IPART Independent Pricing and Regulatory Tribunal | NSW

Determining ethanol wholesale prices and monitoring the retail market for E10

Final Report

September 2021

Transport »

Tribunal Members

The Tribunal members for this review are:

Ms Carmel Donnelly, Chair
Ms Deborah Cope
Ms Sandra Gamble

Enquiries regarding this document should be directed to a staff member:

Joyce Tapper	(02) 9290 8464
Jessica Robinson	(02) 9290 8405

The Independent Pricing and Regulatory Tribunal (IPART)

We make the people of NSW better off through independent decisions and advice. IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website.

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders, past, present and emerging.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

Summary

The NSW *Biofuels Act 2007* (Biofuels Act) requires fuel sellers to ensure that 6% of fuel sold is ethanol.[1] Fuel sellers can be exempt from this requirement on various grounds. One of these is that the wholesale price of ethanol exceeds the price determined by IPART.[2]

Our existing wholesale price setting approach remains appropriate

Since we commenced our price determinations in 2017, we have set the reasonable wholesale price for ethanol in line with what it would cost retailers if they had to buy it from overseas (the "import parity price" or "IPP").

We have reviewed the conditions in the ethanol markets and consulted with stakeholders, and we consider that this approach remains appropriate.

However, we have simplified how we calculate the import parity price by reducing the number of components that require updates at each review. This reduces the costs of data we collect, while only having a small impact on our determined prices.

In December 2021, we will publish the wholesale price that will apply from 1 January 2022 using this simplified method.

Our current approach reflects a high degree of consumer choice between fuels

Our approach to determining wholesale prices depends on the level of competition in the retail and wholesale markets. Where there is effective competition in one or both of these markets, it will protect customers from excessive prices.

In the NSW retail market, around 20% of the fuel sold is E10 (down from around 40% in 2011). E10 competes with regular unleaded petrol ("U91"), and premium fuels, which limits the price that suppliers can charge for ethanol. If the wholesale price of ethanol is too high, the retail price of E10 would rise relative to other fuels and customers would switch fuels.

Because the price of ethanol is limited in this way, we have been setting wholesale prices based on an estimate of the market price of importing ethanol. This approach reduces the risk of the determined wholesale price being set too low, which could impact the financial viability of ethanol suppliers and discourage new entry.

The sharp reduction in fuel prices in 2020 affected the retail and wholesale markets

The COVID-19 pandemic led to a sharp reduction in fuel prices in 2020. As a result, the wholesale price of ethanol exceeded the wholesale price of U91 for the first time since we began our monitoring role.

However, retailers continued to sell E10 at a discount to U91. This discount was an average of 2.1 cents, or 1.7% over the 2020 calendar year.[3] Retailers reported that their margins reduced as a result.

The fall in retail fuel prices also made it difficult for ethanol producers to compete with other fuels over 2020. The 3 local producers of ethanol stopped producing fuel ethanol at various stages during early 2020. United Petroleum, which had a market share of roughly 20% has remained closed since June 2020.

Some stakeholders consider that the reduced competition in the wholesale ethanol market has allowed suppliers to increase their wholesale prices of ethanol. They consider that IPART should set a lower wholesale ethanol price. They have suggested that we adjust our existing import parity price calculation to include domestic excise rates, instead of the higher excise for imported fuel. This would be closer to the cost of locally produced ethanol.

Customers are unlikely to require additional protection from a lower regulated price

We have found that retail fuel prices are continuing to protect consumers from excessive wholesale ethanol prices, and so we do not need to set a lower ethanol wholesale price. Therefore, our decision is to continue to set wholesale prices using the import parity price (including the excise rates for imported fuel). Stakeholders that made public submissions to our Draft Report supported this decision.

We recognise that where wholesale ethanol prices exceed the price of U91 wholesale prices, and retailers are required to sell E10, retailers may face lower margins on fuel sales. However, wholesale fuel prices have recovered over the first 6 months of 2021 and wholesale ethanol has regained competitiveness. This should make it easier for retailers to set prices for E10 and U91 that reflect their relative costs, allowing retailers to maintain their margins on E10.

Findings

1. Sales of fuel ethanol in NSW averaged around 2.1% of total petrol sales in 2020-21. This remains below the 6% required to meet the ethanol mandate. 5

2. The wholesale price of E10 exceeded the wholesale price of U91 between March 2020 and February 2021. 8

3. Our determined price of ethanol was higher than our estimate of the market price in 2020. To date, it has also been higher than the market price in 2021. As a result, our determined price of ethanol has not impacted the price of E10. 8

4. The price of E10 follows the price of U91. E10 was an average of 2.1 cents lower of U91 over 2020-21. 10

5. The delivered cost of wholesale ethanol (including excise) for a new entrant is likely to be around 25% higher in 2021 compared to 2016. This largely reflects the increase in domestic excise from 2.6 c/L to 14 c/L. 20

6. Consumers continue to have an effective choice of fuel with widespread availability of E10, U91 and premium unleaded fuels. 87% of fuel stations sell E10, and 76% sell U91. 58% of stations sell both E10 and U91. 26

7. Customer choice between fuels is supported by a range of comparison websites and apps including the NSW Government's FuelCheck service. 26

8. Low fuel prices over 2020 have reduced the profitability of ethanol suppliers. 28

9. United Petroleum closed its Dalby Bio-Refinery in June 2020. There are now only 2 ethanol producers on the East Coast of Australia, down from 3. 28

10. It is unlikely that new suppliers will enter the wholesale market in the short term. 29

Decisions

1. Additional price constraints are not required because a high degree of choice between fuels for consumers continues to protect them from excessive wholesale ethanol prices. 13

2. IPART will continue to determine wholesale ethanol prices based on the price of importing ethanol from overseas (the "import parity price"). 14

3. IPART will simplify the import parity price model by reducing the number of cost components that require updating at each review: 16
   - We will to hold cost items that represent 10% or less of the import parity price constant for the next 3 years using their 5-year average.

4. We will continue to include the excise rates for imported fuel in our import parity price calculation. 20

Contents

_Toc96935601

Summary iii

1 Introduction 1

1.1 All NSW retailers are exempt from meeting the mandate in NSW 1
1.2 The mandate is intended to support the development of the biofuels industry 2

2 Scope and process for this review 3

2.1 Purpose of the review 3
2.2 Review timetable 3

3 Recent trends in the fuel markets 4

3.1 The volume of fuel sold has fallen over time 4
3.2 The share of E10 sales has reduced 5
3.3 COVID-19 has had a significant impact on fuel prices 6
3.4 Retail prices of E10 remain lower than U91 prices 8

4 How we set wholesale ethanol prices 11

4.1 Our framework for assessing how we should set prices 11
4.2 We set prices based on a high degree of customer choice 13
4.3 We set the wholesale ethanol price in line with import costs 14
4.4 How the import price compares with viable market prices 17

5 Consumer choice in the retail market 23

5.1 Most petrol stations offer a choice of fuels 23
5.2 E10 is the cheapest fuel in the retail market 25

6 Competition in the wholesale ethanol market 27

6.1 Market concentration is high 27
6.2 Reduced profitability has further reduced competition 27
6.3 Further new entry is unlikely in the short term 28

A Changes in import parity price cost components 31

B U91 prices and gross profit margins – Sydney compared to other cities 33

B.1 Sydney has the highest U91 retail prices 33
B.2 TGPs across the capital cities are close 34
B.3 The margin between the TGP and retail prices for U91 in Sydney is higher than other capital cities 35
B.4 GIRDs have been increasing over time 35
B.5 GIRDs increase when the TGPs decrease 36
B.6 GIRDs are higher on U91 37

C Changes to this report since it was first issued by IPART in September 2021 38

1 Introduction

Since 2007, fuel retailers in NSW have been required to sell a minimum percentage of biofuels under the Biofuels Act 2007 *(NSW)*. From 2011, at least 6% of all petrol sold must be ethanol ("the ethanol mandate") [4], and at least 2% of all diesel sold must be biodiesel.[5]

Ethanol is sold in fuel as E10, which is an unleaded fuel mix comprising of 9% to 10% ethanol.[6] This means that at least 60% of fuel sold must be E10. However, consumers continue to have a choice of the fuel that they buy.

Alongside the sales requirements, fuel retailers must also meet availability requirements, including ensuring that:

- a petrol-ethanol blend is made available at each service station[7]
- a petrol-ethanol blend is made as accessible to customers as any other type of petrol.[8]

Queensland is the only other Australian state that has a biofuels mandate, commencing in January 2017. Since July 2018 it has required that 4% of all fuel sold must be ethanol and 0.5% of all diesel must be biodiesel.[9]

1.1 All NSW retailers are exempt from meeting the mandate in NSW

No retailers in NSW are meeting the ethanol mandate. Around 60% of all petrol sold must be E10 to meet the mandate, but this level has never been reached. E10 sales across NSW have fallen from a high of around 39% of fuel sales in 2011 down to 21% in 2020-21. The NSW Government has found that the ethanol mandate has not been met because of the low-price differentials between several types of fuel, and customer concerns about ethanol fuels.[10]

All retailers have received exemptions from meeting the mandate on various grounds. For example, retailers can be exempt if they make a petrol-ethanol blend available and as accessible to customers as any other type of petrol.

One of the grounds for receiving an exemption is if ethanol producers sell ethanol into the market for more than the price determined by IPART.[11] Since 2017, IPART's determined price has been between 111.4 cents per litre (c/L) and 116.7 c/L. It is currently 114.2 c/L. This has been higher than the prices of wholesale ethanol negotiated in the market.

Since IPART began determining wholesale prices, no retailers have applied for exemption on the grounds that the wholesale price of ethanol has exceeded IPART's determined price. The Australian Institute of Petroleum (AIP) submitted that this is because retailers have sought exemptions based on the more simplistic exemption approach around the availability of E10.[12]

1.2 The mandate is intended to support the development of the biofuels industry

The purpose of the requirements on the sale of ethanol is to support the development of a sustainable and competitive biofuels industry in NSW. Other objectives include:

- improving air quality
- addressing climate change by reducing greenhouse gas emissions (Box 1.1).
- providing consumers with cheaper fuel options
- reducing the reliance of NSW on imported petroleum products
- supporting regional development.[13]

The NSW Government reviewed the Act and Regulation and affirmed that these objectives are still valid. It also concluded that the Act and Regulation are still largely appropriate. It made 8 recommendations to reduce regulatory burden and to strengthen the Act's effectiveness.[14]

In the future, some of these objectives may be met with the take-up of electric vehicles. Because the electricity is often generated a long way from where the vehicle is used, replacing conventional cars with electric vehicles improves air quality in cities. Depending on the sources of electricity, electric vehicles can also reduce greenhouse gas emissions.

Box 1.1 Biofuels can help reduce greenhouse emissions

The UN climate science reports have found that biofuels represent a potential measure to address climate change.[a] However the effectiveness of biofuels in reducing carbon emission depends on the circumstances of production and transportation. To accurately assess the impact of biofuels a 'whole of life cycle' analysis needs to be considered. This includes the energy it takes to grow crops, harvest them, convert them to fuel, transport them to distribution sites and combust them.

In 2008 the CSIRO found that E10 fuel produced under Australian conditions has between 2% to 5% lower CO_2 emissions than U91.

a. NSW Fair Trading, E10 and the environment, accessed 31 March 2021.

2 Scope and process for this review

This review covers each of IPART's functions under the Biofuels Act. These are:

- determining and periodically reviewing a reasonable price for wholesale ethanol for use in the production of petrol-ethanol blend
- monitoring the retail market (including prices) for petrol-ethanol blend, including reporting on the effect of our determined price on the retail market.[15]

The legislation does not specify how often we must undertake our functions. Between 2017 and 2019 we set a reasonable price for ethanol each quarter and monitored the retail market annually.

In our last market monitoring report completed in December 2019, we decided to reduce the frequency of the report to every 2 years and move to annual price determinations.[16] This was because the market has been stable, and also to reduce the regulatory costs associated with the ethanol mandate.

2.1 Purpose of the review

Since we commenced our role determining prices, we have set the ethanol price in NSW at the level it would cost retailers to import ethanol from overseas. The purpose of this review is to determine if we should make any changes to this approach.

This review also includes our findings on the retail market. These have been taken into account in our approach to determining a reasonable price for wholesale ethanol. As discussed in Chapter 4, our approach to setting ethanol prices has depended on the level of competition in the fuel retail market and the wholesale market for ethanol. Where there is effective competition in one or both of these markets, it will protect customers from excessive prices, and a less intrusive approach to price regulation is needed.

2.2 Review timetable

We commenced this review in February this year. We released a Draft Report in April and received 4 submissions. We have considered these submissions in making our final decisions. In December we will determine the wholesale ethanol price to apply from January 2022.

3 Recent trends in the fuel markets

The onset of the COVID-19 pandemic in 2019-20 was a significant shock to the global fuel market. Fuel demand dropped dramatically, and the supply of crude oil did not immediately fall in response. This resulted in significant falls in global fuel prices, which are a key determinant of the prices of both U91 and E10. Over 2021, prices have progressively increased back to pre-pandemic levels.

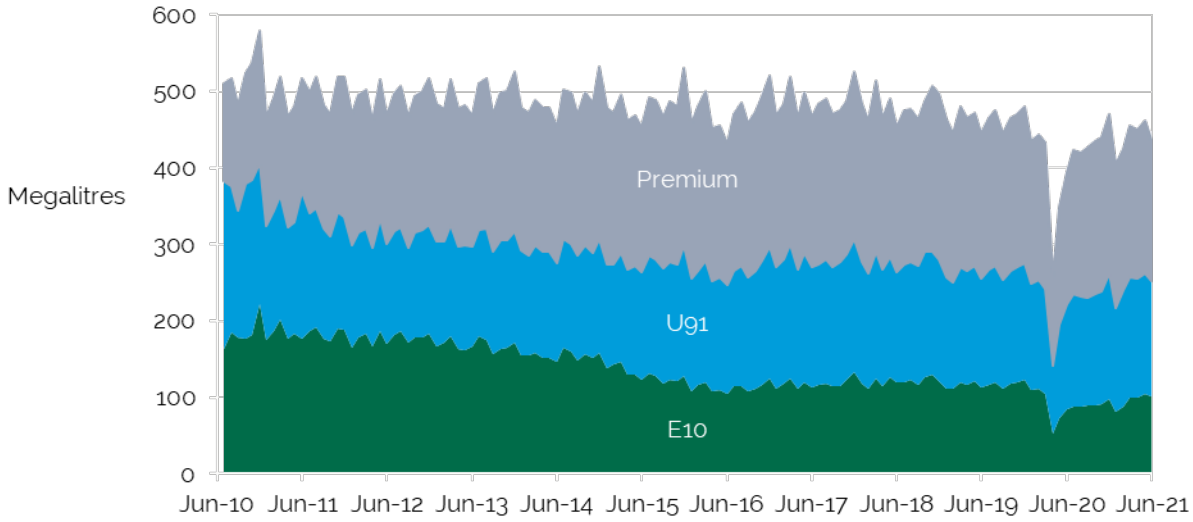
This chapter provides more detail about trends in fuel and ethanol sales and prices.

3.1 The volume of fuel sold has fallen over time

The total volume of fuel sold in NSW has been falling over the past decade (Figure 3.1). Fuel sales fell even though total vehicle kilometres travelled increased as the population and the economy rose,[17] indicating that consumers are purchasing more fuel-efficient vehicles.

Energy efficient hybrid and electric vehicles are also becoming increasingly popular with motorists. The CSIRO forecasts that electric cars will account for at least 30% of sales by 2035, but the take-up could be much higher.[18] Over the next few years the price of electric vehicles is expected to be similar to the price of petrol vehicles.[19] When this occurs there is likely to be a rapid increase in demand for electric vehicles.

Figure 3.1 Total volume of fuel sold in NSW



Source: Australian Petroleum Statistics, Australian Petroleum Statistics – Issue 299 June 2021, Table 3B.

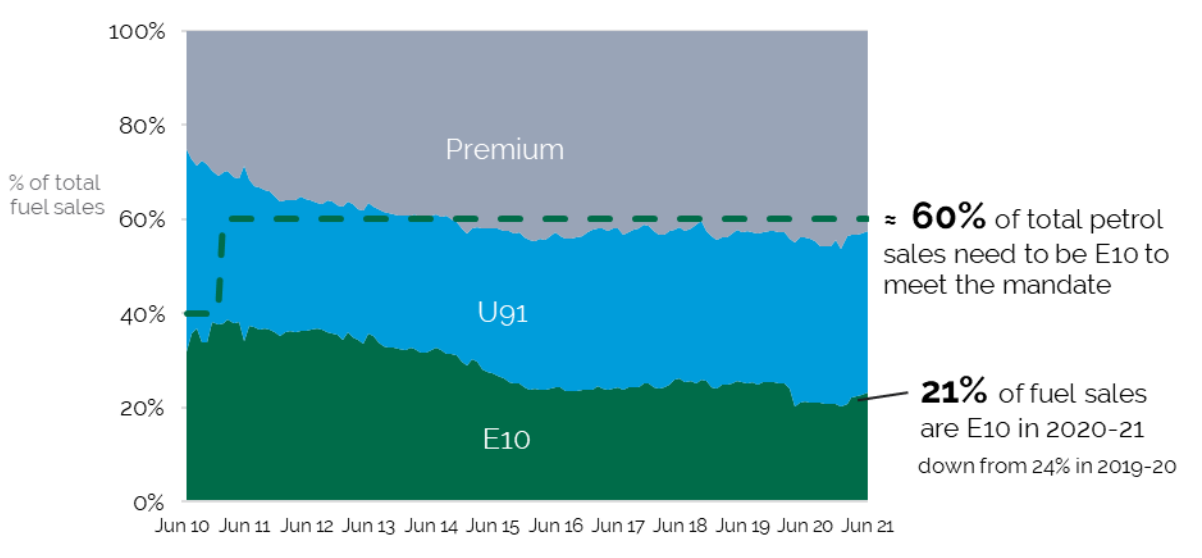
Figure 3.1 shows that during 2020, total fuel sales fell by about 40% between March and April NSW due to the COVID-19 pandemic. This was primarily driven by travel restrictions, which substantially reduced the demand for petrol. Fuel sales were at their lowest in April 2020 but recovered thought 2020-21.

3.2 The share of E10 sales has reduced

Figure 3.1 and Figure 3.2 show that the relative shares of the type of fuel sold have also changed over time. As a proportion of all sales, E10 peaked at around 39% in March 2011 and have roughly halved to 21% in 2020-21. This is significantly less than the 60% of fuel sales required by the ethanol mandate.

In comparison, the share of premium blends of fuel sales have increased from 29% in 2010-11 to 44% in 2020-21. Sales of U91 have remained relatively steady over the period and accounted for around 34% of total sales in 2020-21.[20]

Figure 3.2 Petrol types sold in NSW since 2010-11



Source: Australian Petroleum Statistics, Australian Petroleum Statistics – Issue 299 June 2021, Table 3B

As noted in Chapter 1, the NSW Government considers that the low market share for ethanol reflects the low price differentials between several types of fuel, and customer concerns about ethanol fuels.[21] In addition, the further fall in demand for E10 during 2020 could reflect that fuel prices were low by historic standards. When fuel prices are lower in general, the incentive for price sensitive customers to purchase the lowest cost fuel, E10, is not as strong. This is because U91 and premium fuels are also more affordable.

The long-term increase in the share of premium fuels could also be driven by the increased fuel efficiency of new vehicles. Because these cars require less fuel overall, consumers can purchase more expensive fuel without increasing their total fuel costs.

Finding

1. Sales of fuel ethanol in NSW averaged around 2.1% of total petrol sales in 2020-21. This remains below the 6% required to meet the ethanol mandate.

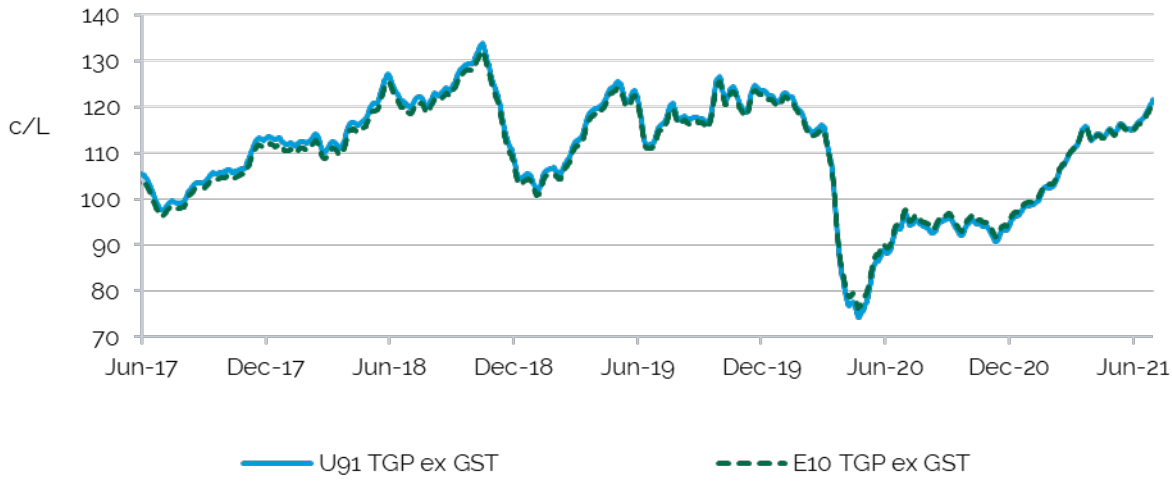
3.3 COVID-19 has had a significant impact on fuel prices

Fluctuations in the world price of crude oil are passed on to consumers through petrol prices. The price of E10 closely follows the price of U91. This is because E10 is mostly U91 petrol (90 to 91%), with ethanol making up the remaining 9 to 10%,

The COVID-19 pandemic caused global oil prices to fall significantly. This was due to a surge in global oil production at the same time travel restrictions were introduced, which significantly reduced demand for fuel. In Australia, this caused the wholesale prices for E10 and U91 to fall by around 35% between January 2020 and April 2020 (based on the terminal gate prices (TPGs)[a]) (Figure 3.3). By March 2021, fuel prices had risen to pre-COVID levels.

All prices in this report are in nominal dollars.

Figure 3.3 U91 and E10 terminal gate prices (ex GST, 7 day rolling averages)



Source: Daily average Sydney TPGs for regular petrol and E10 from FuelTrac

Figure 3.3 shows the wholesale price of E10 was more expensive than the wholesale price of U91 for the first time in March 2020. This is shown more clearly in Figure 3.4 below. For the 6 months prior to the COVID-19 pandemic, wholesale U91 prices were around 0.9 cents higher than E10 terminal gate prices. But by April 2020, they were around 2 cents lower. This difference reduced over 2020. U91 prices increased back above E10 price in March 2021, and they were 0.5 cents higher as at June 2021.

The E10 wholesale price increased above U91 prices due to the significant reduction in U91 prices (which can be seen in Figure 3.3). On the other hand, wholesale ethanol prices are likely to have remained fairly steady over the same period (Figure 3.5). We used the terminal gate prices to estimate the market price of wholesale ethanol.

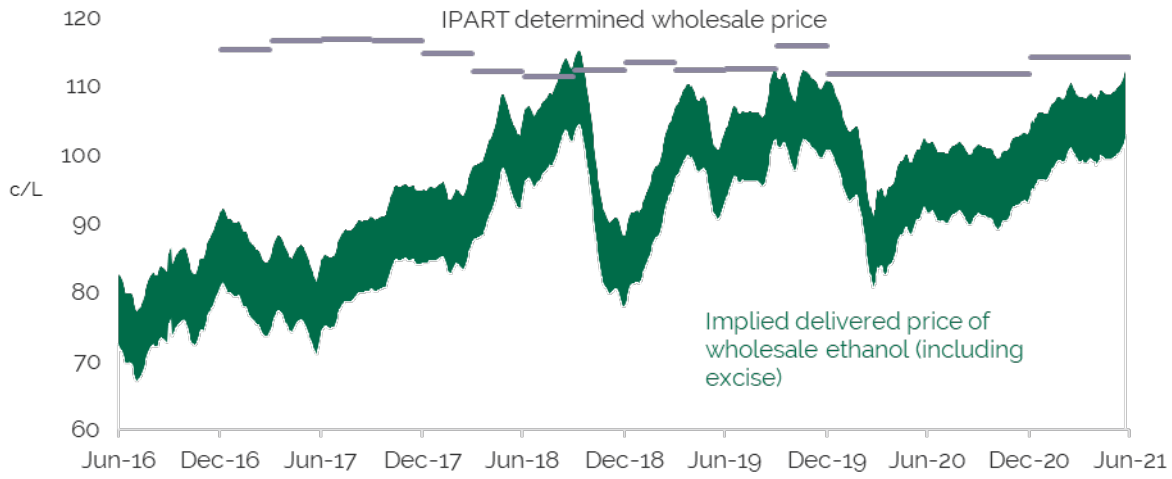
[a] Terminal gate prices are the prices at which petrol can be purchased from wholesalers in the market. The difference between the terminal gate price and the retail price includes the cost of transporting fuel, and retail operating costs such as rent, wages and utility costs. ACCC, April 2020, *Financial performance of the Australian downstream petroleum industry 2002 to 2018*, p 7.

Figure 3.5 also shows that the implied price of wholesale ethanol has remained lower than our determined price. As a result, our determined price of ethanol has not impacted the price of E10.

Figure 3.4 Difference between the U91 and E10 terminal gate prices (ex GST, 7 day rolling averages)

Source: Daily average Sydney TPGs for regular petrol and E10 from FuelTrac

Figure 3.5 Implied wholesale price based on Sydney terminal gate prices



Note: The range for the implied wholesale ethanol price assumes an ethanol blend in E10 between 9% and 10%, and includes domestic excise on ethanol, but excludes GST. It assumes fuel wholesaler margins (including the costs of blending ethanol with U91) of between 3 and 12 cents per litre of fuel, based on past estimates from ACCC.

Source: IPART calculations based on daily average Sydney terminal gate prices for U91 and E10 from Fueltrac, Australian Government, Historical excise rates, accessed 13 August 2021.

Findings

2. The wholesale price of E10 exceeded the wholesale price of U91 between March 2020 and February 2021.

3. Our determined price of ethanol was higher than our estimate of the market price in 2020. To date, it has also been higher than the market price in 2021. As a result, our determined price of ethanol has not impacted the price of E10.

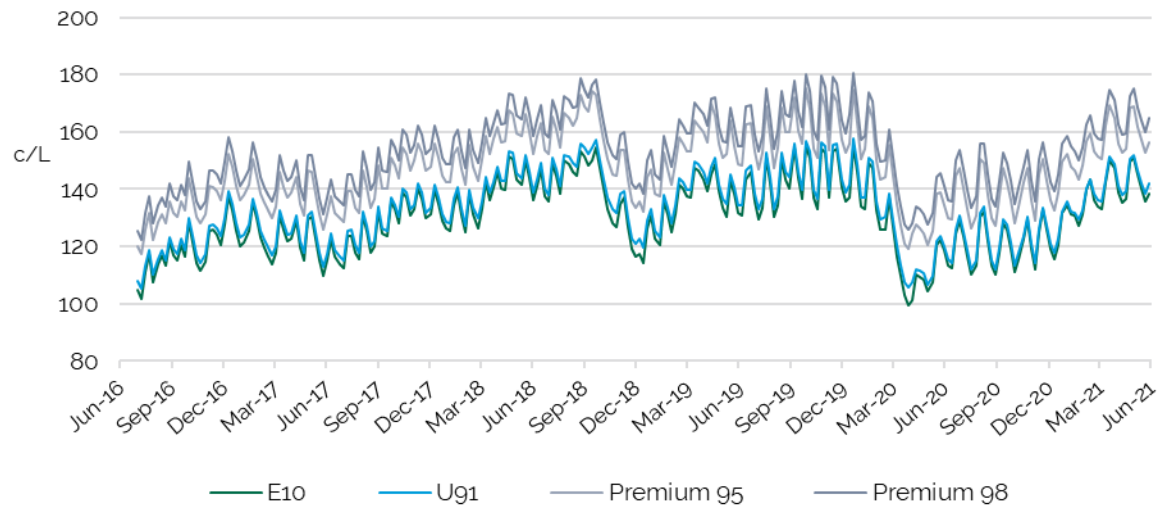
3.4 Retail prices of E10 remain lower than U91 prices

For many vehicles, the price of E10 needs to be lower than U91 for it to be economic for consumers. The NSW Fuel for Thought website states that E10 has around 3% less energy than the equivalent amount of U91 petrol, and on average, this can translate to an increase in fuel consumption of around 3%. However, E10 has a higher research octane number[b] (94) compared to U91 (91) which results in a more complete burn of the available fuel to increase engine efficiency.[22]

Figure 3.6 shows the price of E10 follows other fuels, and that E10 is the lowest priced fuel. Over 2020, E10 remained the cheapest fuel for consumers at 122.2 c/L, even though E10 wholesale prices were higher than wholesale prices of U91. This was a reduction of 12% from 138.7 c/L in 2019.

[b] Octane is a measure of petrol's resistance to igniting prematurely in the engine's combustion chamber when the car is accelerating. The higher the octane rating, the more resistant the petrol is to burning uncontrollably ('knocking' or 'pinging') before it is supposed to.

Figure 3.6 Weekly average petrol prices in NSW

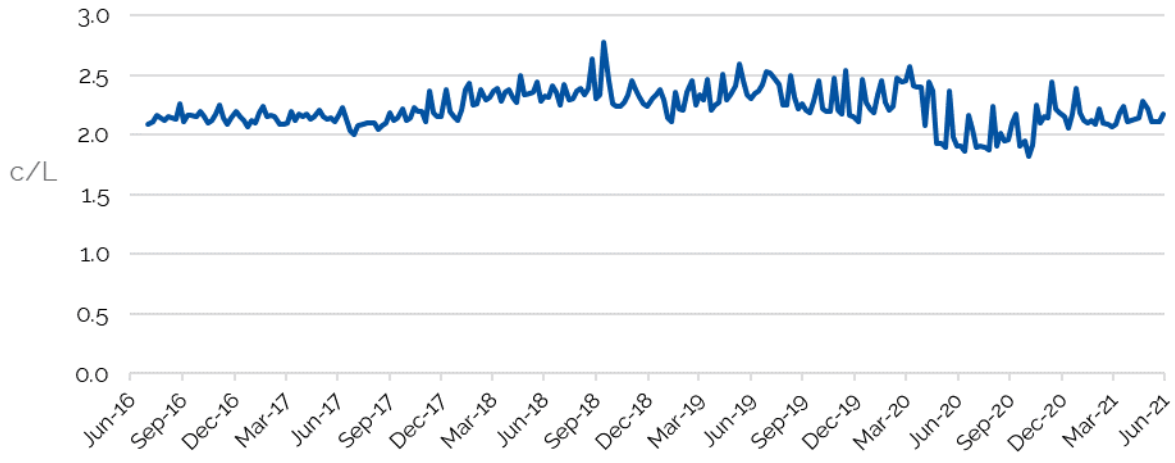


Note: We calculate average prices for the hours between 6 am and 10 pm, since very little petrol is sold outside these hours. As a check we also calculate the average prices and price difference across all 24 hours of the day and the results are very similar.

Source: NSW Government Open Data Portal, Datasets, FuelCheck, accessed August 2021.

Figure 3.7 shows that for NSW petrol stations that sell both E10 and U91, E10 is generally sold at between 2 and 2.5 cents less than U91. In 2020-21, the average price difference was 2.1 cents. During 2020, the price differential between E10 and U91 dipped below 2 cents at times, but the average discount over the calendar year remained at 2.1 cents (Figure 3.7).

Figure 3.7 Weekly difference in U91 and E10 prices in NSW

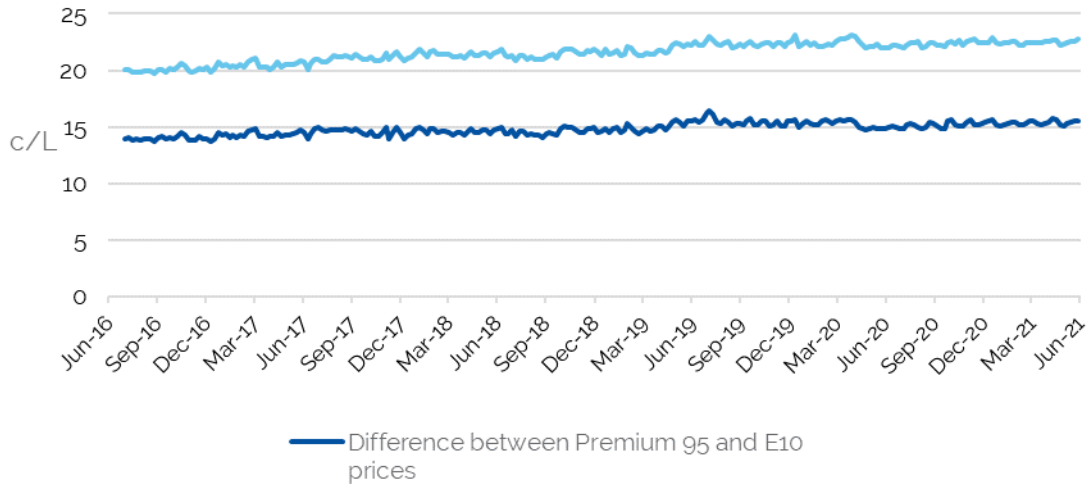


Source: NSW Government Open Data Portal, Datasets, *FuelCheck*, accessed August 2021.

Figure 3.8 shows that for premium fuels, the average price difference between these and E10 is slightly higher than 2017. In 2020-21:

- Premium 95 was 15.3 cents higher than E10
- Premium 98 was 22.4 cents higher than E10.

Figure 3.8 Weekly difference in premium and E10 prices in NSW



Source: NSW Government Open Data Portal, Datasets, *FuelCheck*, accessed August 2021.

Finding

4. The price of E10 follows the price of U91. E10 was an average of 2.1 cents lower of U91 over 2020-21.

4 How we set wholesale ethanol prices

Since IPART commenced its roles under the Biofuels Act in 2017, we have determined the wholesale price of ethanol in line with what it would cost for retailers to import it from overseas (at the "import parity price" or "IPP").

There have been mixed views on our price setting approach since it was introduced in 2017. There is one dominant producer in NSW, Manildra, and one remaining supplier in Queensland. Some fuel retailers hold the view that these producers have been able to increase wholesale prices[c] because they do not face competitive pressure in the wholesale market. Therefore, they have argued that our determined price should be lower to put downward pressure on ethanol prices.

Some stakeholders consider that we should set the wholesale prices using the import parity price, but that we should include excise costs for ethanol produced domestically, rather than for imported ethanol. This would lead to a lower determined wholesale price, which could reduce wholesale ethanol prices.

This chapter explains:

- our framework for determining our approach to setting prices
- how we calculate the cost of importing ethanol from overseas
- how our determined price compares with the prices that are required for the viability of wholesalers and retailers.

4.1 Our framework for assessing how we should set prices

In any market, the need for government intervention depends largely on the extent of competition in the market. Competition protects customers from higher prices and government intervention is not required. Intervening in the market creates a risk that the government (or regulator) will set prices too low, impacting the financial viability of producers and discouraging new entry. This can reduce the supply of a good, resulting in consumers purchasing less than they would otherwise wish to. In the longer term, less competition can also lead to higher prices.

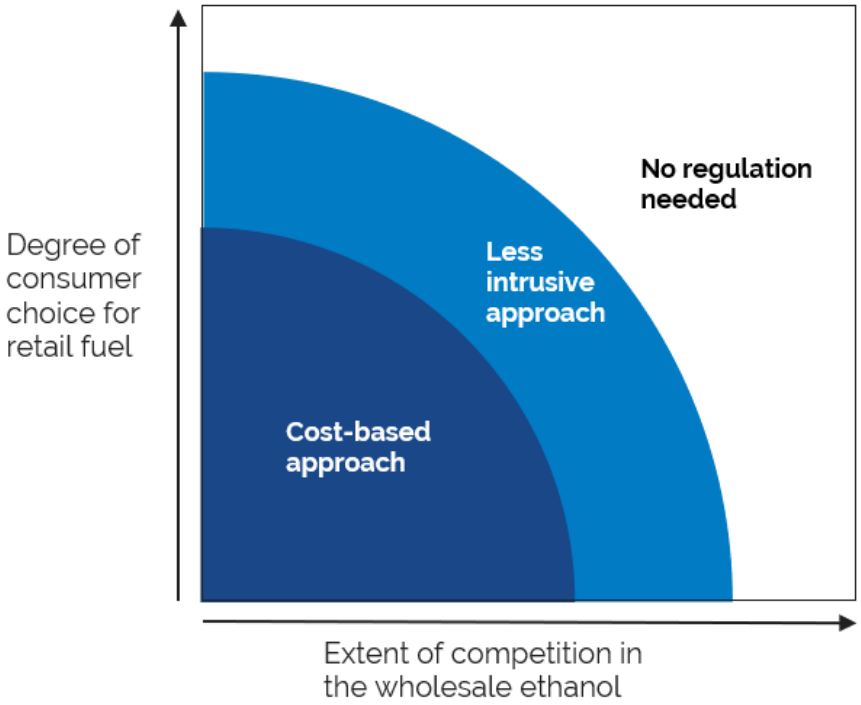
As part of our 2016 review of the wholesale market for fuel ethanol, we developed a framework to assess the need for price regulation for wholesale ethanol (Figure 4.1). The need for regulation depends on two key factors – the degree of consumer choice in retail fuels, and the extent of competition in the wholesale ethanol market

[c] Manildra has told us that its price increase in 2020 reflects increasing costs.

Under our framework:

- If there was very limited consumer choice of retail fuel (for example, if E10 was the only fuel available) **and** little or no competition in the wholesale ethanol market (for example, if there was only one producer that could supply NSW and there were high barriers to entry), our approach for recommending a maximum price would be based on the cost of a new entrant producer.
- If there was unrestricted consumer choice for retail fuel (for example, if the ethanol mandate was removed completely), there would be no need for intervention in the pricing of wholesale ethanol, even if there was little or no competition in the wholesale ethanol market. The price of substitute fuels limits the price that E10 can be sold into the market, which in turn, limits the price that wholesalers can sell wholesale ethanol into the market.
- If the wholesale ethanol market was competitive or there was a strong threat of competition with low barriers to entry, this would ensure that wholesale ethanol prices reflected the efficient costs of production regardless of the degree of consumer choice, and no intervention in the pricing of wholesale ethanol would be needed.
- In other cases, the approach for recommending a maximum wholesale price would be less intrusive than a cost-based approach, to avoid distorting the wholesale ethanol market and to encourage the development of more competition.

Figure 4.1 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.

4.2 We set prices based on a high degree of customer choice

Since we have been applying our framework, we have considered that the level of competition is within the lighter blue region where a less intrusive approach applies. This is based on our assessment that, although there is limited competition in the wholesale market, there is a high degree of consumer choice for retail fuel. However, there are some restrictions on this choice as a result of the ethanol mandate. For example, some retailers replaced their U91 bowsers with E10, reducing the choice in the market.

The current market conditions continue to support this assessment. Most petrol stations continue to offer a choice between E10, U91, and premium fuels. More customers have been taking up options other than E10. The price of U91 has remained competitive with E10, and many consumers are using the NSW Government's FuelCheck app to assist them in making cost-effective choices.

Competition in the wholesale market reduced in 2020 with the exit of United Petroleum in Queensland, which had 20% market share on the East Coast of Australia. This was driven by low fuel prices which limited the price that wholesalers could sell wholesale ethanol, reducing its profitability. However, these low fuel prices also protected consumers from excessive wholesale prices of ethanol. Therefore, so long as there is a high level of choice for consumers, decreasing competition in the wholesale market does not affect our assessment of the level of pricing intervention required.

Bioenenergy agreed with this assessment of competition, and it supports a less intrusive approach to price regulation. AIP also considers that a less intrusive regulation model remains appropriate at this time.

We discuss the level of competition in the retail and wholesale markets in detail in the following chapters.

Decision

1. Additional price constraints are not required because a high degree of choice between fuels for consumers continues to protect them from excessive wholesale ethanol prices.

4.3 We set the wholesale ethanol price in line with import costs

To date, our 'less-intrusive' approach to price regulation has been to set wholesale prices based on an estimate of the market price of importing ethanol (the "import parity price"). Submissions from Bioenergy Australia, and AIP supported continuing to use this approach.[23]

Fuel importers and wholesalers also use an import parity price to determine contract prices for petroleum, reflecting the price faced by wholesalers for fuel delivered to their terminals. Our import parity price is similar, except we calculate an annual price instead of a daily price. It is based on a 9-month average (to one month prior to the commencement of the pricing period) of weekly import parity price estimates based on the lowest cost origin for ethanol from either the US or Brazil. This reflects the upper bound for what a local purchaser would be willing to pay to a domestic ethanol producer.

This approach minimises the risk of setting the determined wholesale price too low, which could impact the financial viability of ethanol suppliers and discourage new entry. However, we agree with AIP's submission that the import parity price does not provide a sufficient price discount necessary to meet the 6% ethanol mandate (given the market conditions observed to date).[24] We discuss this further in section 4.4.2 below.

Decisions

2. IPART will continue to determine wholesale ethanol prices based on the price of importing ethanol from overseas (the "import parity price").

4.3.1 We have simplified our model of import parity prices

The import parity price includes the cost components shown in Figure 4.2:

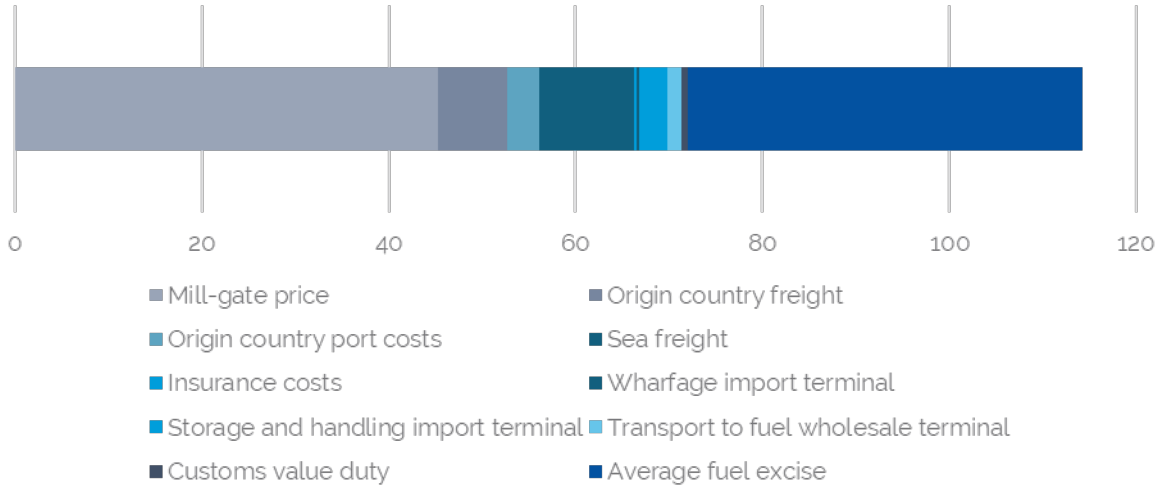
- the international market price of wholesale ethanol
- landing costs in Australia, including relevant excise tax and customs value duty on imported ethanol
- transport costs
- storage and handling costs in Australia.

The exchange rate also has a significant effect on the price.

We calculate the import parity price annually in an excel model, which is available on our website.[25] In developing this model, we had regard to simplicity, transparency and minimising regulatory and administrative costs. However, the model is still complex and costly, because there are a large number of inputs to the model that come from a range of sources. We buy some of these data inputs, which costs IPART around $15,000 each year.

Bioenergy and AIP supported continuing to use the model in its current form.[26] Some stakeholders supported updating the model more frequently, such as quarterly, or six-monthly.[27]

Figure 4.2 Components of the import parity price (2021) (c/L)



Source: IPART, Import price parity model.

We have reviewed our model of import parity prices and we have decided to:

- simplify the model by reducing the number of components that would require frequent updates
- continue to update the key cost components annually.

We will continue to update the mill gate prices and fuel excise components annually.[d] These components can change materially over time and represent around 80% of the determined price (in roughly equal shares).

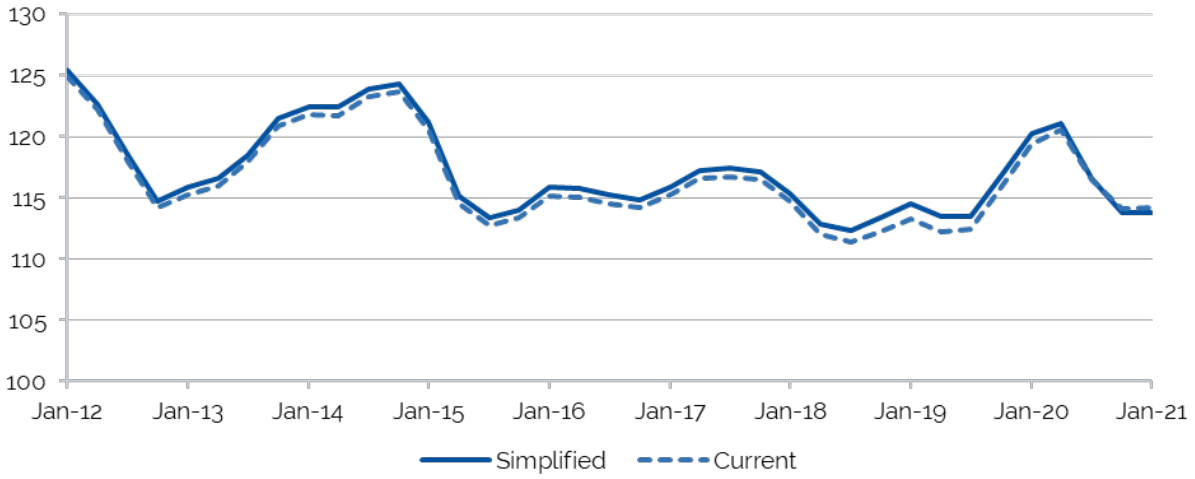
The origin country freight and sea freight costs represent 7.4% and 10% of the import parity price respectively and all other elements account for around 0.3% to 3.4%. These components do not fluctuate materially over time. Therefore, we have decided to hold them fixed for the next 3 years, using their 5-year averages. We consider that these are reasonable estimates of the long-term values of these cost components.

Figure 4.3 shows that applying this approach for the last 5 years results in negligible differences compared to our previous approach. This is because the model continues to reflect the changes in the key drivers of the import parity price. At any given point in time, the differences ranged between 0.05% and 1.14%.

Appendix A provides more details on the movements of individual cost components over time.

[d] The mill gate price is based on the 9-month weekly average.

Figure 4.3 Import parity price under the current model versus simplified model



Source: IPART, Import price parity model and IPART analysis.

We consider these decisions strike the right balance of maintaining accuracy and reducing costs, in a context of IPART's international parity price having limited impacts on the market. The negotiated wholesale ethanol prices are unlikely to exceed IPART's determined price in the foreseeable future. As explained in the next section, the import parity price has been significantly higher than local prices, largely because imported ethanol incurs around 30 c/L more excise than ethanol that is produced domestically. If import prices did fall below our determined price, they would still impact the market – fuel retailers could choose to import fuel instead of buying it locally. That is, the actual import parity price will still operate as a market-based price constraint.

As mentioned previously, no retailers have sought an exemption to meeting the ethanol mandate on the grounds that the wholesale price has exceeded IPART's determined price.

Decisions

3. IPART will simplify the import parity price model by reducing the number of cost components that require updating at each review:
   - We will to hold cost items that represent 10% or less of the import parity price constant for the next 3 years using their 5-year average.

4.4 How the import price compares with viable market prices

In determining a reasonable wholesale price for ethanol, we are required to:

- consider the price at which ethanol would need to be sold by wholesalers for the **wholesale market** for ethanol and petrol-ethanol blend to be economically viable
- consider the price at which ethanol would need to be sold by wholesalers for the **retail market** for petrol-ethanol blend to be economically viable
- take into account the minimum biofuel requirements and disregard any exemptions from those requirements.[28]

For the wholesale market for ethanol to be viable, the wholesale price of ethanol needs to cover the delivered costs of producing ethanol over the medium term.

For the retail market to be viable, E10 needs to be sold at a discount to U91. For a discount to be cost-reflective, the wholesale price of ethanol would need to be lower than the U91 wholesale price (measured by the terminal gate price).[e]

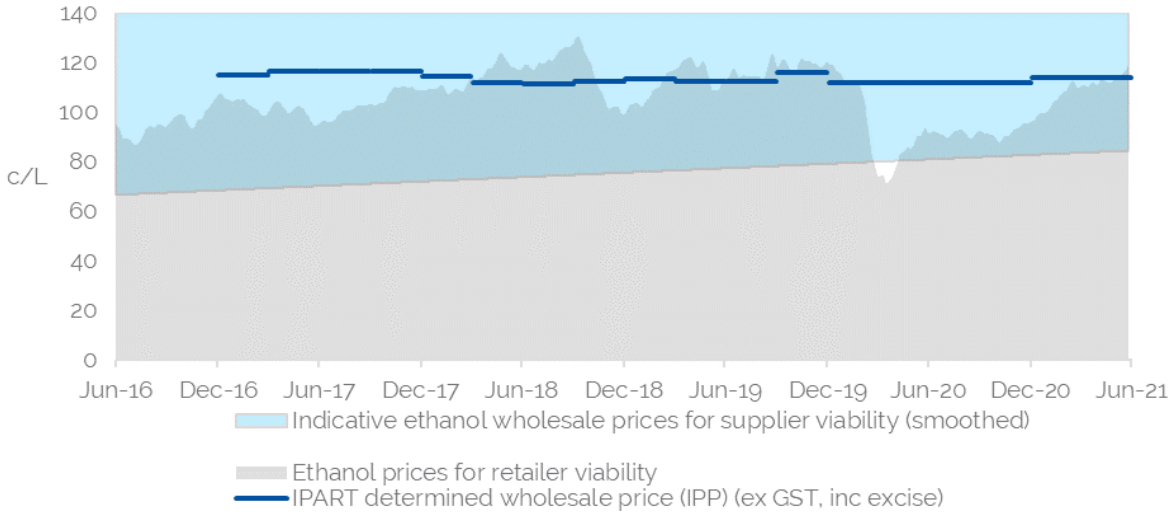
Indicative prices are shown in Figure 4.4. It shows that:

- The indicative delivered costs of ethanol (the minimum wholesale price for suppliers to be viable) is higher than it was in 2016. This is based on the costs for a new entrant producer, rather than established producers. Wholesale prices need to be **higher** than the costs of production for the wholesale market to be viable.
- The wholesale price of U91 fell significantly over 2020 (but has since recovered). The wholesale price of ethanol needs to be **lower** than this over the medium and longer term for the retail market to be viable.

More details on these prices are included in the next sections.

[e] Where wholesale ethanol prices exceed the price of U91 terminal gate price, retailers may face lower margins on fuel sales. Alternatively, customers may pay more for alternative fuels than they otherwise would.

Figure 4.4 Import price versus viable market prices (excluding GST, including excise)



Source: IPART calculations based on daily average Sydney terminal gate prices for U91 and E10 from Fueltrac, AECOM, Efficient Cost of New Entrant Ethanol Production - Spreadsheet Model, AWB, Daily grain prices, Australian Government, Historical excise rates, accessed 16 April 2021

In determining the wholesale ethanol price, we considered whether we should set it equal to either the wholesale costs of ethanol, or a price that could increase demand for E10 while maintaining retailer viability. We have **not** used these more intrusive price setting approaches. Under our framework, our assessment that competition is sufficient to protect customers from abuse of monopoly power means that the costs associated with these approaches would outweigh the benefits. AIP supported this assessment.[29]

4.4.2 Delivered cost of ethanol

In 2016, we engaged AECOM to consider the delivered costs of ethanol production for a new entrant. It found that the cost of producing ethanol varies significantly, depending on the feedstock used in production (for example, molasses, wheat or sorghum), and production size. It found that the lowest cost method of production in NSW was using wheat starch in an integrated facility that primarily produces gluten. This is the method used by Manildra, which is the largest producer in NSW.[30]

AECOM estimated that the minimum efficient costs of a new entrant producer with an integrated wheat starch facility was 67 c/L in 2016, including excise and offsets from the revenue that can be earned from the production of co-products, such as dried distillers grain solids (DDGS).[31]

We have updated AECOM's efficient ethanol production cost to provide indicative costs of production for a new entrant producer with an integrated wheat facility in 2021 (as shown Figure 4.4). It shows that the efficient costs are likely to have increased by around 25% to around 80 c/L, which mainly reflects the increase in the excise on domestic ethanol. The indicative current efficient production cost is based on updated cost components:

- excise on domestic ethanol: increased from 2.6 c/L to around 14 c/L
- feedstock costs: increased from $200 to $235 per tonne, based on the average daily wheat price (APW1) as at April 2020 across different storage locations in Southern NSW[32]
- cost of capital: we used the same industry specific parameters as in 2016 (i.e. equity beta of 1 and gearing of 25%), but updated the market-based parameters to 31 January 2021
- other costs: we used the CPI to adjust other costs, such as other production costs, maintenance and other indirect costs.[f]

Manildra uses waste starch by-products from its flour milling activities, and therefore does not need to purchase feedstock on the open market.[33] This would result in lower costs compared to those outlined above, as the starch can be transferred to the ethanol production facility at cost. However, the scope of AECOM's study did not include a review of the cost of gluten manufacturing.[34]

As shown in Figure 4.4, IPART's international import price is significantly higher than the indicative costs of production for a new entrant producer. This is mainly because a much lower rate of excise applies to domestically produced ethanol (Box 4.1).

Since we have been determining prices, there have been some stakeholders who consider that our international parity price should be set using excise costs for ethanol produced domestically, rather than for imported ethanol. This would produce a determined price that is more similar to the new entrant costs of production. This price is lower than the market price of importing ethanol, and so would provide an additional constraint on wholesale prices.

As explained in previous sections, our view has been that this more intrusive price regulation is not needed to protect consumers and would pose risks to the market. Including the full excise and customs duties means that the international parity price reflects the commercial realities faced by potential ethanol importers. It allows local competition in ethanol production to continue to develop and deliver increasingly competitive prices over time.

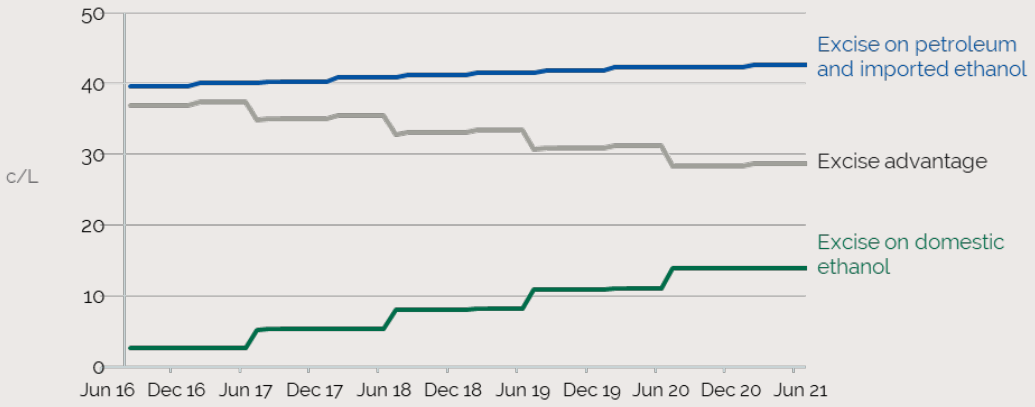
[f] We have not updated the revenue that can be earned from the production of co-products. We have included it in the 2021 costs at the same rate as in 2016 (at around 13 c/L).

Box 4.1 Excise applied to fuel

Our import parity price includes the customs fuel import duty that applies to ethanol imported to Australia. The fuel excise tax for imported ethanol is currently 43 c/L. This excise increases bi-annually in February and August each year in line with CPI.

Ethanol imported from Brazil also incurs a 4% import duty, levied on the FOB price of the ethanol.[a] Ethanol imported from the US is not subject to this duty.

In contrast, the domestic excise on ethanol is only around 14 cents (up from around 2.6 c/L in 2016-17). This means that domestically produced ethanol receives an excise advantage of 29 c/L compared with petroleum and imported ethanol (shown below).



a. Customs Tariff Act 1995, Schedule 3 – Item 2207.20.10, DSC rates.

Source: Excise Tariff Act 1921, section 6H, Australian Government Taxation Office, Excise duty rates for fuel and petroleum products, accessed 13 September 2021.

Findings

5. The delivered cost of wholesale ethanol (including excise) for a new entrant is likely to be around 25% higher in 2021 compared to 2016. This largely reflects the increase in domestic excise from 2.6 c/L to 14 c/L.

Decisions

4. We will continue to include the excise rates for imported fuel in our import parity price calculation.

4.4.3 Wholesale price of U91

E10 is U91 blended with 9% to 10% wholesale ethanol. For E10 to be sold at a discount to U91, and for this discount to reflect costs, the wholesale ethanol price needs to be cheaper than the U91 wholesale price (the terminal gate price) minus the wholesale margin on E10.

As discussed in Chapter 3, over 2020 the wholesale price of E10 was higher than the wholesale price of U91 for the first time since we began monitoring prices. This meant that a discount on E10 was not cost reflective. AIP submitted that as a result, retailers have lost significant margin on E10 sales.[35]

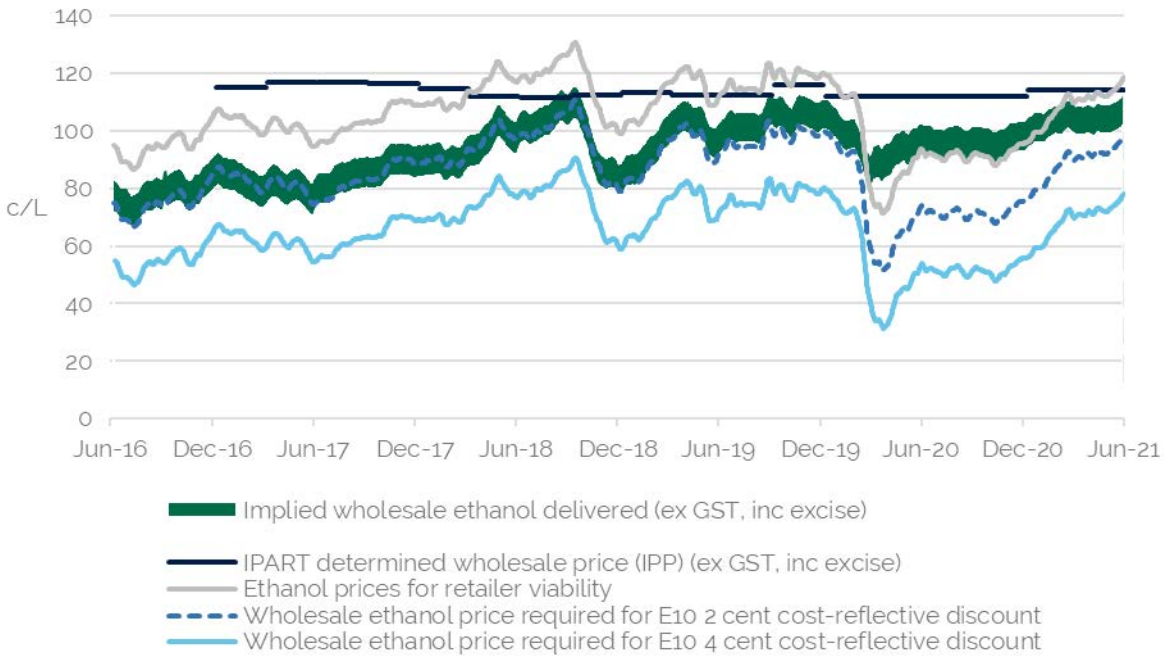
Given these outcomes, other stakeholders have suggested that IPART should consider capping the determined ethanol price at the lower of the import parity price and the U91 wholesale price (minus the wholesale margin on E10). Figure 4.5 shows that this would have meant a determined price of around 90 c/L in 2020,[g] compared to our import parity price of 111.7 c/L. This is on the low end of the range of the implied price wholesale ethanol prices for this period.

Chapter 3 showed that E10 has been consistently sold at a 2% discount to U91 since we have been determining ethanol prices. Figure 4.5 shows the wholesale prices that would allow this 2% discount to be cost reflective. It shows that the 2% discount was reasonably cost reflective until 2020, and it was almost cost reflective again at June 2021. However, for this discount to have remained cost reflective in the interim, wholesale ethanol prices would have needed to be an average of 25% lower between April and December.

With a 2% discount, E10 has accounted for around a quarter of all fuel sales in recent years, falling well short of the ethanol mandate. To increase the demand for E10, it would need to be discounted by more than 2% relative to the U91 price. Figure 4.5 shows that for E10 to be sold at a cost-reflective 4 cent discount to U91 in 2020, the wholesale price of ethanol would have needed to be around 45% lower between April and December in 2020.

[g] Assuming a 3 cent wholesale margin on E10.

Figure 4.5 Implied wholesale price versus wholesale prices that would support cost reflective discounts



Note: The range for the implied wholesale ethanol price assumes an ethanol blend in E10 between 9% and 10%, and includes domestic excise on ethanol, but excludes GST. It assumes fuel wholesaler margins (including the costs of blending ethanol with U91) of between 3 and 12 cents per litre of fuel, based on past estimates from ACCC.

Source: IPART calculations based on daily average Sydney terminal gate prices for U91 and E10 from Fueltrac.

Even with a much higher discount, it is unlikely that the ethanol mandate would be met. Premium fuels now make up more than 40% of fuel sales in NSW. Consumers buying these fuels are already paying around 15 to 25 cents more than customers buying E10. They are likely to be less price sensitive than other consumers.

In addition, some consumers would avoid E10 regardless of any price differential, because they are concerned about adverse impacts to their engines. Most petrol cars sold in Australia since 1986 were designed to run on U91, and these are compatible with E10. However, neither E10 nor U91 should be used in vehicles where the manufacturer recommends premium unleaded petrol.[36]

In its review of the Biofuels Act completed last year, the NSW Government recommended an education campaign to help overcome consumer aversion to or uncertainty about E10.[37]

5 Consumer choice in the retail market

As explained in previous chapters, our price setting approach depends on the level of competition in the wholesale and retail markets.

To assess the level of competition in the market we consider factors that affect consumers' choice of which fuel to buy, as well as their ability to identify and access these choices. These include:

- whether there is a choice of fuels available at petrol stations
- how the prices for different fuel types compare
- the ease of access to information about prices and the locations of fuel types sold, which assists consumers to make informed choices in the market.

Since 2017 we have found that consumers generally have a relatively high degree of choice between U91 and E10. We also found the use of apps and websites which provide prices of available fuels at each service station (in close-to-real-time) helps consumers make informed decisions.

Our assessment of these factors based on the latest available information continues to show the retail market for fuel is competitive. This continues to support a less intrusive approach to price regulation of the wholesale ethanol market.

5.1 Most petrol stations offer a choice of fuels

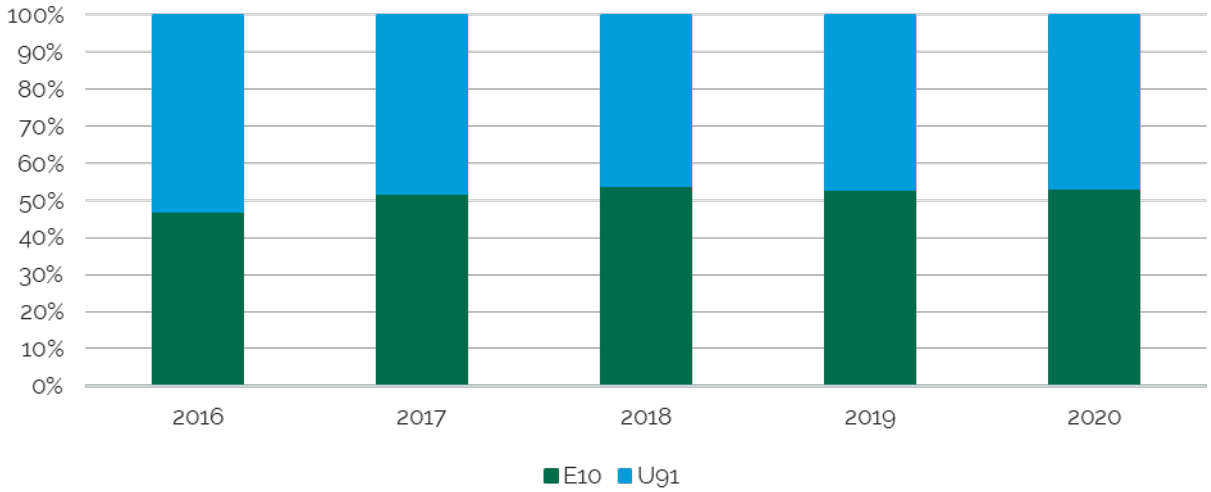
Under the Biofuels Act, fuel retailers must meet E10 availability requirements. These include ensuring that a petrol-ethanol blend is made available at each service station and that a petrol-ethanol blend is made as accessible to customers as any other type of petrol.[38]

Making E10 accessible means that:

- E10 nozzles must be available across the forecourts of service stations, in comparable numbers to the other most available petrol being offered[39]
- reasonable steps must be taken to market E10, including advertising the price of E10 on their main price board along with other fuel prices.[40]

87% of fuel stations now offer E10, and there are slightly more nozzles across NSW dispensing E10 compared to U91. Of all E10 and U91 nozzles, 53% dispense E10. This has remained steady over the past 3 years (Figure 5.1).[41]

Figure 5.1 Nozzles dispensing E10 and U91 (NSW)

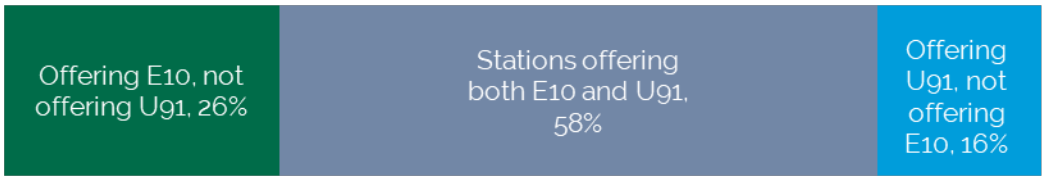


Note: 2016 data is as at March quarter, 2017 is at September quarter, 2018 is at June quarter, 2019 data is at September quarter and 2020 is at December quarter.

Source: Information provided by NSW Fair Trading. Nozzle data relates to stations operated by Volume Fuel Retailers.

With the slight increase in the share of E10 nozzles since 2016, there have been slightly fewer petrol stations offering U91. However, around 76% of stations continue to sell U91, with 58% selling both E10 and U91 (Figure 5.2). This has remained largely unchanged over the last 5 years.[42]

Figure 5.2 Availability of different fuel types by petrol station – March 2021



Source: Data from NSW Fair Trading, received 5 March 2021.

We have previously found that of the stations that do not sell U91, 90% are located within 5 minutes' drive of one that does. 99.7% of petrol stations that do not sell E10 are located within a 10 minutes' drive of one that does.[43]

Websites and apps can relatively easy for consumers to purchase their fuel of choice even when every type of fuel is not available at every petrol station. They provide information on where each type of fuel is sold and their prices.

As at March 2021, the cumulative number of visits to the NSW FuelCheck website was 16 million, while the FuelCheck app has been downloaded 1.4 million times.[44]

Because there is wide availability and information about U91 as a substitute for E10, the price of U91 will limit the price of E10 – otherwise customers would switch fuels. In turn, this limits the price that wholesalers can sell wholesale ethanol.

5.2 E10 is the cheapest fuel in the retail market

Differences in price between types of fuel affects consumers' choice between the different fuel types. The ACAPMA, 2019 Monitor of Fuel Consumer Attitudes found that 56% of consumers indicate that the price of fuel is the most important driver of their decision about where to purchase fuel.[45]

As explained in Chapter 3, for E10 to be competitive, it needs to be priced at a discount to U91 because it has a lower energy content. This means that customers must buy slightly more fuel to travel the same distance. Over 2020, this discount has been maintained at around 2.1 cents or 1.7% compared to U91 across all stations.

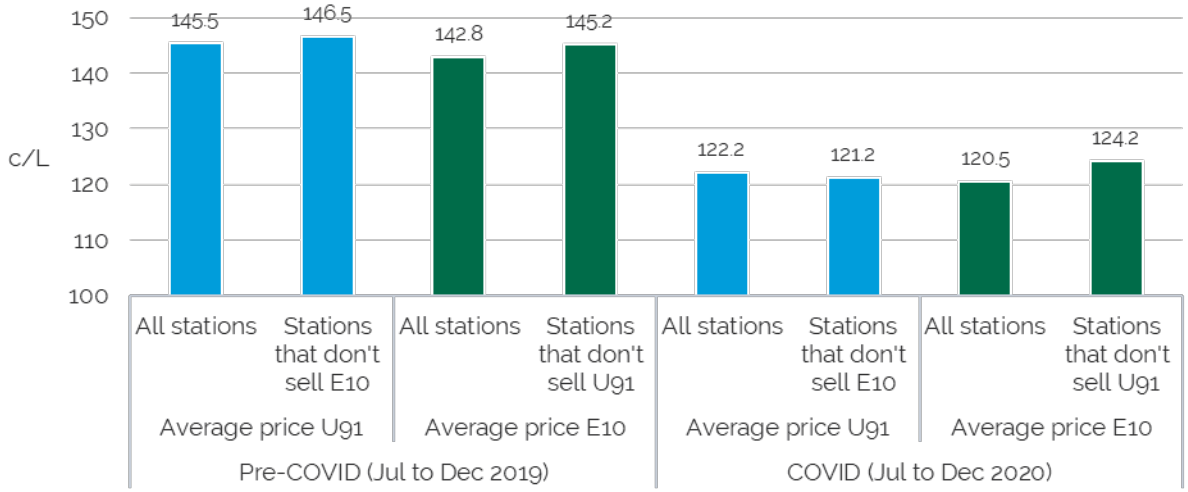
However, this varied according to which fuels were sold at a petrol station. Figure 5.3 shows that:

- in 2019, E10 prices at fuel stations that did not sell U91 were only slightly lower than the average price of U91 across all stations (0.3 cents)
- in 2020, E10 prices at fuel stations that did not sell U91 were **higher** than the average price of U91 across all stations (2.2 cents).

Figure 5.3 also shows that for the last six months of 2019 (pre-COVID) and 2020 (during COVID), average fuel prices were slightly higher at stations that do not sell both E10 and U91. The exception was for U91 during the pandemic, when the average U91 prices were slightly lower at stations that did not sell E10.

The relative prices in 2020 are likely to reflect the higher wholesale prices of U91 compared to E10.

Figure 5.3 Average NSW fuel prices by fuel types sold



Source: NSW Government Open Data Portal, Datasets, FuelCheck, accessed August 2021.

In undertaking our analysis, we also considered differences in U91 prices between states. Differences in U91 retail prices, wholesale prices, and gross retail margins are included in Appendix B for information. These comparisons are not provided by the ACCC in its fuel monitoring reports. Since 1 July 2014, the ACCC has used E10 prices for Sydney in its comparisons with U91 across the 5 largest cities.[46]

Findings

6. Consumers continue to have an effective choice of fuel with widespread availability of E10, U91 and premium unleaded fuels. 87% of fuel stations sell E10, and 76% sell U91. 58% of stations sell both E10 and U91.

7. Customer choice between fuels is supported by a range of comparison websites and apps including the NSW Government's FuelCheck service.

6 Competition in the wholesale ethanol market

The ethanol fuel production industry is highly concentrated, with Manildra supplying almost all retailers in NSW. This chapter explains the conditions in the wholesale market that result in a highly concentrated ethanol production industry in NSW.

In particular, low fuel prices over 2020 reduced the profitability of ethanol because they limit the price at which ethanol can be sold into the market. However, with improved conditions, there is the potential for new entry, which poses a continuing threat of competition.

6.1 Market concentration is high

Prior to 2020, there were 3 ethanol producers on the East Coast of Australia, with stable market shares over the past 5 years:

- Manildra (NSW) (60%)
- Wilmar Sugar (Queensland) (20%)
- United Petroleum (Queensland) (20%).[47]

United Petroleum exited the market in June 2020.[48]

The small number of producers reflects that locally produced ethanol has relatively high production costs, and which are higher than the costs of producing U91 and premium fuels - even with discounts to excise and subsidies.[49]

Ethanol needs to be produced at large volumes to return a profit. The local manufacturers produce ethanol alongside other activities, such as food manufacturing. These participants produce ethanol as a means of creating revenue from products left over from other processes. This contributes to the industry's high market share concentration as operators with related processing operations have a strong competitive advantage in ethanol production. This is expected to continue as industry assistance for ethanol production is reduced.

6.2 Reduced profitability has further reduced competition

Over the past 5 years revenue in ethanol production has fluctuated widely with global oil prices. Feedstock costs and industry wages have increased, along with the excise payable on locally produced ethanol.

Feedstock is the industry's largest cost. Rising feedstock costs reflect the upward trend in the domestic price of wheat and sugar along with shortages of sorghum after the drought in Queensland. The cost of wheat starch used in ethanol production has been affected by production shortages in the eastern states.

The price of substitute fuels limits the price that E10 can be sold into the market, placing a constraint on the price of wholesale ethanol. The slump in global crude oil prices during 2020 meant it was more difficult for ethanol producers to recover their costs of production.[50]

All 3 producers temporarily ceased production of ethanol fuel at some stage during early 2020. Local refiners were encouraged to divert ethanol production away from fuel to ethanol-based hand sanitisers and disinfectants in the response to COVID-19. However, after reopening in April 2020[h], United Petroleum's Dalby Bio-Refinery has remained closed since June 2020.[51] It was not a significant operator in the NSW wholesale ethanol market. It largely supplied E10 to United Petroleum's vertically integrated chain of retail petrol stations.[52]

It is expected that the industry's performance has recovered during 2020-21 as global crude oil prices have trended upwards.[53] Our understanding is that the Dalby production facilities have not been disassembled and so production could potentially be restarted if market conditions and prices continue to improve.

Findings

8. Low fuel prices over 2020 have reduced the profitability of ethanol suppliers.

9. United Petroleum closed its Dalby Bio-Refinery in June 2020. There are now only 2 ethanol producers on the East Coast of Australia, down from 3.

6.3 Further new entry is unlikely in the short term

The existing ethanol producers are currently operating with substantial excess production capacity. This may discourage the proposed entry of several new competitors in the short-term.[54]

There is one potential new entrant in the proposed Ethtec Biorefinery pilot plant in Hunter region in NSW. It is possible that this plant may develop into an industry competitor over the next 5 years.[55]

There are several other major export-orientated developments that have been in the planning stage for some time and are unlikely to proceed over the next 5 years, due to the industry's current excess production capacity. This includes an ethanol production plant in North Queensland (Pentland Bioenergy Project), and another facility in Deniliquin in NSW, which is delayed due to issues with funding.[56]

Biofuels submitted that over the longer term, "the level of competition is likely to be affected by global trends towards renewable and biofuels, significant innovations in technology and feedstock, global future fuel strategies of oil majors moving towards renewable and biofuels, and the international aviation and marine emission reduction targets, which can only be achieved through sustainable fuels."[57] We agree that an increase in demand for ethanol in response to these factors could lead to more participants in the market.

[h] Due to shortages of grain and sorghum feedstocks during the drought in Queensland, United Petroleum closed its Dalby Bio-Refinery temporarily between February 2020 to late April 2020.

Findings

10. It is unlikely that new suppliers will enter the wholesale market in the short term.

Appendices

A Changes in import parity price cost components

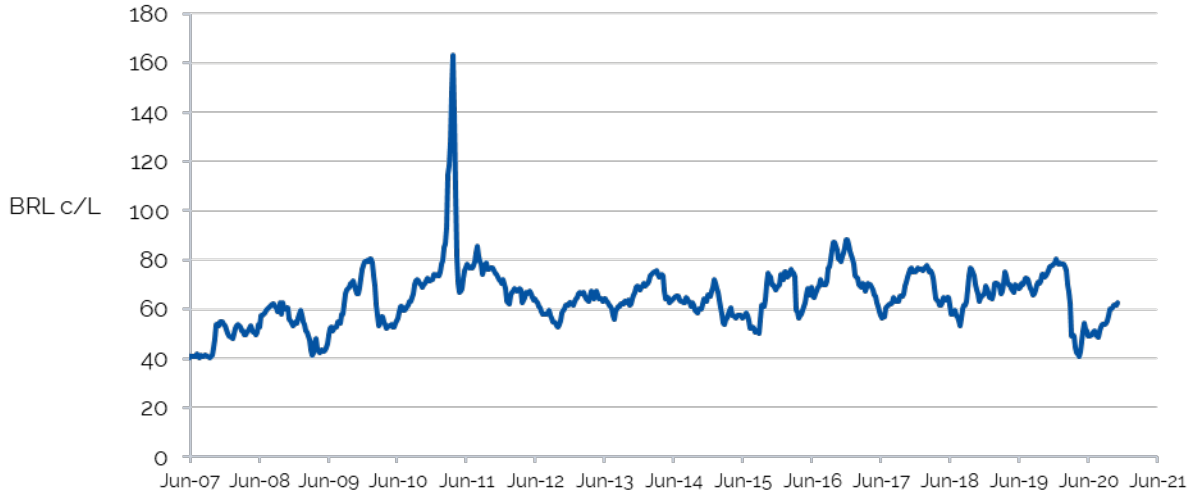
As discussed in Chapter 4, we have decided to simplify the import price parity model by reducing the number of cost components that will require annual updates. Our analysis showed that this approach results in negligible differences compared to the previous approach. This is because the model will continue to reflect the changes in the key drivers of price changes, including the local mill gate prices (Figure A.1 and Figure A.2). We use the lower of the US and Brazilian mill gate prices after they have been converted to Australian dollars to calculate the import parity price.

Table A.1 shows that the other import parity price cost components such as freight, port and sea freight costs do not tend to change materially from year to year. Except for the sea freight costs in 2021, there has not been a significant departure from their 5-year averages.

Figure A.1 US ethanol mill gate prices

Source: IPP model. The data are sourced from US Department of Agriculture (USDA) national daily ethanol report.

Figure A.2 Brazilian ethanol mill gate prices



Source: IPP model. The data are sourced from University of Sao Paulo College of Agriculture (ESALQ) ethanol price index.

Table A.1 Other components of the current Import Parity Price model

IPP component	2017	2018	2019	2020	2021	5-year average
Brazil						
Freight (BRL Cent per litre)	10.00	10.00	11.00	11.00	11.00	10.60
Port (BRL Cent per litre)	10.00	10.00	10.00	10.00	15.00	11.00
Sea freight (USc per litre)	6.91	6.87	6.87	6.87	7.49	7.00
Customs value duty	4%	4%	4%	4%	4%	4%
US						
Freight (USc per litre)	5.53	5.61	6.13	6.40	06.63	6.06
Port (USc per litre)	2.42	2.50	2.49	2.55	2.42	2.48
Sea freight (USc per litre)	7.00	6.39	6.21	7.03	7.94	6.91
Customs value duty	0%	0%	0%	0%	0%	0%
Australia						
Port (AUc per litre)	0.20	0.20	0.21	0.21	0.21	0.21

Note: This table was revised on 1 March 2022 to correct for an error in port costs. Please see Appendix C for more details.

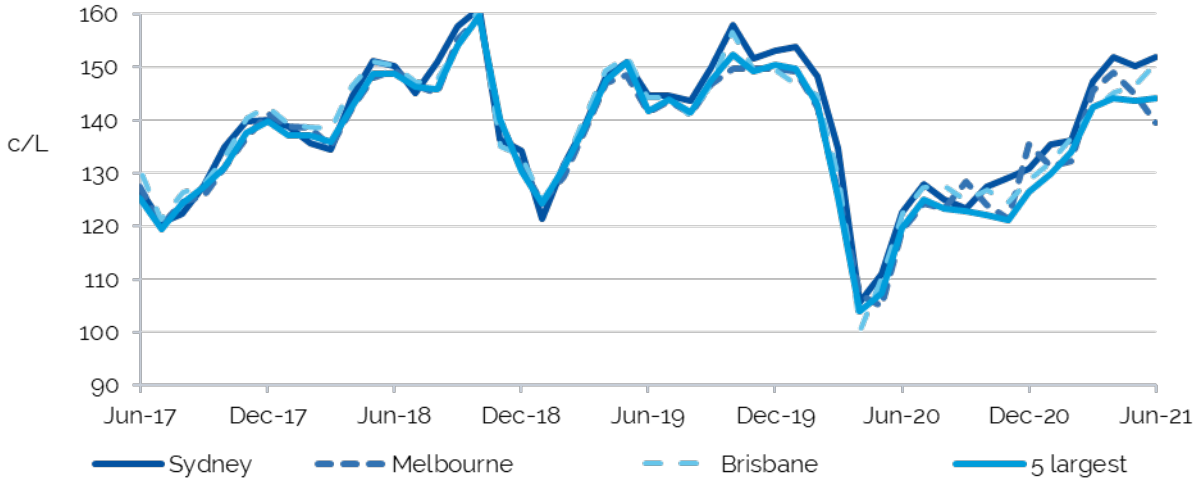
Source: IPART, Import price parity model.

B U91 prices and gross profit margins – Sydney compared to other cities

B.1 Sydney has the highest U91 retail prices

Figure B.1 compares monthly U91 prices for Sydney, Melbourne, Brisbane and the average of the 5 largest cities (Adelaide, Brisbane, Melbourne, Perth and Sydney). It shows that the retail prices follow a similar price cycle and are generally close across the capital cities. However, Sydney prices have been higher over 2019-20 and 2020-21.

Figure B.1 Monthly average retail prices for U91 petrol

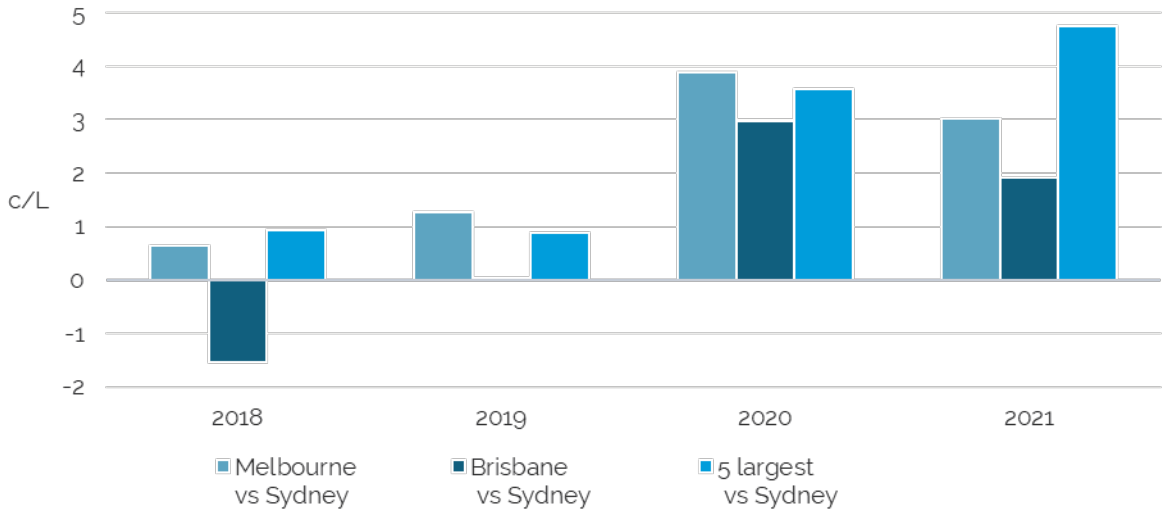


Note: 5 largest cities include Adelaide, Brisbane, Melbourne, Perth and Sydney.

Source: IPART analysis based on data from FuelTrac

Figure B.2 shows the average annual U91 price difference between Sydney and Melbourne, Sydney and Brisbane, and Sydney and the largest 5 cities for the past 4 financial years. A positive difference means that the Sydney price is higher than its comparator, and vice versa. It shows that the price difference between Sydney and the average of the 5 cities has increased from less than 1 cent higher, to almost 5 cents higher in 2020-2021. It is not clear what is driving these differences. We note that U91 prices are higher in Sydney compared to Brisbane (which also has an ethanol mandate) although the difference is smaller than Melbourne and all cities combined.

Figure B.2 Average annual U91 retail price differences by financial year



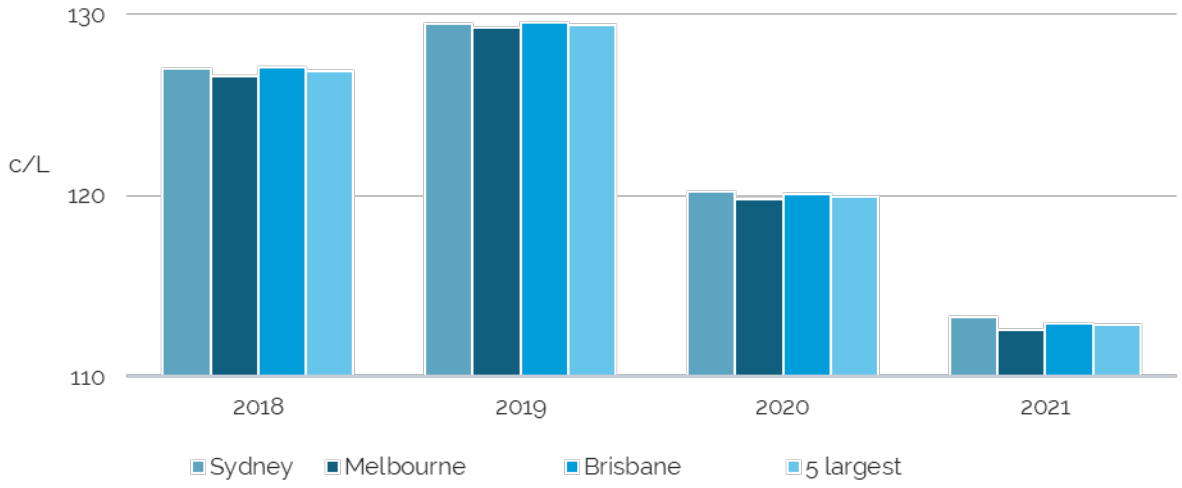
Note: We calculated the difference by subtracting the Sydney price from the Melbourne price etc. Positive difference means that the Sydney price is higher than its comparator, and vice versa. 5 largest cities include Adelaide, Brisbane, Melbourne, Perth and Sydney.

Source: IPART analysis based on data from FuelTrac

B.2 TGPs across the capital cities are close

Figure B.3 compares the annual average Terminal Gate Prices (TGPs) for U91 petrol for Sydney, Melbourne, Brisbane and the average of the 5 largest cities. This shows there is little variation between the TGP prices across the capital cities.

Figure B.3 Annual average TGPs for U91 by financial year



Note: 5 largest cities include Adelaide, Brisbane, Melbourne, Perth and Sydney.

Source: IPART analysis based on data from FuelTrac

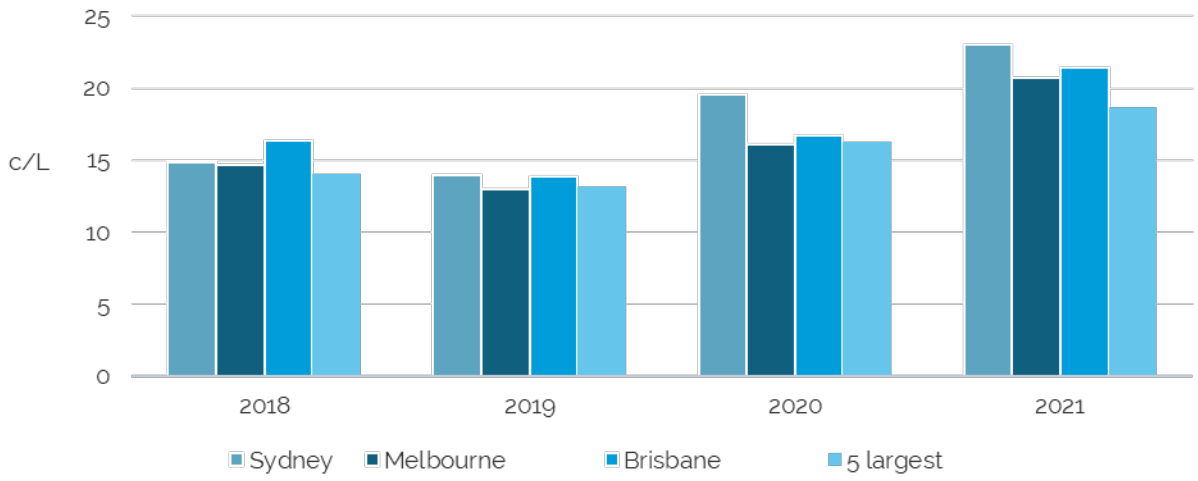
B.3 The margin between the TGP and retail prices for U91 in Sydney is higher than other capital cities

The difference between the TGP (which is an indicator of wholesale prices) and the retail petrol price is known as the gross indicative retail differences or GIRDs. GIRDs are a broad indicator of gross retail margins, made up of both a net profit and retail operating cost component.

Figure B.4 compares average annual GIRDs for U91, in Sydney, Melbourne, Brisbane and the average of the 5 largest cities. It shows that over 2019-20 and 2020-21, GIRDs in Sydney have been significantly higher than other cities. Brisbane has the next highest GIRD, but it is much closer to prices in other cities.

Due to the nature of the petroleum industry, where companies generally do not measure profits by individual product or service, and do not allocate costs to individual products or services, it is difficult to draw conclusions on what is driving the differences in GIRDs across the 5 largest capital cities.

Figure B.4 Average annual GIRDs on U91 by financial year



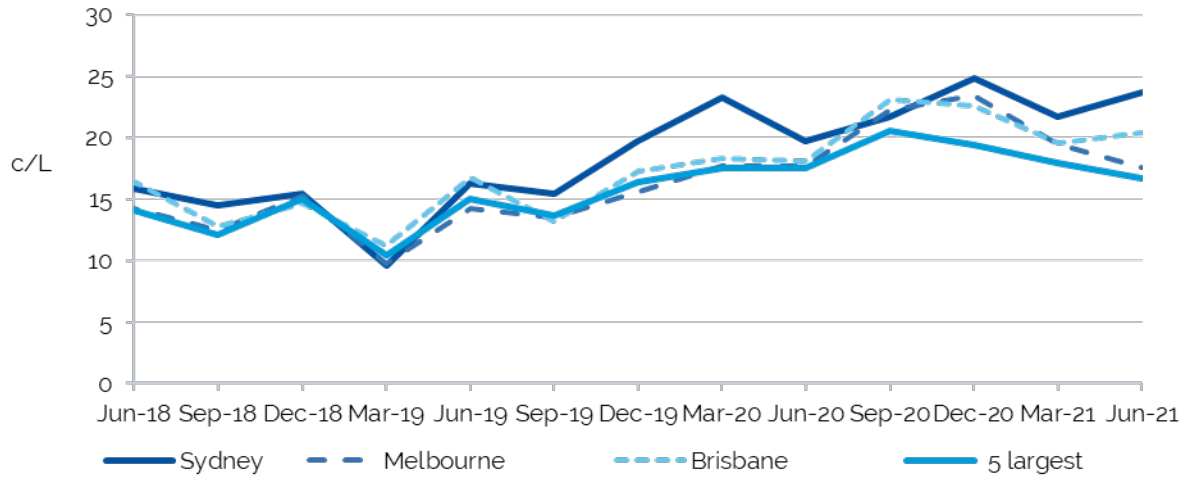
Note: 5 largest cities include Adelaide, Brisbane, Melbourne, Perth and Sydney.

Source: IPART analysis based on data from FuelTrac

B.4 GIRDs have been increasing over time

In December 2020, the ACCC has reported GIRDs increased to their highest on record in both nominal and real terms. Previously, the ACCC analysed financial data provided by petrol companies on retail gross profits (i.e. retail operating costs and net profits) from 2005-06 to 2017-18 to understand reasons behind higher GIRDs from 2014-15 onwards. It found that higher GIRDs were the result of increases in both operating costs and profits.[58] Figure B.5 shows the upward trend in the quarterly average GIRDs since June 2018 quarter.

Figure B.5 Quarterly average GIRDs on U91



Note: 5 largest cities include Adelaide, Brisbane, Melbourne, Perth and Sydney.

Source: IPART analysis based on data from FuelTrac

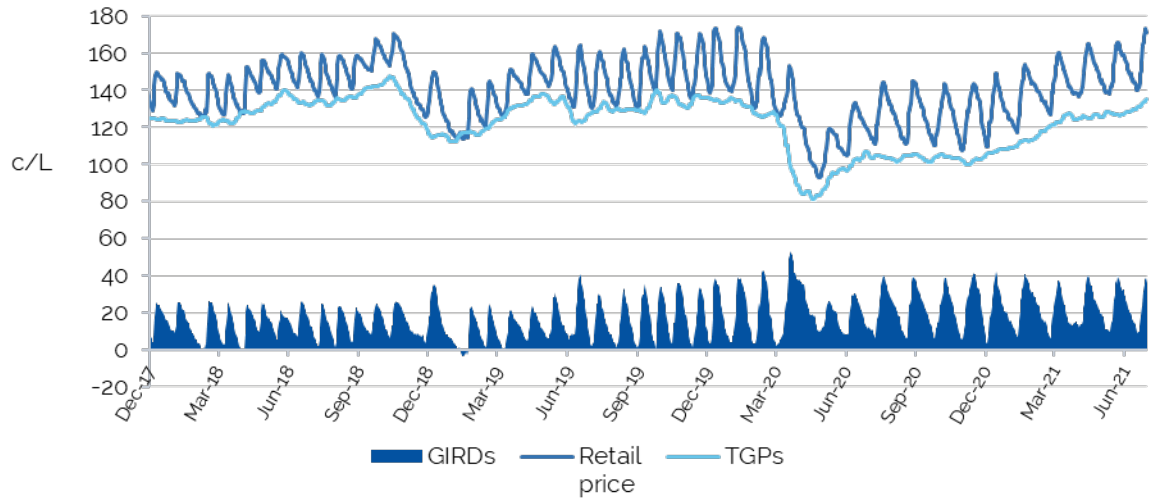
B.5 GIRDs increase when the TGPs decrease

Past analysis by the ACCC has found GIRDs are influenced by large changes in TGPs over a short period of time. When TGPs increase by large amounts in a short period, lags between changes in TGPs and changes in retail prices often have the effect of reducing GIRDs in the short term. Conversely when TGPs decrease by large amounts in a short period – which occurred in March 2020 – these lags have the effect of increasing GIRDs.[59]

In March 2020, at the height of the COVID-19 pandemic, in Sydney, the GIRDs peaked at just below 25 cents (Figure B.6). The lags in March and June quarters 2020 are likely to have been exacerbated by the substantial reduction in demand arising from COVID-19 restrictions, which will have further increased the fuel turnover time in many locations.[60]

Petrol retailing is a high-volume low-margin business with many fixed costs (such as rent and branding). This means when sales volumes decline, the cost per unit of petrol will increase. As a result, in order to offset reduced revenue from losses in sales, some retailers may not be passing on the full decrease in TGPs to retail prices.[61]

Figure B.6 Daily average U91 retail, TGPs and GIRDs in Sydney

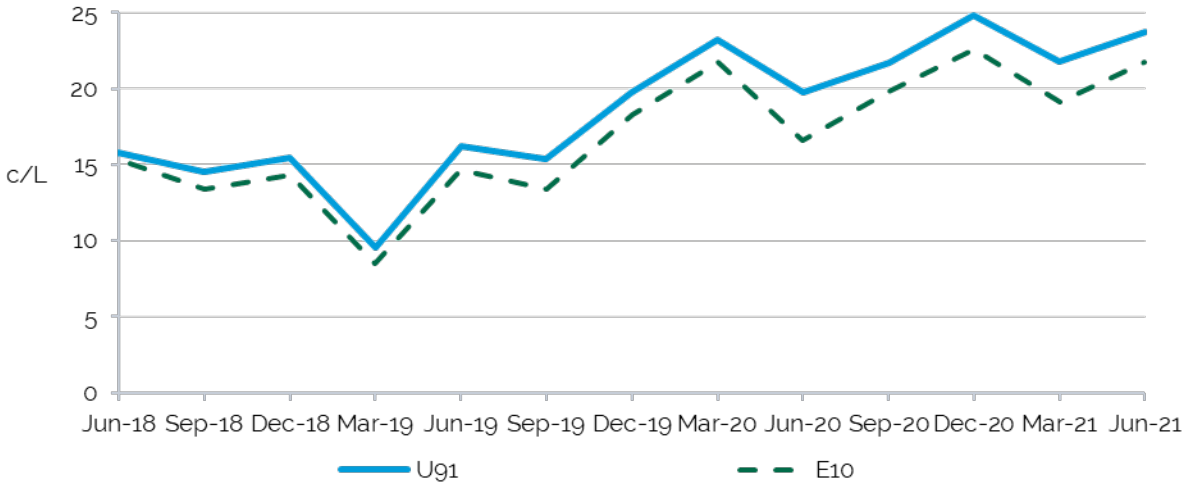


Source: IPART analysis based on data from FuelTrac

B.6 GIRDs are higher on U91

Figure B.7 shows that the GIRDs in Sydney are higher on U91. This trend is also observed in Brisbane.

Figure B.7 GIRDs on U91 and E10 in Sydney



Source: IPART analysis based on data from FuelTrac

C Changes to this report since it was first issued by IPART in September 2021

We reissued this report on 1 March 2022 to correct Table A.1 in this report. Both the revised values and the original values are shown below.

Port costs in the current Import Parity Price model – revision to Table A.1

IPP component	2017	2018	2019	2020	2021	5-year average
Australia						
Port (AUc per litre)	0.20	0.20	0.21	0.21	0.21	0.21

Source: IPART, Import price parity model.

Port costs in the current Import Parity Price model – original values in Table A.1

IPP component	2017	2018	2019	2020	2021	5-year average
Australia						
Port (AUc per litre)	20.00	20.00	21.00	21.00	21.00	21.00

[1] Biofuels Act 2007 (NSW), s 6 (2)(c)
[2] Biofuels Act 2007 (NSW), s 9B, 17A.
[3] NSW Government Open Data Portal, Datasets, *FuelCheck,* accessed on 19 March 2021.
[4] Biofuels Act 2007 (NSW), s 6 (2)(c)
[5] Biofuels Act 2007 (NSW), s 7.
[6] NSW Government - -E10 Fuel For Thought, The facts, accessed 23 March 2021.
[7] Biofuels Act 2007 (NSW), s 8.
[8] Biofuels Regulation (No 2) 2016, cl 8.
[9] Queensland Government, Business Queensland, Queensland biofuels mandates, accessed 23 March 2021.
[10] NSW Government, Statutory Review –Biofuels Act 2007, August 2020, p 2, accessed 31 March 2021.
[11] Biofuels Act 2007 (NSW), s 9A (2)(c)(i).
[12] AIP, submission to Draft Report, 27 May 2021, p 3.
[13] NSW Government, Statutory Review –Biofuels Act 2007, August 2020, p 4, accessed 31 March 2021.
[14] NSW Government, Statutory Review –Biofuels Act 2007, August 2020, pp 2-3, accessed 31 March 2021.
[15] Biofuels Act 2007 (NSW), s 17A (1).
[16] IPART, *IPART monitors the retail and wholesale market for fuel ethanol,* Final Report, December 2019.
[17] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020.
[18] Graham, P.W and Havas, L, 2020, *Projections for small-scale embedded technologies*, CSIRO, Australia, p 70.
[19] See, Sydney Morning Herald, *Energy sector readies for Australia's electric car 'tipping point'*, 29 March 2021.
[20] Australian Petroleum Statistics, Australian Petroleum Statistics – Issue 299 June 2021, Table 3B.
[21] NSW Government, Statutory Review –Biofuels Act 2007, August 2020, p 2, accessed 31 March 2021.
[22] NSW Government - -E10 Fuel For Thought, The facts, accessed 23 March 2021.
[23] Bioenergy Australia, submission to IPART Draft Report, May 2021, p 2 and AIP, submission to Draft Report, 27 May 2021, p 2.
[24] AIP, submission to Draft Report, 27 May 2021, p 2.
[25] IPART, Spreadsheet Model – Wholesale price for fuel ethanol – 2021.
[26] Bioenergy Australia, submission to IPART Draft Report, May 2021, p 1 and AIP, submission to Draft Report, 27 May 2021, p 2.
[27] For example, see Bioenergy Australia, submission to IPART Draft Report, May 2021, p 1.
[28] Biofuels Act 2007 (NSW), s 17A (2).
[29] AIP, submission to Draft Report, 27 May 2021, p 4.
[30] AECOM, Efficient costs of new entrant ethanol producers, October 2016, p 41.
[31] IPART calculation, based on AECOM, Efficient costs of new entrant ethanol producers, October 2016, p 37.
[32] AECOM, Efficient costs of new entrant ethanol producers, December 2016, p d 7; AWB Daily Grain Prices.
[33] AECOM, Efficient costs of new entrant ethanol producers, December 2016, p 7.
[34] AECOM, Efficient costs of new entrant ethanol producers, December 2016, pp 17, 41.
[35] AIP, submission to Draft Report, 27 May 2021, p 2.
[36] NSW Government - -E10 Fuel For Thought, The facts, accessed 23 March 2021.
[37] NSW Government, Statutory Review –Biofuels Act 2007, August 2020, p 15, accessed 31 March 2021.
[38] Biofuels Regulation (No 2) 2016, cl 8.
[39] NSW Fair Trading, Biofuels Act 2007 – Statement of Regulatory Intent, December 2016, accessed on 10 October 2018.
[40] Biofuels Regulation (No 2) 2016, cl 9(1)(d).
[41] Email from NSW Fair Trading, received 5 March 2021
[42] Email from NSW Fair Trading, received 5 March 2021
[43] IPART, IPART monitors the retail and wholesale market for fuel ethanol, 2018-19 Final Report, December 2019, p 3.
[44] Email from NSW Fair Trading, received 5 March 2021
[45] Australian Convenience and Petroleum Marketers Association (ACAPMA), *2019 Monitor of Fuel Consumer Attitudes*, November 2019, p 13.
[46] ACCC, *Report on the Australian petroleum market,* December quarter 2020, March 2021, p 2.
[47] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, pp 31, 33 and 34.
[48] Robbie Katter, Member for Traeger, *Labour's Triple failure closes Dalby Bio-Refinery,* Media Release, 25 June 2020.
[49] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 12.
[50] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 12.
[51] Robbie Katter, Member for Traeger, *Labour's Triple failure closes Dalby Bio-Refinery,* Media Release, 25 June 2020.
[52] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 22.
[53] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 4.
[54] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 15.
[55] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 16.
[56] IBISWorld, *Ethanol Fuel Production in Australia*, August 2020, p 16.
[57] Bioenergy Australia, submission to IPART Draft Report, May 2021, p 2.
[58] ACCC, *Report on the Australian petroleum market*, December quarter 2020, March 2021, p 4.
[5959] ACCC, *Report on the Australian petroleum market*, June quarter 2020, September 2020, p 8.
[60] ACCC, *Report on the Australian petroleum market*, June quarter 2020, September 2020, p 8.
[61] ACCC, *Report on the Australian petroleum market*, June quarter 2020, September 2020, p 8.

ISBN 978-1-76049-532-9