Assumptions: | late May 2010 | |
|---|------------------------|-------------|
| Density (kg/l/litres per tonne) | 0.789 | 1267 |
| Cargo Size (tonnes/ML) | 3,165 | 4.0 |
| Freight (US\$ per tonne/ US\$ cpl) | 110 | 8.68 |
| Freight from mill to Santos (US\$per t/US\$ cpl) | 60.00 | 4.74 |
| Assumed load port | Santos | |
| Assumed discharge port | east coast Australia | |
| ESALQ Anhydrous 24 May to 28 May, 2010 (US\$ cpl) | 44.51 | |
| Exchange rate AUD/USD (late May 2010) | 0.85 | |
| Calculation: | cents per litre | |
| | US\$ | A\$ |
| Ethanol Price (FOB Santos) | 49.2 | 57.9 |
| plus Freight | 8.7 | 10.2 |
| plus Insurance and loss | | 0.3 |
| Price landed, east coast Australia | | 68.4 |
| plus Import duty (5% of CFR price) | | 2.5 |
| plus Wharfage (average east coast Australia) | | 0.2 |
| Ethanol Import Parity Price (excl GST) | | 71.2 |

Source: EnergyQuest, *Benchmarking the price of fuel ethanol in Australia: A report to the ACCC*, July 2010, p.32

²⁵ EnergyQuest, *Benchmarking the price of fuel ethanol in Australia: A report to the ACCC*, July 2010, p.30.

Table B.1 Calculation of Brazilian IPPs

| Parameters | Definition | Unit |
|-------------------------|---|-----------|
| $Ex^{AUD/USD}$ | AUD/USD (A\$1=USD) exchange rate (unspecified source) | AUD/USD |
| $Ex^{USD/BRL}$ | USD/BRL (US\$1=BRL) exchange rate (unspecified source) | USD/BRL |
| $C_{Wharfage}^{AUD}$ | Wharfage charges at east coast Australian import terminals, based on ex-GST bulk liquids tariffs at Port Botany, Port of Brisbane and Port of Melbourne (Coode Is). For the purpose of the methodology, these amounts are converted to AUD/litre. Wharfage will reflect updates to Port Botany's bulk liquids tariffs. | AUD/litre |
| C_{Term}^{AUD} | Cost of storage and handling at import terminal, freight from import terminal to fuel wholesaler's terminal, and margin, assumed constant at AUD 0.07/litre. | AUD/litre |
| T_{Excise}^{AUD} | Fuel excise tariffs applicable to imported ethanol in week t , as published by the ATO at https://www.ato.gov.au/business/excise-and-excise-equivalent-goods/fuel-excise/excise-rates-for-fuel/ For the pricing period commencing 1 January 2019, the relevant excise tariff for the weekly IPP calculations are: ▼ 5 February 2018 to 31 July 2018: AUD 0.409/litre ▼ 1 August 2018 to 31 January 2019: AUD 0.412/litre Excise tariffs in the calculation of weekly IPPs from 1 February 2019 will reflect updates to the excise tariffs published by the ATO. | AUD/litre |
| P_{ESALQ}^{USD} | Price of wholesale ethanol at the mill gate in São Paulo, Brazil. The Centre of Advanced Studies on Applied Economics (CEPEA) at the "Luiz de Queiroz" College of Agriculture (ESALQ) at the University of São Paulo publishes weekly volume-weighted average spot prices for wholesale anhydrous ethanol at the mill-gate for ethanol producers in São Paulo. This publication is referred to as the CEPA/ESALQ Anhydrous Ethanol Index - São Paulo (ESALQ index), and is published at: http://www.cepea.esalq.usp.br/en/indicator/ethanol.aspx The index is published in USD per litre. | USD/litre |
| P_{ESALQ}^{AUD} | P_{ESALQ}^{USD} converted from USD to AUD | AUD/litre |
| $C_{BR\ Freight}^{USD}$ | Sum of the costs of transporting the ethanol from the mill-gate in São Paulo to Santos Port, plus any port and handling costs at Santos Port. ▼ Indicative cost of \$US60 per tonne, converted to USD/litre | USD/litre |

| Parameters | Definition | Unit |
|---------------------------------|---|-----------|
| $C_{BR\ Freight}^{AUD}$ | $C_{BR\ Freight}^{BRL}$ converted from USD to AUD | AUD/litre |
| FOB_{BR}^{AUD} | Estimated price of the ethanol delivered 'Free-On-Board' (FOB) the vessel at Santos port in, calculated as $FOB_{BR}^{AUD} = P_{ESALQ}^{AUD} + C_{BR\ Freight}^{AUD}$ | AUD/litre |
| $C_{BR\ Sea\ freight}^{USD}$ | Cost of sea freight from Brazil to Australia. Indicative cost of 110 USD per tonne, converted to USD/litre | USD/litre |
| $C_{BR\ Sea\ freight}^{AUD}$ | $C_{BR\ Sea\ freight}^{USD}$ converted from USD to AUD | AUD/litre |
| $C_{BR\ Insurance}^{AUD}$ | Insurance of ethanol in transit from Brazil to Australia, calculated as: $C_{BR\ Insurance}^{AUD} = 0.4\% \times (1.1 * (FOB_{BR}^{AUD} + C_{BR\ Sea\ freight}^{AUD}))$ | AUD/litre |
| $C_{BR\ Import\ ex\ tax}^{AUD}$ | Total costs associated with the shipping of ethanol from Brazil to east coast fuel wholesaler terminals in NSW (including margin), excluding taxes. Calculated as: $C_{BR\ Import\ ex\ tax}^{AUD} = C_{BR\ Sea\ freight}^{AUD} + C_{BR\ Insurance}^{AUD} + C_{Wharfage}^{AUD} + C_{Term}^{AUD}$ | AUD/litre |
| $T_{BR\ Customs\ duty}^{AUD}$ | As of August 2018, customs duty on ethanol imported from Brazil was 4.0%, as specified in Schedule 3 to the Customs Tariff Act 1995 – Item 2207.20.10. The customs duty for Brazilian ethanol is thus calculated as: $T_{BR\ Customs\ duty}^{AUD} = 4.0\% \times FOB_{BR}^{AUD}$ If relevant changes are made to the customs duty that applies to ethanol imported from Brazil, the changes will be reflected in the calculation of weekly Brazilian IPPs for the subsequent pricing period. | AUD/litre |
| $T_{BR\ Total}^{AUD}$ | Total import taxes on Brazilian ethanol in, calculated as: $T_{BR\ Total}^{AUD} = T_{BR\ Customs\ duty}^{AUD} + T_{Excise}^{AUD}$ | AUD/litre |
| IPP_{BR}^{AUD} | Total IPP for Brazilian ethanol in week t, calculated as: $IPP_{BR}^{AUD} = FOB_{BR}^{AUD} + C_{BR,Import\ ex\ tax}^{AUD} + T_{BR\ Total}^{AUD}$ | AUD/litre |