



# MCKELL INSTITUTE

## Cost of Inaction: Addendum 1

The impact of wholesale gas prices on average household power bills in New South Wales, Victoria, Queensland, South Australia and Tasmania.

October 2018



## Advisory Panel

*The McKell Institute would like to thank the following group of esteemed people for their valuable feedback and contributions in the creation of this report.*

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She has written extensively on the Australian electricity sector, the consumer impacts of restructured energy markets, electricity price formation, and energy security. Her research focus includes the economic-energy-environment relation, household energy affordability, and economic regulation.

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## Dr. Ariel Liebman



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Ariel is an energy markets specialist with 15 years' experience across all aspects of the electricity supply chain incorporating modelling of deregulated power markets and generation investment planning, network regulation analysis, and commercial retail portfolio energy trading and risk management (ETRM). One of his recent activities is the modelling and simulation of electricity markets using high performance computing platforms such as computing clouds to manage the explosive complexity in analysing future system scenarios to incorporate technology cost uncertainty and policy volatility. Ariel holds a PhD in Physics from the University of Queensland and a Masters in Physics from Auckland University. He has published on various aspects of the electricity industry including impacts of emission trading, real-options investment, and wholesale price forecasting.

Ariel provide insights based on a unique mix of research and commercial experience Dr. Liebman has advised energy utilities across Australia including Energy Australia, United Energy, ERM Power, Ergon Energy, and others. He is therefore able to identify possible research collaboration opportunities that have direct commercial and market relevance.

Ariel also co-leads the Australia Indonesia Centre Energy Cluster a \$2.8 million research program in Microgrids and Energy System transition modelling to tackle the challenge of integrating distributed storage and renewables into new system planning and investment. He has also been a frequent presenter at conferences over many years on issues ranging from portfolio risk management, carbon pricing and consumer electricity price trends.



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William Mckell made a powerful contribution to both New South Wales and Australian society through significant social, economic and environmental reforms.

For more information phone (02) 9113 0944 or visit [www.mckellinstitute.org.au](http://www.mckellinstitute.org.au)

## Background

This report has been funded directly by The Mckell Institute and has not been commissioned by any of our sponsors or supporters. The authors of this paper have utilised a range of publicly available information and our own analysis in compiling this paper.

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## Note

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## Introduction

One of the predominant issues to persistently make headlines in Australian society in recent times has been the rising price of residential electricity and the equally volatile gas market whose wholesale prices have led to unprecedented rises in electricity for the average Australian. A lack of a comprehensive domestic gas reservation policy and definitive action to curb gas prices, has meant that households today are paying an extremely high price for their power needs.

In February 2018, the Mckell Institute released *The Cost of Inaction*<sup>1</sup>, which estimated the impact of wholesale gas prices on average household electricity bills in Queensland, New South Wales and Victoria. The findings indicated that households would be paying substantially more for electricity than they would be, if wholesale gas prices were commensurate with prices advised by the ACCC netback range at the time<sup>2</sup>. The netback price is the cost of gas at the wellhead for gas supplied to LNG facilities and is worked out by deducting gas shipping (sea freight) costs, liquefaction costs and pipeline transportation costs from delivered LNG export prices<sup>3</sup>. In October 2018, the ACCC released the LNG Netback Price series, a crucial tool that helps forecast future wholesale prices in the East Coast market<sup>4</sup>. As of October 2018, the forward estimates of the Netback Price series predicts prices rising to the high levels seen in early 2017, at times up to \$13/gj.

This report seeks to serve as an addendum to the previous report and highlights the rising price of wholesale gas and its impact on electricity in New South Wales, Victoria, Queensland, South Australia and Tasmania within the price ranges forecast by the ACCC. It will also illustrate how the average gas bill has varied in each state in the recent past.

Since the beginning of the year, domestic and international gas markets have both been subject to considerable change, and the outlook has become steadily unclear as political

turbulence continues to override opportunities for bipartisan solutions. The political failure of the Government's proposed National Energy Guarantee (NEG) is just one recent example of the uncertainty facing Australia's energy market.

Amidst the Federal Government's inaction, the average price of contracted wholesale gas paid by domestic users has risen unhindered. The latest gas inquiry released by the ACCC reports that the average price paid for 2019 contracts (for Southern users) increased to \$9.40/GJ, at the upper end of the Netback Price range reported in the ACCC's December report in 2017<sup>5</sup>.

Cognisant of the significant role the wholesale gas price has on household electricity and gas bills – outlined in *The Cost of Inaction* – and the sustained rise in the average contract gas price paid across the East Coast, there has never been a more critical time for our Federal Government to intervene. In the absence of definitive action, the McKell Institute has updated and extended its findings in this latest instalment. The purpose of this paper is to better inform the community and general public on how much cheaper household energy bills could be in the presence of an effective gas policy.

## Key Findings

- Household energy prices across electorates in Queensland, New South Wales, Victoria, South Australia, and Tasmania, will continue to rise until the end of 2020 under current forecast price and consumption trends without a significant reduction in the wholesale gas price.
- As of 2018 households are on average, paying more per year, on their household electricity bills compared to 2017, even though average consumption of energy has fallen:
  - The average household in New South Wales is paying \$152 more.
  - The average household in Victoria is paying \$180 more.
  - The average household in Queensland is paying \$45 more.
  - The average household in South Australia is paying \$243 more.
  - The average household in Tasmania is paying \$24 more.
- By 2020, if nothing is done to curb escalating gas prices, we estimate using figures of where the wholesale gas price currently is, households in each state will be paying substantially more for electricity by 2020. This is in context of gas prices rising to \$12/GJ which is within range of prices that have been offered on the East Coast this year<sup>6</sup>. Prices could also very likely reach \$14/GJ or more in certain instances.
  - The average household in New South Wales would pay in total \$331 more.
  - The average household in Victoria would pay in total \$197 more.
  - The average household in Queensland would pay in total \$730 more.
  - The average household in South Australia would pay in total \$665 more.
  - The average household in Tasmania currently already incurs a 14/GJ gas price.

## Part 1: The importance of low gas prices to Australian households

This report identifies the trajectory of rising prices of household electricity across federal electorates on the East Coast, South Australia and Tasmania. It does this by analysing and forecasting residential electricity consumption and identifying the correlation between gas prices and electricity prices in Australia.

The relationship between rising gas prices and rising electricity prices have been corroborated by many energy regulators and government bodies in the market.

For instance, the Australian Energy Regulator, in its May 2017 state of the market report, noted that:

*“Rising demand and a contraction in supply contributed to tight market conditions, with gas powered generation often setting dispatch prices. And gas generators responded to higher gas fuel costs by bidding into the market at higher price levels, repeatedly spiking wholesale prices in mainland NEM regions during winter 2016 and over summer 2016–17. In 2015–16, thirty-minute settlement prices exceeded \$200 per megawatt hour (MWh) almost 4000 times—an unprecedented number. Another 2100 instances occurred in the first nine months of 2016–17<sup>7</sup>.*

Further, in the Gas Price Trends Review 2017, published by the Department of Environment and Energy, the report underlined the impact of rising wholesale gas prices on electricity bills in the East Coast:

*“...the wholesale price of electricity in the (east coast) NEM has also been heavily influenced in recent times by the price of gas as structural changes occur in the electricity generation market that start to see the underlying value of dispatchable gas plant being realised and used more<sup>8</sup>.*

Moreover, the Review states that with a volatile government gas policy on reliability and emissions, major changes could occur which would place a much greater demand on Gas-Powered-Generation (GPG) gas supplies. This coupled with rising demand in the electricity sector would require serious intervention by policy makers and regulators as the “current outcome of relatively high gas prices and electricity prices is not sustainable and yet it is likely to continue if gas becomes the marginal generation plan in the NEM...<sup>9</sup>”.

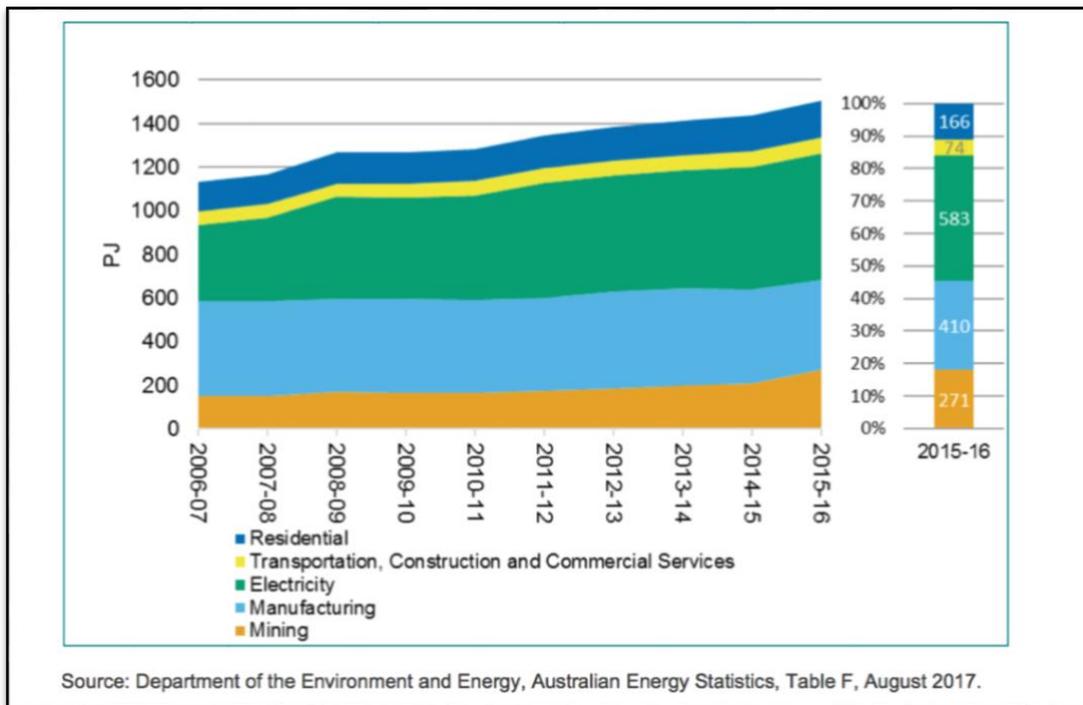


Figure 1.1 – Annual gas consumption in Australia by sector 2006-16.

As is seen in the image above, gas accounts for a significant proportion in the electricity sector (in green) in Australia.

Additionally, the 2017 residential electricity price trends report published by the Australian Energy Market Commission (AEMC) identified the different components that make up the costs and determine the current trends in residential electricity prices<sup>10</sup>.

1. Network costs: Consisting of transmitting and distribution costs accounting for between 40-55 percent of the price.
2. Wholesale market costs: Accounting for between 30-40 percent of the price in most states.
3. Environmental Policy Costs: Directly resulting in 5-15 percent of the price.
4. Residual Component: Comprising in 5-15 percent of the price.

The 2017 review illustrated the significant role played by wholesale costs in determining the electricity price across jurisdictions stating that “..in the National Electricity Market (NEM), wholesale cost are expected to increase from 2016-17 to 2017-18 due to the retirements of Northern (546 MW), Hazelwood (1,600 MW) and Smithfield (171 MW) synchronous power stations and *high gas prices...*”<sup>11</sup>. Further, the ACCC also reported that the closure of the Northern Power Station and Hazelwood led to an increase in the importance of gas for electricity generation with gas demand for GPG increasing by 44PJ from 2016 to 2017<sup>12</sup>.

	Average Usage <sup>13</sup>	Standing offer price increase <sup>14</sup>	Change in \$
ACT	8000 kWh	19–21%	\$320–350
NSW*	7200 kWh	15–20%	\$325–\$450
Victoria*	4800 kWh	5–10%	\$150–181
Queensland	8000 kWh	4%	\$115
South Australia	6000 kWh	16–19%	\$400–510
Tasmania	8550 kWh	2%	\$38 <sup>15</sup>

Figure 1.2: The Average Increases in household standing offer electricity rates 2016-17<sup>13</sup>

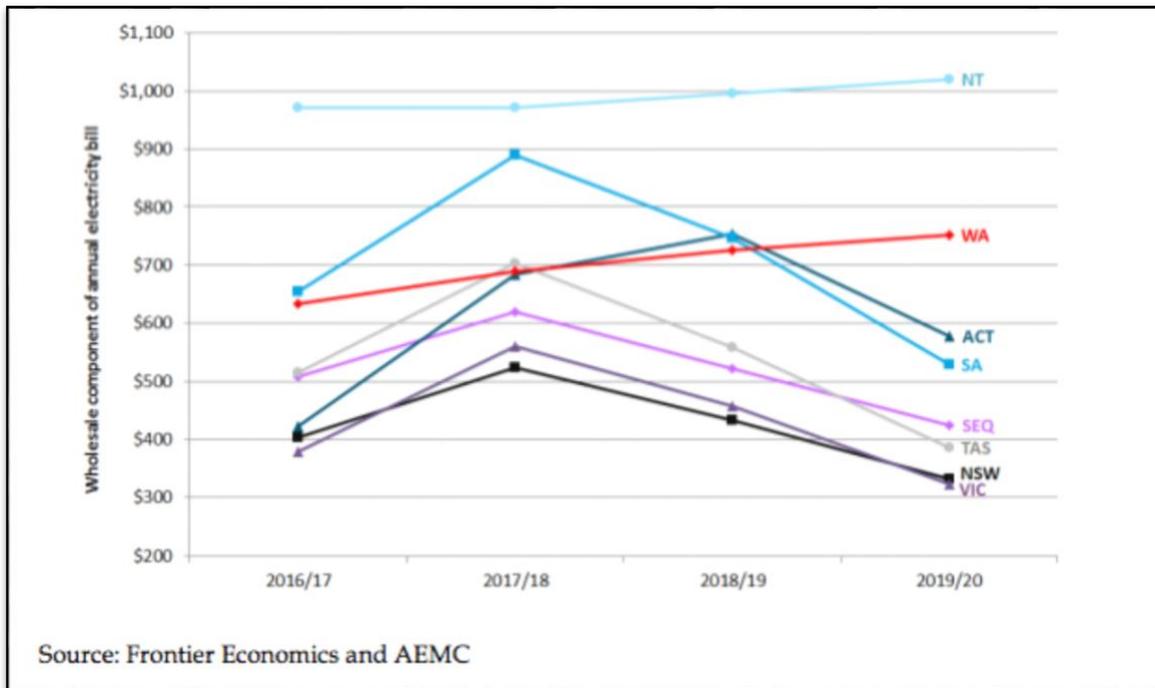


Figure 1.3: Trends in wholesale component of representative residential annual electricity bills across jurisdictions<sup>14</sup>

As stated in a variety of reports including the submission by the AEMC to the ACCC’s inquiry<sup>15</sup>, wholesale market outcomes are increasingly interconnected with environmental policy, the wholesale gas market and system security as shown in Figure 1.3 above. Higher gas fuel costs result in higher input costs for gas-fired generators. This results in higher wholesale electricity market costs as gas-fired generators often set the dispatch price in the wholesale electricity spot market.

The latest instalment of the ACCC’s gas inquiry states that the prices offered in the market for gas supply in 2019 have remained mostly “in the high \$8 to \$11/GJ range”<sup>16</sup>. It is now

increasingly apparent that the Federal Government’s actions in 2017 have been ineffective in placing downward pressure on wholesale gas prices. Regrettably this has translated to higher householder energy bills while energy companies continue to profit from higher prices as shown in Figure 1.4 below<sup>17</sup>.

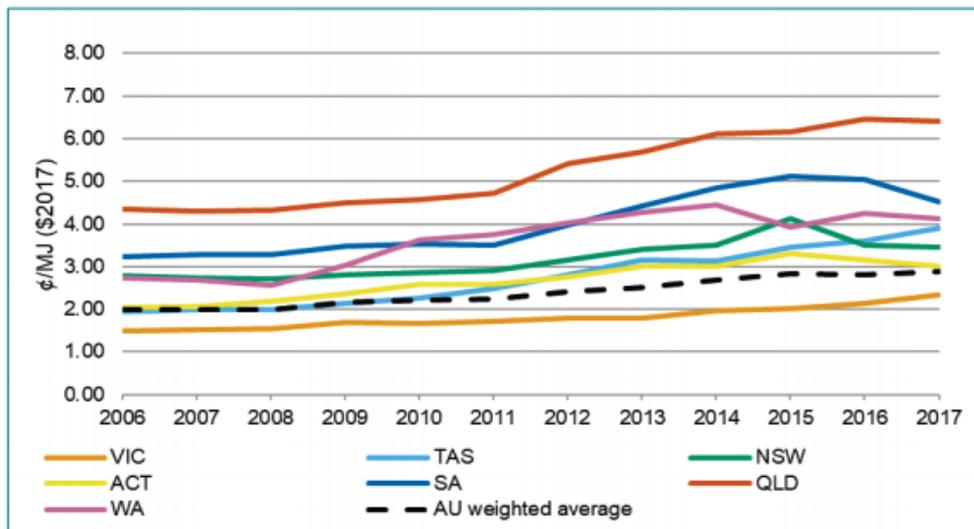


Figure 1.4: Residential retail gas prices 2006-2017 in c/MJ

There have been some actions by State Governments to increase the availability of cheaper gas supply. For instance, in April 2018 the Northern Territory Government announced the official release of 49% of the Territory’s land for gas exploration and production. In May 2018 the Victorian government also released five new oil and gas exploration blocks located in the offshore Otway Basin. However, while there remains no government control to deliver enough gas supply for the domestic market at an affordable price, there are no incentives for producers to supply the domestic market with affordable gas. Of critical importance is the distinction between gas supply and domestic gas prices, neither of which remain as dependent on each other as economic theory might suggest.

## Part 2: Trends in current household consumption

This report outlines the current and forecasted trends in household electricity consumption given that gas prices remain unchanged and assume the current base prices.

Australia’s energy prices fluctuate across different states and jurisdictions but with each city and each state’s regional areas, prices are generally harmonised.

This report identifies median consumption of energy (kWh) for NSW, VIC, QLD, SA and TAS across the federal electorates. It also uses data published by the AEMC to forecast household consumption levels until 2020 and predicts their annual household bills.

The median household energy consumption and the respective annual household electricity bills of the ‘representative consumer’ in each state is shown in the graph below. Various analyses predict that household consumption of energy will fall in the years 2019-2020 due to consumers becoming more energy efficient and aware of energy-saving technologies.

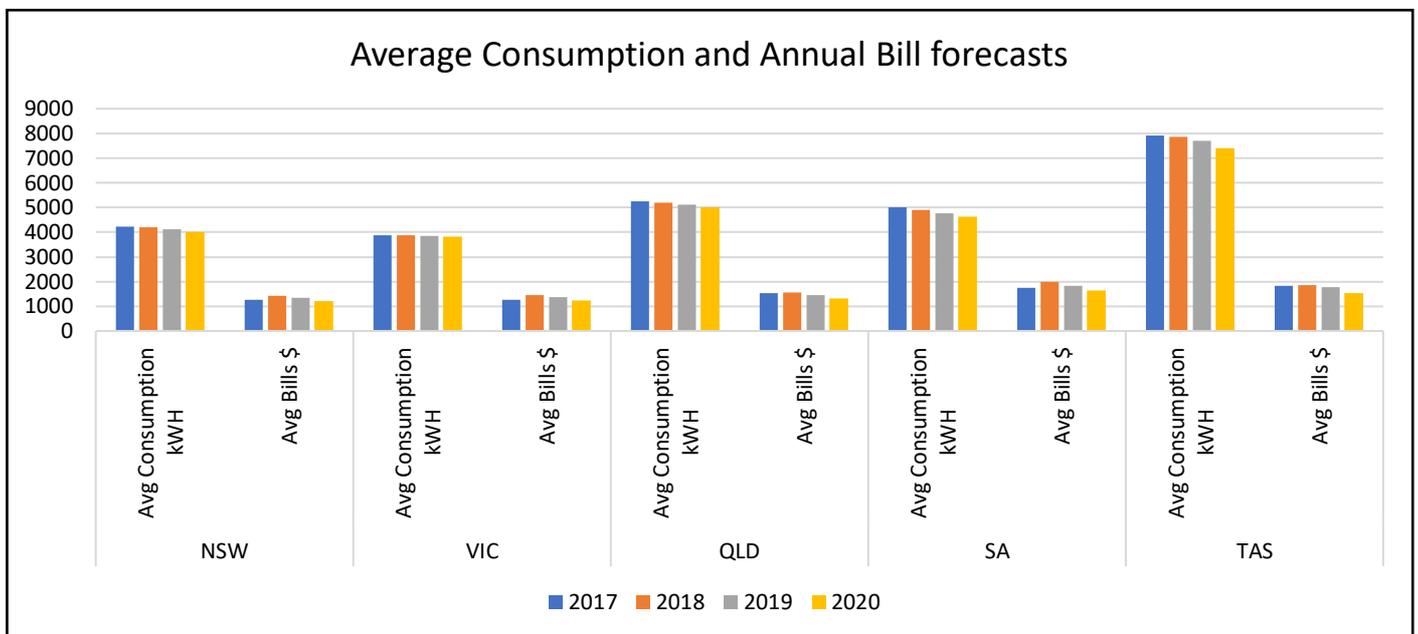


Figure 2.1: Average consumption and electricity price forecasts

## The impact of gas prices on power bills

The different costs depicted in the Appendices show the impact of four different wholesale gas prices on power bills across the five states analysed in this report.

The current base gas prices for each state were obtained from data published by the AEMC:

**NSW: \$8.1/GJ    VIC: \$9.35/GJ    QLD: \$6.19/GJ    SA: \$7.51/GJ    TAS: \$14.15/GJ**

The likely scenarios:

Household power prices 2018-2020:

- Scenario One: Gas at \$8/GJ
- Scenario Two: Gas at \$10/GJ
- Scenario Three: Gas at \$12/GJ
- Scenario Four: Gas at \$14/GJ

According to the ACCC's latest report, most of the offers for gas made in the first quarter of 2018 for gas supply in 2019 fell between \$8-\$11/GJ. Further, the report states that the expected average gas prices to be paid on the East Coast would range from approximately \$7.5 to \$12.6/GJ. This would cause a considerably adverse impact on the wholesale component of the average household's electricity bill driving prices up quite gravely. The average price that GPGs paid until April 2018 was \$9/GJ which is higher than the base price used in the calculations for household bills in NSW, QLD and SA. If gas prices rises to numbers that reach \$14-\$16/GJ which is not unlikely according to energy analysts at Credit Suisse<sup>18</sup> and previous reports by the ACCC and AEMC (which show the impact of high netback prices on domestic gas prices); then customers will be paying considerably more for electricity, in the years to come.

## Part 3: Findings

The following results display trends in household energy consumption and electricity prices using consumption data from 2010-2012 applied to forecasted trends until 2020. The data obtained from a variety of sources indicate that power prices have reached a peak in 2018 and will then show gradual decline between 2018-2020 as household electricity consumption also falls. However, these cost savings will not be realised by households, if gas prices are allowed to rise unhindered.

It is important to note that if gas prices remain at current levels, then according to AEMC forecasts, electricity prices are predicted to decrease marginally over the next two years. However, if gas prices continue to escalate, then the average residential bill will rise, as shown in Appendix B.

The following figures display the varying electricity prices for the representative consumer in each state under different gas prices and an example of an electorate in each state with high median consumption of electricity. It demonstrates the rate of savings that could be achieved if gas prices were lowered.

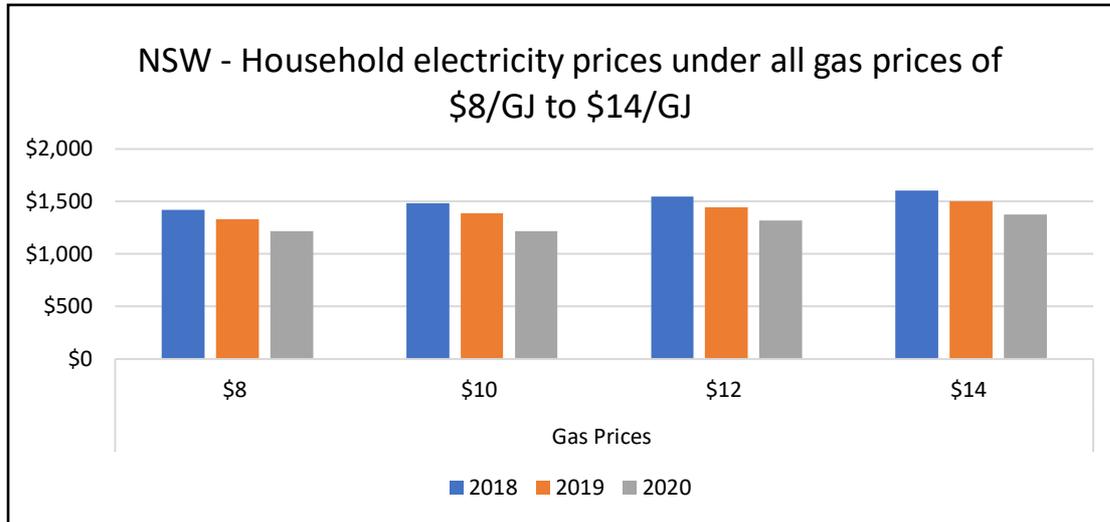


Figure 3.1: The price of electricity under varying gas prices in NSW

Table 3.1: The electorate of Mitchell, New South Wales

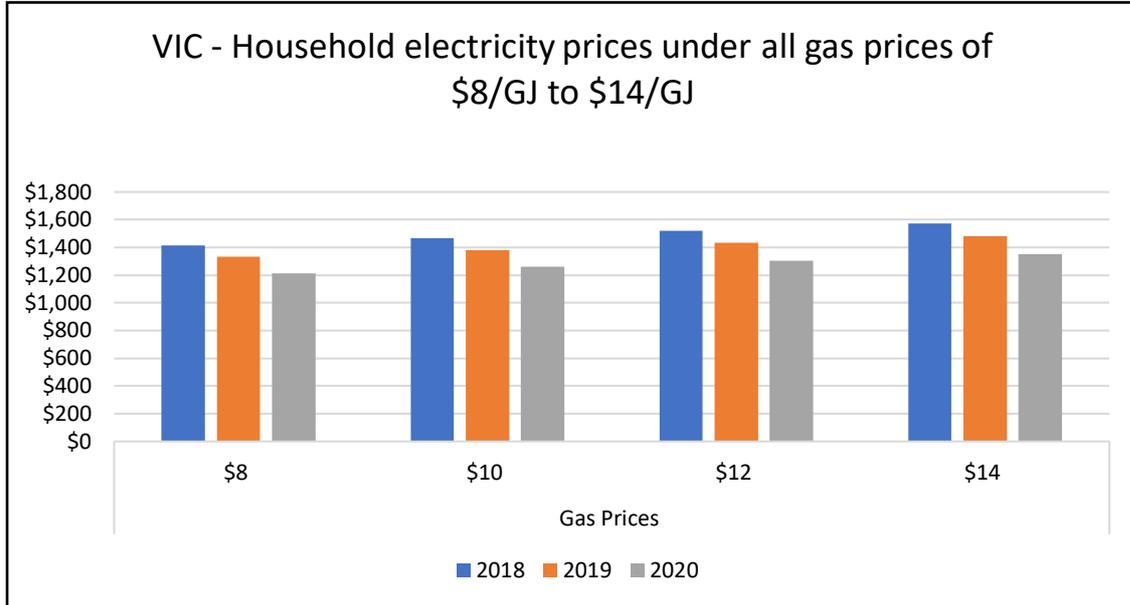


Figure 3.2: The price of electricity under varying gas prices in VIC

Table 3.2: The electorate of Indi, Victoria

	\$6/GJ	\$8/GJ	Current Price	\$10/GJ	\$12/GJ
<b>2018</b>	\$1,824	\$1,895	\$1,943	\$1,966	\$2,037
<b>2019</b>	\$1,719	\$1,786	\$1,831	\$1,853	\$1,920
<b>2020</b>	\$1,565	\$1,626	\$1,667	\$1,687	\$1,748

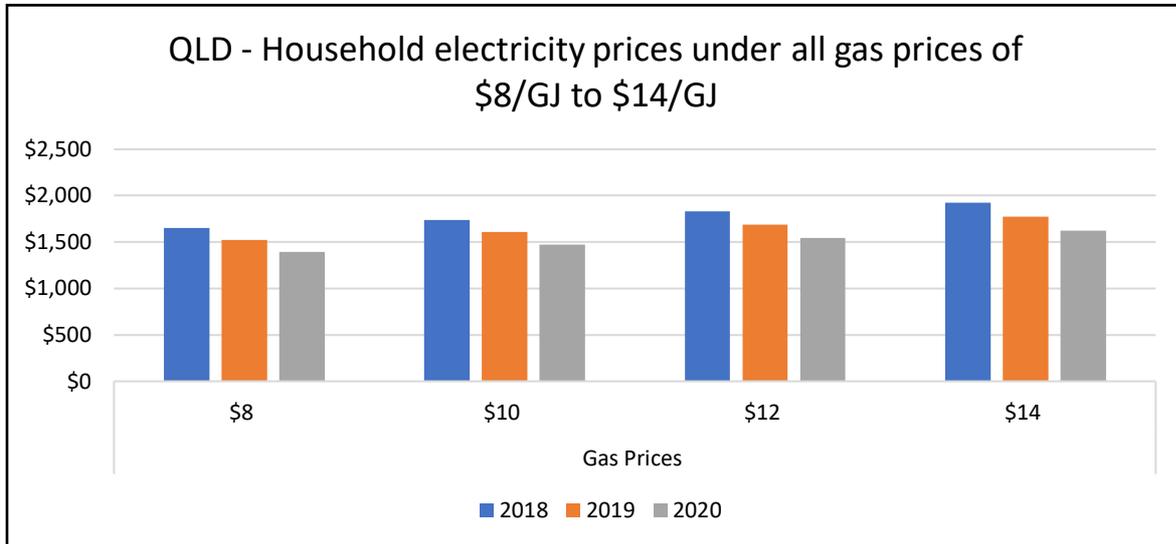


Figure 3.3: The price of electricity under varying gas prices in QLD

Table 3.3: The electorate of Forde, Queensland

	\$6/GJ	Current Price	\$8/GJ	\$10/GJ	\$12/GJ
<b>2018</b>	\$1,842	\$1,852	\$1,949	\$2,056	\$2,163
<b>2019</b>	\$1,700	\$1,709	\$1,799	\$1,898	\$1,996
<b>2020</b>	\$1,556	\$1,565	\$1,647	\$1,737	\$1,828

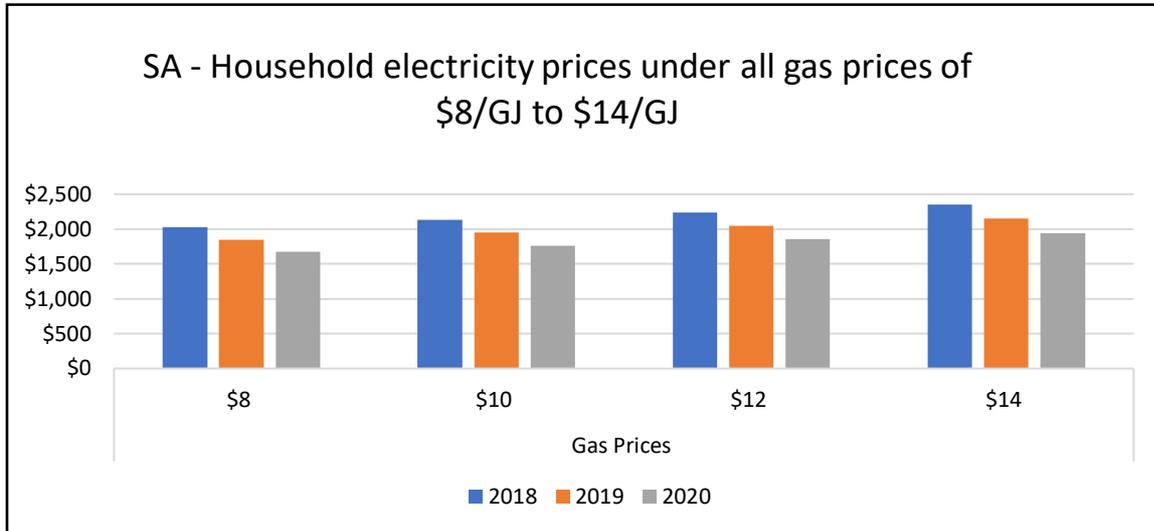


Figure 3.4: The price of electricity under varying gas prices in SA

Table 3.4: The electorate of Mayo, South Australia

	\$6/GJ	Current Price	\$8/GJ	\$10/GJ	\$12/GJ
<b>2018</b>	\$2,467	\$2,572	\$2,606	\$2,745	\$2,884
<b>2019</b>	\$2,255	\$2,351	\$2,382	\$2,509	\$2,636
<b>2020</b>	\$2,040	\$2,127	\$2,155	\$2,270	\$2,385

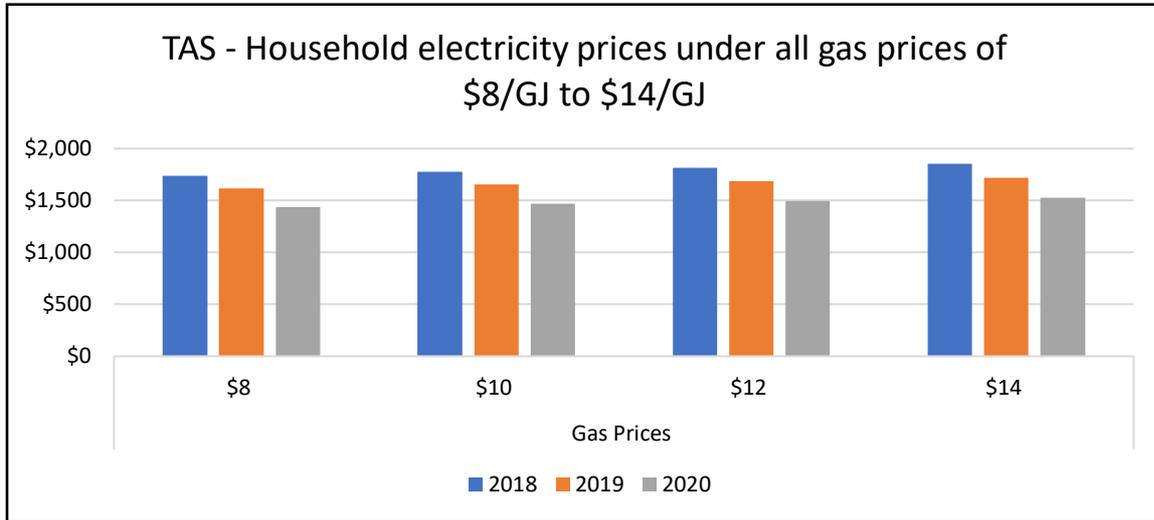


Figure 3.5: The price of electricity under varying gas prices in TAS

Table 3.5: The electorate of Franklin, Tasmania

	\$6/GJ	\$8/GJ	\$10/GJ	\$12/GJ	Current Price
<b>2018</b>	\$1,830	\$1,870	\$1,909	\$1,949	\$1,991
<b>2019</b>	\$1,700	\$1,737	\$1,774	\$1,811	\$1,851
<b>2020</b>	\$1,510	\$1,543	\$1,575	\$1,608	\$1,643

The above figures and tables show the savings that consumers could benefit from if domestic gas prices in Australia were lowered to previously advised ACCC figures. It also shows the variation in household bills across the different states.

## Conclusion

This report has illustrated the forecasted trends in residential electricity prices if wholesale gas prices are allowed to increase exponentially. It seeks to explore the crucial link between rising gas prices and household electricity prices.

Gas prices comprise a significant portion of household power bills and set the price at almost fifty percent of the time across the NEM as explained in Appendix A. This highlights the significant role played by the price of gas on residential electricity bills.

This report calls for a reform to the gas market as addressed by the first report released in February 2018 – ‘The Cost of Inaction’ and the need for a comprehensive domestic gas reservation scheme that maintains low prices for Australian consumers before the gas is exported and market forces drive the price of wholesale gas up.

If no definitive action is taken by the Government to control gas prices, households across NSW would be paying \$331 more for their electricity bill in total by the year 2020. This is if gas prices are allowed to rise from their current base price. Households in Victoria would be paying \$197 more in total, Queensland homes will be incurring an additional \$730 more and households in South Australia will face in total an increase by \$665 in their household power bills. Tasmanian households already pay a high electricity bill as their current base gas price is \$14.15/GJ according to recently published AEMC data.

It is increasingly becoming apparent that domestic gas prices must be curtailed so that households and consumers in Australia will not be subject to exponentially increasing power bills and instead, be able to meet their power needs in a sustainable and affordable manner.

## Appendix A: Methodology

### Electricity Consumption

1. Data for the years 2010-2012 were obtained from the ABS – Electrical supply for residential non-generating meters:  
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4670.02012?OpenDocument>
2. The data were obtained from SA2 regions and then re-classified into federal electorates based on ABS classification structures.
3. The consumption for the years from 2013-2015 were obtained using energy consumption data from the Office of the Chief Economist and was re-proportioned by electorates using the changing trends in mean energy consumption per state.
4. The consumption data for 2016 and 2017 were extracted from the AEMC Electricity Price Trends Review which had the total annual consumption for the ‘representative consumer’ in each state. 2016 -  
<https://www.aemc.gov.au/sites/default/files/content/be91ba47-45df-48ee-9dde-e67d68d2e4d4/FINAL-REPORT%C2%A02016-RESIDENTIAL-ELECTRICITY-PRICE-TRENDS.pdf>  
2017- <https://www.aemc.gov.au/sites/default/files/content/bf56a5d5-e2b2-4c21-90ed-79dda97eb8a4/2017-Residential-Electricity-Price-Trends.pdf>
5. For the energy consumption forecasts for the years from 2018-2020, the trend data was downloaded from the AEMO website Insights Forecast and the trend was applied to the 2017 data to forecast for electorates from 2018-2020.  
<https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Data-dashboard>

## Electricity Prices

1. The electricity prices per kWh for each state, for the years between 2010-2016 were extracted from the AEMO report - page 42, Fig 10.  
<http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/-/media/080A47DA86C04BE0AF93812A548F722E.ashx>.
2. For the years from 2017-2020, the average price of the Market Offer and Standing Offer of each state excluding GST, were derived from the excel files off the AEMC electricity review for 2017. <https://www.aemc.gov.au/markets-reviews-advice/2017-residential-electricity-price-trends>.
3. Total residential electricity bills were calculated by multiplying energy consumption per year (kWh) into the price per kWh.

## Gas Price effect on electricity

1. Gas Prices at present taken from the average base price from 2016/17 and 2017/18 from AEMC data.
2. A range of different gas prices were obtained from the ACCC September 2017 inquiry and the Independent Review of the future of the NEM to model various scenarios of rising electricity prices due to rising gas prices.
3. The wholesale cost component of electricity (WMCP) was obtained from the AEMC and was calculated to be:  
NSW – 34.5%, VIC – 34.2%, QLD – 35.8%, TAS – 28.1%, SA – 40.6%  
<https://www.aemc.gov.au/sites/default/files/content/bf56a5d5-e2b2-4c21-90ed-79dda97eb8a4/2017-Residential-Electricity-Price-Trends.pdf>.

4. Since gas is a part of the wholesale component of electricity, it was important to determine the proportion of time that gas sets the electricity price. This was calculated to be 50% of the time according to AEMO data - *operational demand and regional references prices from the period August 2017 - July 2018* available on <http://nemweb.com.au>.
5. Following this, the wholesale energy cost proportions (WMCP) were broken into two parts - that proportion when gas set the price and the remainder: (1- gas proportion).
6. Then the WMCPs were applied to the electricity costs by the proportion of times gas sets the price in the market -  $WMCP * (1 + \text{gas proportion} * \% \text{ change in gas price})$ .
7. Finally, for each average bill and percentage change in gas price, the effect above was multiplied by the original bill to get the new bill. The gas price change is therefore:  $\text{Electricity bill} * WMCP * (\text{gas proportion} * \% \text{ change in gas price})$

## Appendix B: Forecasts for 2019-2020 under rising gas prices

NSW Electorates (Average consumer)

	Costs if gas prices remain at current levels		Rising gas prices 2019			Rising gas prices 2020		
	2019	2020	\$10	\$12	\$14	\$10	\$12	\$14
<b>Banks</b>	\$1,304	\$1,192	\$1,356	\$1,412	\$1,467	\$1,240	\$1,291	\$1,342
<b>Barton</b>	\$1,103	\$1,008	\$1,147	\$1,194	\$1,241	\$1,049	\$1,092	\$1,135
<b>Bennelong</b>	\$1,224	\$1,119	\$1,274	\$1,326	\$1,378	\$1,165	\$1,212	\$1,260
<b>Berowra</b>	\$1,935	\$1,770	\$2,014	\$2,096	\$2,179	\$1,841	\$1,917	\$1,992
<b>Blaxland</b>	\$1,239	\$1,133	\$1,289	\$1,342	\$1,394	\$1,179	\$1,227	\$1,275
<b>Bradfield</b>	\$1,772	\$1,621	\$1,844	\$1,919	\$1,995	\$1,686	\$1,755	\$1,824
<b>Calare</b>	\$1,268	\$1,159	\$1,319	\$1,373	\$1,427	\$1,206	\$1,256	\$1,305
<b>Chifley</b>	\$1,416	\$1,295	\$1,473	\$1,534	\$1,594	\$1,347	\$1,402	\$1,458
<b>Cook</b>	\$1,304	\$1,192	\$1,356	\$1,412	\$1,467	\$1,240	\$1,291	\$1,342
<b>Cowper</b>	\$1,081	\$988	\$1,125	\$1,171	\$1,217	\$1,028	\$1,071	\$1,113
<b>Cunningham</b>	\$1,237	\$1,131	\$1,287	\$1,339	\$1,392	\$1,177	\$1,225	\$1,273
<b>Dobell</b>	\$1,404	\$1,284	\$1,461	\$1,521	\$1,581	\$1,336	\$1,390	\$1,445
<b>Eden-Monaro</b>	\$1,182	\$1,081	\$1,230	\$1,280	\$1,331	\$1,125	\$1,171	\$1,217
<b>Farrer</b>	\$1,455	\$1,331	\$1,514	\$1,576	\$1,638	\$1,384	\$1,441	\$1,498
<b>Fowler</b>	\$1,555	\$1,421	\$1,617	\$1,684	\$1,750	\$1,479	\$1,539	\$1,600
<b>Gilmore</b>	\$1,015	\$928	\$1,056	\$1,099	\$1,142	\$966	\$1,005	\$1,045
<b>Grayndler</b>	\$1,004	\$918	\$1,045	\$1,088	\$1,130	\$955	\$995	\$1,034
<b>Greenway</b>	\$1,524	\$1,393	\$1,586	\$1,650	\$1,715	\$1,450	\$1,509	\$1,568
<b>Hughes</b>	\$1,681	\$1,537	\$1,749	\$1,821	\$1,893	\$1,600	\$1,665	\$1,731
<b>Hume</b>	\$1,701	\$1,555	\$1,770	\$1,842	\$1,915	\$1,618	\$1,685	\$1,751
<b>Hunter</b>	\$1,580	\$1,445	\$1,644	\$1,711	\$1,779	\$1,503	\$1,565	\$1,626
<b>Kingsford-Smith</b>	\$981	\$897	\$1,020	\$1,062	\$1,104	\$933	\$971	\$1,009
<b>Lindsay</b>	\$1,784	\$1,631	\$1,856	\$1,932	\$2,008	\$1,697	\$1,767	\$1,836
<b>Lyne</b>	\$1,142	\$1,044	\$1,188	\$1,237	\$1,286	\$1,086	\$1,131	\$1,175
<b>Macarthur</b>	\$1,537	\$1,406	\$1,599	\$1,665	\$1,730	\$1,462	\$1,522	\$1,582
<b>Mackellar</b>	\$1,484	\$1,357	\$1,544	\$1,608	\$1,671	\$1,412	\$1,470	\$1,528
<b>Macquarie</b>	\$1,531	\$1,400	\$1,593	\$1,658	\$1,723	\$1,456	\$1,516	\$1,576
<b>McMahon</b>	\$1,561	\$1,428	\$1,624	\$1,691	\$1,757	\$1,485	\$1,546	\$1,607

Mitchell	\$1,928	\$1,763	\$2,006	\$2,088	\$2,170	\$1,834	\$1,909	\$1,984
New England	\$1,309	\$1,197	\$1,362	\$1,417	\$1,473	\$1,245	\$1,296	\$1,347
Newcastle	\$1,141	\$1,043	\$1,187	\$1,235	\$1,284	\$1,085	\$1,129	\$1,174
North Sydney	\$1,013	\$926	\$1,054	\$1,097	\$1,140	\$964	\$1,003	\$1,043
Page	\$1,111	\$1,016	\$1,156	\$1,203	\$1,250	\$1,057	\$1,100	\$1,143
Parkes	\$1,449	\$1,325	\$1,508	\$1,570	\$1,632	\$1,379	\$1,435	\$1,492
Parramatta	\$1,149	\$1,050	\$1,195	\$1,244	\$1,293	\$1,093	\$1,138	\$1,182
Paterson	\$1,490	\$1,363	\$1,551	\$1,614	\$1,678	\$1,418	\$1,476	\$1,534
Reid	\$1,116	\$1,021	\$1,161	\$1,209	\$1,256	\$1,062	\$1,105	\$1,149
Richmond	\$1,080	\$988	\$1,124	\$1,170	\$1,216	\$1,027	\$1,070	\$1,112
Riverina	\$1,262	\$1,154	\$1,313	\$1,367	\$1,421	\$1,201	\$1,250	\$1,299
Robertson	\$1,449	\$1,325	\$1,507	\$1,569	\$1,631	\$1,378	\$1,435	\$1,491
Shortland	\$1,367	\$1,250	\$1,423	\$1,481	\$1,539	\$1,301	\$1,354	\$1,407
Sydney	\$816	\$746	\$849	\$884	\$919	\$776	\$808	\$840
Warringah	\$1,176	\$1,075	\$1,223	\$1,273	\$1,323	\$1,119	\$1,164	\$1,210
Watson	\$1,140	\$1,042	\$1,186	\$1,235	\$1,283	\$1,085	\$1,129	\$1,173
Wentworth	\$968	\$885	\$1,007	\$1,048	\$1,089	\$921	\$958	\$996
Werriwa	\$1,482	\$1,355	\$1,542	\$1,605	\$1,668	\$1,410	\$1,467	\$1,525
Whitlam	\$1,287	\$1,177	\$1,339	\$1,394	\$1,449	\$1,224	\$1,274	\$1,325

## VIC Electorates (Average consumer)

	Costs if gas prices remain at current levels		Rising gas prices 2019			Rising gas prices 2020		
	2019	2020	\$10	\$12	\$14	\$10	\$12	\$14
Aston	1,408	1,282	1,425	1,476	1,527	1,297	1,344	1,391
Ballarat	1,424	1,297	1,441	1,493	1,545	1,312	1,360	1,407
Batman	1,016	925	1,028	1,066	1,103	936	970	1,004
Bendigo	1,461	1,330	1,478	1,532	1,585	1,346	1,395	1,443
Bruce	1,196	1,089	1,210	1,254	1,298	1,102	1,142	1,182
Calwell	1,199	1,092	1,214	1,257	1,301	1,105	1,145	1,185
Casey	1,462	1,331	1,479	1,533	1,586	1,347	1,396	1,444
Chisholm	1,280	1,165	1,295	1,342	1,388	1,179	1,222	1,264
Corangamite	1,418	1,292	1,435	1,487	1,539	1,307	1,354	1,401
Corio	1,185	1,079	1,199	1,242	1,286	1,092	1,131	1,171
Deakin	1,251	1,139	1,266	1,312	1,357	1,153	1,194	1,236
Dunkley	1,236	1,126	1,251	1,296	1,342	1,139	1,180	1,222

<b>Flinders</b>	1,413	1,286	1,429	1,481	1,533	1,302	1,349	1,396
<b>Gellibrand</b>	1,044	951	1,057	1,095	1,133	962	997	1,032
<b>Gippsland</b>	1,460	1,329	1,477	1,530	1,584	1,345	1,394	1,442
<b>Goldstein</b>	1,469	1,338	1,486	1,540	1,594	1,353	1,402	1,451
<b>Gorton</b>	1,316	1,198	1,332	1,380	1,428	1,213	1,256	1,300
<b>Higgins</b>	1,332	1,213	1,348	1,396	1,445	1,227	1,272	1,316
<b>Holt</b>	1,167	1,063	1,181	1,224	1,266	1,075	1,114	1,153
<b>Hotham</b>	1,323	1,205	1,338	1,387	1,435	1,219	1,263	1,307
<b>Indi</b>	1,831	1,667	1,853	1,920	1,987	1,687	1,748	1,809
<b>Isaacs</b>	1,328	1,209	1,344	1,392	1,441	1,223	1,268	1,312
<b>Jagajaga</b>	1,186	1,080	1,200	1,243	1,286	1,092	1,132	1,171
<b>Kooyong</b>	1,475	1,343	1,492	1,546	1,600	1,359	1,408	1,457
<b>La Trobe</b>	1,402	1,277	1,419	1,470	1,522	1,292	1,339	1,386
<b>Lalor</b>	1,303	1,187	1,319	1,366	1,414	1,201	1,244	1,288
<b>Mallee</b>	2,137	1,946	2,162	2,240	2,319	1,969	2,040	2,111
<b>Maribyrnong</b>	1,181	1,075	1,195	1,238	1,281	1,088	1,128	1,167
<b>Mcewen</b>	1,774	1,615	1,795	1,860	1,924	1,634	1,693	1,752
<b>Mcmillan</b>	1,388	1,264	1,404	1,455	1,506	1,279	1,325	1,371
<b>Melbourne</b>	1,115	1,015	1,128	1,169	1,210	1,027	1,064	1,102
<b>Melbourne Ports</b>	1,198	1,091	1,212	1,256	1,299	1,104	1,143	1,183
<b>Menzies</b>	1,431	1,303	1,448	1,501	1,553	1,319	1,367	1,414
<b>Murray</b>	1,763	1,605	1,784	1,848	1,913	1,624	1,683	1,742
<b>Scullin</b>	1,182	1,076	1,196	1,239	1,283	1,089	1,128	1,168
<b>Wannon</b>	1,771	1,613	1,792	1,857	1,922	1,632	1,691	1,750
<b>Wills</b>	1,040	947	1,052	1,090	1,128	958	993	1,027

## QLD Electorates (Average consumer)

	Costs if gas prices remain at current levels		Rising gas prices 2019			Rising gas prices 2020		
	2019	2020	\$10	\$12	\$14	\$10	\$12	\$14
<b>Blair</b>	1,395	1,277	1,548	1,629	1,710	1,417	1,491	1,565
<b>Bonner</b>	1,379	1,262	1,531	1,611	1,691	1,402	1,475	1,548
<b>Bowman</b>	1,597	1,462	1,773	1,865	1,958	1,623	1,707	1,792
<b>Brisbane</b>	985	902	1,094	1,150	1,207	1,001	1,053	1,105
<b>Capricornia</b>	1,525	1,396	1,693	1,781	1,869	1,549	1,630	1,711
<b>Dawson</b>	1,610	1,474	1,788	1,881	1,974	1,637	1,722	1,807
<b>Dickson</b>	1,712	1,567	1,901	2,000	2,099	1,740	1,831	1,921
<b>Fadden</b>	1,634	1,495	1,814	1,908	2,002	1,660	1,746	1,833
<b>Fairfax</b>	1,512	1,384	1,678	1,766	1,853	1,536	1,616	1,696
<b>Fisher</b>	1,444	1,322	1,603	1,687	1,770	1,468	1,544	1,621
<b>Flynn</b>	1,541	1,411	1,711	1,800	1,889	1,566	1,648	1,729
<b>Forde</b>	1,709	1,565	1,898	1,997	2,096	1,737	1,828	1,918
<b>Griffith</b>	1,153	1,055	1,280	1,347	1,413	1,172	1,233	1,294
<b>Groom</b>	1,285	1,176	1,426	1,500	1,575	1,305	1,373	1,441
<b>Herbert</b>	1,606	1,470	1,783	1,876	1,969	1,632	1,717	1,802
<b>Hinkler</b>	1,224	1,120	1,359	1,430	1,500	1,244	1,309	1,373
<b>Kennedy</b>	1,600	1,465	1,777	1,869	1,962	1,626	1,711	1,796
<b>Leichardt</b>	1,448	1,326	1,608	1,691	1,775	1,472	1,548	1,625
<b>Lilley</b>	1,161	1,063	1,289	1,356	1,423	1,180	1,241	1,303
<b>Longman</b>	1,483	1,357	1,646	1,732	1,817	1,507	1,585	1,664
<b>Maranoa</b>	1,359	1,244	1,509	1,587	1,666	1,381	1,453	1,525
<b>Mcpherson</b>	1,525	1,396	1,693	1,781	1,870	1,550	1,631	1,711
<b>Moncrieff</b>	1,545	1,415	1,716	1,805	1,895	1,570	1,652	1,734
<b>Moreton</b>	1,387	1,270	1,540	1,620	1,700	1,409	1,483	1,556
<b>Oxley</b>	1,475	1,350	1,637	1,723	1,808	1,499	1,577	1,655
<b>Petrie</b>	1,359	1,244	1,509	1,588	1,667	1,381	1,453	1,525
<b>Rankin</b>	1,574	1,441	1,748	1,839	1,930	1,600	1,683	1,766
<b>Ryan</b>	1,295	1,185	1,438	1,513	1,588	1,316	1,385	1,453
<b>Wide Bay</b>	1,259	1,153	1,398	1,471	1,544	1,280	1,346	1,413
<b>Wright</b>	1,659	1,518	1,842	1,938	2,033	1,686	1,773	1,861

## SA Electorates (Average consumer)

	Costs if gas prices remain at current levels		Rising gas prices 2019			Rising gas prices 2020		
	2019	2020	\$10	\$12	\$14	\$10	\$12	\$14
<b>Adelaide</b>	\$1,547	\$1,399	\$1,651	\$1,734	\$1,818	\$1,494	\$1,569	\$1,645
<b>Mayo</b>	\$2,351	\$2,127	\$2,509	\$2,636	\$2,763	\$2,270	\$2,385	\$2,500
<b>Sturt</b>	\$1,702	\$1,540	\$1,817	\$1,909	\$2,001	\$1,644	\$1,727	\$1,810
<b>Boothby</b>	\$1,759	\$1,592	\$1,878	\$1,973	\$2,068	\$1,699	\$1,785	\$1,871
<b>Wakefield</b>	\$2,131	\$1,928	\$2,275	\$2,390	\$2,505	\$2,058	\$2,162	\$2,267
<b>Makin</b>	\$1,747	\$1,581	\$1,864	\$1,959	\$2,053	\$1,687	\$1,772	\$1,858
<b>Port Adelaide</b>	\$1,525	\$1,380	\$1,627	\$1,710	\$1,792	\$1,472	\$1,547	\$1,622
<b>Hindmarsh</b>	\$1,479	\$1,338	\$1,579	\$1,659	\$1,738	\$1,428	\$1,501	\$1,573
<b>Kingston</b>	\$1,681	\$1,521	\$1,794	\$1,885	\$1,975	\$1,623	\$1,705	\$1,787
<b>Grey</b>	\$1,962	\$1,775	\$2,094	\$2,200	\$2,306	\$1,894	\$1,990	\$2,086
<b>Barker</b>	\$2,208	\$1,998	\$2,357	\$2,476	\$2,596	\$2,132	\$2,240	\$2,348

## References

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<sup>1</sup> The McKell Institute 2018, *'The Cost of Inaction'*, Accessed online:

[https://mckellinstitute.org.au/app/uploads/McKell-Institute-The-Cost-of-Inaction\\_Feb18.pdf](https://mckellinstitute.org.au/app/uploads/McKell-Institute-The-Cost-of-Inaction_Feb18.pdf).

<sup>2</sup> Australian Competition and Consumer Commission, *Retail Pricing Inquiry Preliminary Report*

September 2017, Accessed online: <https://www.accc.gov.au/system/files/Gas%20Inquiry%20-%20Interim%20Report%20-%20September%202017.pdf>.

<sup>3</sup> Department of Environment and Energy, *Gas Price Trends Review 2017*, Accessed online:

[https://www.energy.gov.au/sites/g/files/net3411/f/gas\\_price\\_trends\\_review\\_2017.pdf](https://www.energy.gov.au/sites/g/files/net3411/f/gas_price_trends_review_2017.pdf).

<sup>4</sup> ACCC LNG Netback Price Series. Accessed online October 2018:

<https://www.accc.gov.au/regulated-infrastructure/energy/gas-inquiry-2017-2020/lng-netback-price-series>

<sup>5</sup> ACCC Gas Inquiry 2017-2020, *July 2018 Interim Report*, Accessed online:

<https://www.accc.gov.au/system/files/Gas%20inquiry%20July%202018%20interim%20report.pdf>

<sup>6</sup> ACCC Gas Inquiry 2017-2020, *July 2018 Interim Report*, Accessed online:

<https://www.accc.gov.au/system/files/Gas%20inquiry%20July%202018%20interim%20report.pdf>

<sup>7</sup> Australian Energy Regulator, *'State of the Energy Market'*, May 2017.

<https://www.aer.gov.au/system/files/AER%20State%20of%20the%20energy%20market%202017%20-%20A4.pdf>.

<sup>8</sup> Department of Environment and Energy, *Gas Price Trends Review 2017*, Accessed online:

[https://www.energy.gov.au/sites/g/files/net3411/f/gas\\_price\\_trends\\_review\\_2017.pdf](https://www.energy.gov.au/sites/g/files/net3411/f/gas_price_trends_review_2017.pdf).

<sup>9</sup> .Department of Environment and Energy, *Gas Price Trends Review 2017*, Accessed online:

[https://www.energy.gov.au/sites/g/files/net3411/f/gas\\_price\\_trends\\_review\\_2017.pdf](https://www.energy.gov.au/sites/g/files/net3411/f/gas_price_trends_review_2017.pdf).

<sup>10</sup> AEMC, *2017 Residential Electricity Price Trends*, Accessed online:

<https://www.aemc.gov.au/sites/default/files/content/bf56a5d5-e2b2-4c21-90ed-79dda97eb8a4/2017-Residential-Electricity-Price-Trends.pdf>.

<sup>11</sup> AEMC, *2017 Residential Electricity Price Trends*, Page 2, Accessed online:

<https://www.aemc.gov.au/sites/default/files/content/bf56a5d5-e2b2-4c21-90ed-79dda97eb8a4/2017-Residential-Electricity-Price-Trends.pdf>.

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<sup>12</sup> ACCC Gas Inquiry 2017-2020, *July 2018 Interim Report*, Accessed online:

<https://www.accc.gov.au/system/files/Gas%20inquiry%20July%202018%20interim%20report.pdf>

<sup>13</sup> ACCC, *Retail Pricing Inquiry Preliminary Report* September 2017, Accessed online:

<https://www.accc.gov.au/system/files/Gas%20Inquiry%20-%20Interim%20Report%20-%20September%202017.pdf>.

<sup>14</sup> AEMC, *2017 Residential Electricity Price Trends*, Accessed online:

<https://www.aemc.gov.au/sites/default/files/content/bf56a5d5-e2b2-4c21-90ed-79dda97eb8a4/2017-Residential-Electricity-Price-Trends.pdf>.

<sup>15</sup> AEMC, *2017 Residential Electricity Price Trends*, Accessed online:

<https://www.aemc.gov.au/sites/default/files/content/bf56a5d5-e2b2-4c21-90ed-79dda97eb8a4/2017-Residential-Electricity-Price-Trends.pdf>

<sup>16</sup> ACCC Gas Inquiry 2017-2020, *July 2018 Interim Report*, Accessed online:

<https://www.accc.gov.au/system/files/Gas%20inquiry%20July%202018%20interim%20report.pdf>

<sup>17</sup> Business Insider, Accessed online: <https://www.businessinsider.com.au/agl-profit-results-2018-8>

<sup>18</sup> The Australian Financial Review, 'Santos CEOs stark warning on east coast as price controls',

Accessed online: <https://www.afr.com/business/energy/gas/santos-ceos-stark-warning-on-east-coast-gas-price-controls-20180903-h14vpe>.