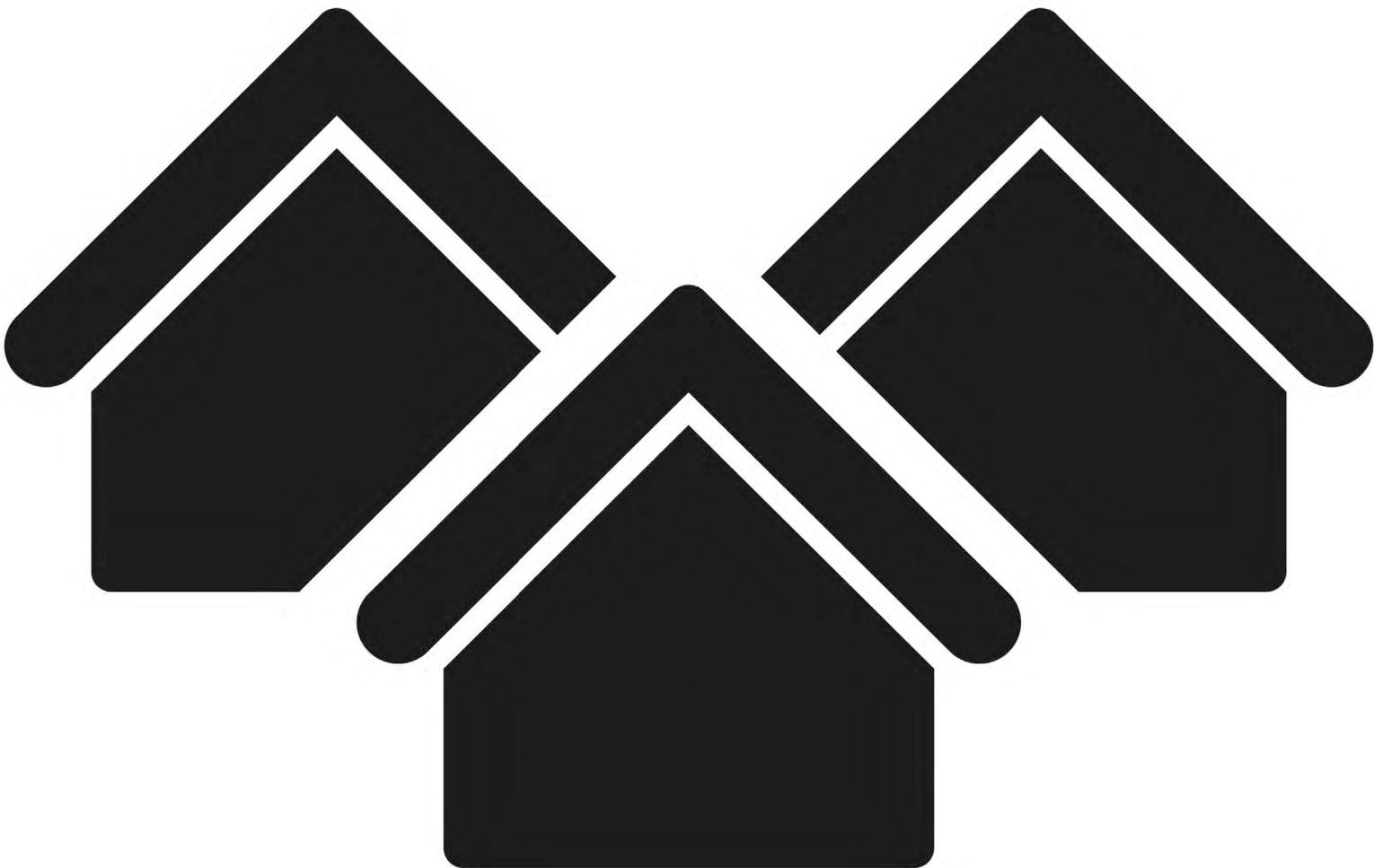


Households in the dark

Mapping electricity disconnections in South Australia, Victoria, New South Wales and South East Queensland



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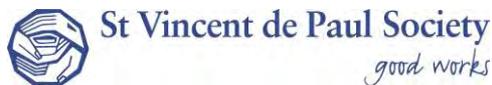
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Households in the dark

Mapping electricity disconnections in South Australia, Victoria, New South Wales and South East Queensland

Report by the St Vincent de Paul Society and Alviss Consulting | May 2016

St Vincent de Paul Society
www.vinnies.org.au



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We also wish to acknowledge the substantial in-kind contribution provided by AGL in terms of compiling and anonymising the data set, assisting with data queries and broader system information, as well as discussing findings and providing invaluable feedback. AGL has participated in this project to assist the development of public policy and build greater understanding of energy affordability issues.

We note that while we have discussed findings with AGL and welcomed their feedback, AGL has not influenced the research questions or had any editorial input into this report.

Finally, we wish to thank the Energy Network Association (ENA) for their great effort in sourcing data from the electricity distribution businesses. While we did not obtain a distribution data set that was geographically broad enough to be used in this study, we are grateful for the ENA's support of this project and the time the relevant distribution businesses provided to compile the data.

Executive Summary and Recommendations

This project has analysed and mapped approximately 200,000 electricity disconnections for non-payment raised by AGL in South Australia, Victoria, NSW and South East Queensland between July 2012 and July 2015.

As the purpose of this project was to explore when, where and why households are disconnected from electricity, rather than a single retailer's disconnection practices, the data set has been normalised based on AGL's market share. This study therefore shows when, where and why households are disconnected if all retailers disconnect at similar rates to AGL. Furthermore, in analysing the postcodes with the highest disconnection numbers, we have normalised the data based on the postcodes' population size.

While electricity disconnections occur in most postcodes, there are significant differences between the frequencies of disconnection between postcodes. Furthermore, there are significant inter-state differences in terms of the type and location of postcodes that have high disconnection numbers.

We have identified 6 broad categories of postcode types that are likely to have higher disconnection numbers. These are postcodes that have a higher proportion of:

1. Low income families experiencing housing stress
2. Median income families experiencing housing stress
3. Low to median income families with lower housing costs but greater transport costs
4. Low income small households (couples, sole persons and sole parents) experiencing housing stress
5. Small households with median income experiencing housing stress
6. Small households with low to median income with lower housing costs but greater transport costs

By allocating the 'top 50' disconnection postcodes in each jurisdiction to one of these groups, we were able to identify interstate differences in terms of where, and who, are most at risk of disconnection.

The South Australian postcodes with high disconnection numbers were predominantly group 1, 2, 4 and 6 postcodes. This means that families experiencing housing stress as well as smaller households (couples, sole persons and sole parents) either experiencing housing stress or located in rural and regional South Australia (where housing is less expensive but transport costs are higher and incomes are lower) are the groups that experience the highest disconnection levels in this state.

In Victoria, the 'top 50' postcodes were distributed more evenly across all six postcode types. Group 3 was the only group that was somewhat less predominant in this state.

In NSW, however, 33 out of 50 postcodes are group 3 or 6 postcodes, meaning that families as well as smaller households located in rural and regional NSW experience the highest disconnection levels. This does not mean that low income families experiencing housing

stress in Sydney are not at risk of disconnections, it simply tells us that when it comes to the location of the postcodes with the highest disconnection numbers in NSW, low income households outside Sydney have higher disconnection rates. This could be a sign of more entrenched poverty in NSW compared to the other jurisdictions included in this analysis.

In the smaller and more densely populated area of South East Queensland, on the other hand, postcodes with high disconnection numbers were predominantly group 1, 2 and 4 postcodes. This means that families experiencing housing stress as well as low income smaller households (couples, sole persons and sole parents) experiencing housing stress, are at highest risk of disconnection in South East Queensland.

That said, all jurisdictions did have 'top 50' postcodes in all six groups but it shows that the most dominant groups differ between jurisdictions.

This report has also examined postcodes where a high number of households (based on customer number) have been disconnected multiple times over the three year period. Victorian and NSW postcodes dominate this list and in Victoria there appears to be a strong link between the roll out of smart meters (which enable disconnections to be done remotely instead of on a site visit) and an increase in the disconnection completion rate, and therefore also an increase in households being disconnected multiple times over a three year period.

Surprisingly, we were not able to detect strong links between higher bills and disconnection numbers. Apart from in South East Queensland, where disconnections appear to have increased in response to significant price increases, the evidence in the other jurisdictions is inconclusive. Residential electricity prices increased significantly in 2011 and 2012 in NSW, Victoria and South Australia, since then, however, the increases have been more moderate as well as included some decreases.¹ This may explain why we are unable to detect a clear relation between price increases and disconnections based on price changes occurring between January 2013 and July 2015.

Our hypothesis is still that higher bills due to price increases and/or consumption will increase the number of customers experiencing energy related financial hardship and ultimately disconnections. Data showing when and where disconnections occur, however, is not best suited to test this hypothesis. There are too many factors influencing when disconnections occur (including retail practices, distributor practices and regulatory requirements) to be able to establish a clear and consistent relationship between price changes and disconnections.

While this study shows that communities with a high degree of social disadvantage are more likely to have high disconnection numbers, it also highlights that there are households at high risk of experiencing disconnection in areas with a high level of social advantage.

¹ The St Vincent de Paul Society has analysed price changes in all NEM jurisdictions from 2009 to 2015 through its ongoing Tariff-Tracking project. See www.vinnies.org.au/energy for more information about the Tariff-Tracking project and changes to residential energy prices. Both South Australia (in 2013) and NSW (in 2014) introduced lower transitional rates in relation to the introduction of retail price regulation and all jurisdictions experienced price deductions due to the repeal of the carbon tax.

While the aim would always be that no households get disconnected from electricity due to an inability to pay, we acknowledge that assistance and measures to reduce the number of disconnections occurring need to be better targeted in order to reach households most at risk, as well as those most at risk of on-going financial hardship and multiple disconnections.

Our recommendations are thus directed at energy policy makers and energy regulators at both state and Commonwealth level, as well as social policy measures that address the underlying poverty that is a major cause of disconnection.

Recommendations

1. Recommendations directed at state governments

1.1 Concession arrangements

The governments in South Australian, NSW and Queensland should introduce percentage based electricity concessions. This will provide proportional support based on the electricity costs faced by consumers.

With the increasing take up of solar, batteries and other energy management technologies a move to percentage-based concessions is crucial to ensure that concessions are based on the actual bill paid.

The Queensland Government should extend eligibility for energy concessions to Health Care Card (HCC) holders.

1.2 Relief schemes

The Victorian Government should simplify the application and approval process of the Utility Relief Grant (URG) scheme. The scheme currently has a slow and burdensome application process and improving this process is crucial to lower disconnection rates in Victoria.

The NSW Government should immediately review its Energy Accounts Payment Assistance (EAPA) scheme. Relying on delivery of EAPA vouchers through community welfare agencies limits the scheme's coverage and more assistance in rural and regional NSW is clearly needed to reduce disconnection numbers in these communities.

1.3 State operated energy savings programs

The governments in South Australian, NSW, Victoria and Queensland should target their energy efficiency programs to areas that need assistance with energy bills. These programs should in part focus on postcodes with larger households (i.e. high consumption families) and high disconnection numbers.

1.4 Energy efficiency standards

State governments should develop and require minimum energy efficiency standards for all public and private rental properties.

1.5 State government funded and/or delivered education programs

The governments in South Australian, NSW, Victoria and Queensland should ensure that education programs adequately inform households about concession arrangements, access to energy retailer hardship programs, relief schemes and other relevant support measures.

This is particularly important in areas with a high proportion of smart meters as remote disconnections clearly impact on disconnection completion rates and the frequency with which households experience multiple disconnections.

Education programs should also target disadvantaged communities to enable households to actively and confidently participate in the energy retail market (including being able to shop around for a better deal).

2. Recommendations directed at the Commonwealth Government

2.1 Income security

Energy policy and regulatory measures alone cannot prevent households from being disconnected. Increased social security payments are necessary to help households out of poverty. A large proportion of the postcodes with high disconnection numbers are areas with younger households, including young couple families and sole parents. We urge the Government to increase income support payments such as Newstart and the Youth Allowance.

2.2 Energy efficiency and renewable energy policies

The Commonwealth Government should use their energy efficiency and renewable energy policies to assist communities with high disconnection numbers reduce their energy costs.

2.3 Carbon emission reduction policies

In developing policies to reduce carbon emissions the Commonwealth Government should assess the impact these policies will have on households in areas with high disconnection numbers, and develop appropriate compensation measures as required.

3. Recommendations directed at regulators with responsibilities in the energy retail market

3.1 Monitoring and reporting

Energy regulators should collect information and report on customer numbers disconnected multiple times by the same retailer.

3.2 Improvements to the National Energy Customer Framework (NECF)

The NECF should be amended to ensure that retailers must offer payment arrangements to all households rather than just those the retailer has assessed to be in financial hardship.

3.3 Disadvantaged customers in the 'new' energy market

The market led roll out of smart meters will increase the completion rate of disconnections and result in more customers being more frequently disconnected. In order to provide retailers, as well as meter data service providers, with a strong incentive to follow due processes prior to disconnecting customers, the NECF should be amended to include a Wrongful Disconnection Payment that market participants, found not to have followed the required processes, are obliged pay the affected customer.

4. Recommendations directed at energy retailers and local governments

4.1 Develop local outreach programs

These programs should be developed to reach households in areas with a high level of multiple disconnections. Retailers and/or local councils should initiate outreach programs to effectively reach and assist these communities ensuring they are aware of available support.

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1. Introduction and methodology

In 2012/13 the electricity disconnection rate for residential customers in NSW, South Australia, Queensland and Victoria was between 1 and 1.5 per 100 customers.² This rate may appear low but a disconnection rate of 1.47 in Victoria, for example, means that over 34,000 households were disconnected from supply due to non-payment that year.

Being disconnected from an essential service can cause significant social harm. A 2013 report by the Public Interest Advocacy Centre (PIAC) in NSW found that:

“Disconnection was disruptive to households, with a range of strategies deployed to cope with the situation, including using candles or lanterns, having cold showers/baths, and buying takeaway/prepared food. Those living in public housing were significantly more likely than others to take several courses of action to deal with the disconnection.

A range of impacts resulted from disconnection, most commonly anxiety and emotional disorders, loss of food and an inability to wash. These impacts were compounded the longer the disconnection.”³

Because of the severity of the impacts, it is commonly acknowledged that disconnection for non-payment should be a last resort measure.⁴

The National Energy Customer Framework (NECF), that currently covers retailers operating in NSW, South Australia and Queensland, and the Victorian Energy Retail Code (ERC), contain requirements for retailers to minimise hardship and disconnections for non-payment. The National Energy Retail Rules (NERR) and the Victorian ERC stipulate:

- Days that a disconnection cannot take place (the protected period), including days between 20 December and 31 December every year and Fridays or any day before a public holiday
- Requirements for retailers to issue reminder notices and disconnection warning notices, as well as the particular content to be included in these notices
- Requirements for retailers to use their best endeavours to contact the customer prior to disconnection

The NERR and the ERC also include special provisions for customers that are deemed hardship customers or customers that that have informed the retailer that they are experiencing payment difficulties. These customers cannot be disconnected unless they have been offered two payment plans in the previous 12 months.

² The 2013/14 disconnection rate was 1.47 in Victoria, 1.03 in NSW, 1.37 in South Australia and approximately 1.31 in Queensland. See ESC, *Energy Retailers Comparative Performance Report – Customer Service, 2013-14*, December 2014, Table 4.2

³ PIAC, *Cut Off III, The Social Impact of Utility Disconnection*, Final Report, April 2013, ii

⁴ See for example, ESC, *Energy Retailers Comparative Performance Report – Customer Service, 2013-14*, December 2014, 25 and AER, *Annual Report on the Performance of the Retail Energy Market 2014-15*, 32

There are also requirements for the retailers to establish and offer hardship programs. In Victoria, a retailer that is found to have wrongfully disconnected a customer has to pay the customer a set amount for each day they were without supply.

1.1 Recent developments and the purpose of this project

When there is an increase in electricity disconnections the response by politicians is often to review regulatory requirements and retailers' performance. In Victoria, the ESC has just released its final report from an Energy Hardship Inquiry that it was requested by the Victorian Government to undertake.⁵ When the ESC reported in February 2015 that more Victorian electricity customers were being disconnected than before, the Energy Minister announced the inquiry:

"Our inquiry, our review, will get to the bottom of the reasons for the disconnections, but also importantly will look at what the energy retailers are actually doing in terms of their policies for identifying financial hardship amongst their customers early enough so they can offer assistance".⁶

When the scope of the inquiry became clear, however, the focus was very much limited to the regulation, retailers' obligations and retailers' performance. As the ESC report states:

"The inquiry focuses on how energy retailers support customers experiencing difficulty paying their energy bills. Specifically, it examines how the regulatory framework operates in practice.

Investigating the broader socio-economic causes of financial difficulty is beyond the scope of the inquiry. Rather, the inquiry examines how energy retailers account for the financial circumstances of individual customers when assisting customers experiencing payment difficulties."⁷

The Australian Energy Regulator (AER), which is the responsible regulator in NSW, South Australia and Queensland, also issued compliance checks into the retailers' disconnection practices in March and April 2015.⁸ These checks were prompted by a regulatory concern over a high number of disconnections being raised without complying with the National Energy Retail Rules (NERR).⁹

The AER is also currently undertaking a consultation to develop a Sustainable Payment Plans Framework with the aim of enhancing retailers' ability to assess customers' capacity to

⁵ ESC, *Supporting Customers, Avoiding Labels*. Energy Hardship Inquiry, Final Report, February 2016

⁶ Victorian Energy Minister, Lily D'Ambrosio quoted in *The Age*, *Soaring power costs leads to record number of disconnections in Victoria*, Jason Dowling and Aisha Dow, February 18, 2015 at <http://www.theage.com.au/victoria/soaring-power-costs-leads-to-record-number-of-disconnections-in-victoria-20150218-13i4lt.html>

⁷ ESC, *Supporting Customers, Avoiding Labels*. Energy Hardship Inquiry, Final Report, February 2016, 1

⁸ Compliance checks are periodically used by the AER to highlight relevant obligations and to emphasise the importance of effective compliance processes and systems for the broader industry.

⁹ AER, Compliance Check, *National Energy Retail Rules: retailers arranging de-energisation*, March 2015 and AER, Compliance Check, *National Energy Retail Rules: retailer-initiated de-energisation*, April 2015

pay.¹⁰ Under the NERR retailers are required to offer customers contacting their retailer about payment issues a payment plan and in establishing such plans, the retailer is required to have regard to customers' capacity to pay.

In Victoria, the ESC released its final report into the Energy Hardship Inquiry in February 2016 and has undertaken to implement a new framework that will codify how retailers are expected to support customers with payment difficulties, require retailers to assess the type of payment difficulty the customer is facing rather than the cause of payment difficulty as well as new obligations on retailers and changes to the reporting framework.¹¹

While we believe regulation, retailer obligations and retail practices are all important measures to limit the number of households that get disconnected from electricity due to an inability to pay, we also think it is too narrow to merely focus on these aspects in order to actually ensure that energy hardship and disconnections are minimised. Disconnections often have detrimental impact on households and we certainly agree with the sentiment of the Energy Minister's statement that:¹²

“We don't want a community, we don't want a society that continues to sit by and see disconnections, increase”.¹³

However, we also believe that we need to understand the broader context for why energy hardship and disconnections occur. To complement, rather than duplicate, inquiries undertaken by regulators, we therefore decided to map disconnections independently of retailer behaviour and regulations. This study examines when, where, who and why disconnections occur across South Australia, Victoria, NSW and South East Queensland.

1.2 Methodology

In order to obtain data for this study, we approached the Energy Network Association (ENA) and AGL for assistance. As AGL is a major retailer with customers in most National Electricity Market (NEM) jurisdictions, the aim was to analyse their data and compare it the distributors' data in order to estimate a discrepancy ratio that would allow us to undertake analysis based on distributor data only in the future. While the ENA was very supportive of this project and liaised with the distribution businesses in order to obtain data, the timing of the project meant that we were competing with more pressing issues for the distributors and we were unable to obtain distributor data for disconnections in NSW and South Australia. Not having distributor data for two out of four jurisdictions resulted in us being unable to determine a meaningful and reliable discrepancy rate between distributor data

¹⁰ See <https://www.aer.gov.au/retail-markets/retail-guidelines/aer-sustainable-payment-plans-framework/draft-decision>

¹¹ See ESC, *Supporting Customers, Avoiding Labels*. Energy Hardship Inquiry, Final Report, February 2016

¹² See, for example, PIAC, *Cut Off III, The Social Impact of Utility Disconnection*, Final Report, April 2013

¹³ Victorian Energy Minister, Lily D'Ambrosio quoted in *The Age*, *Soaring power costs leads to record number of disconnections in Victoria*, Jason Dowling and Aisha Dow, February 18, 2015 at <http://www.theage.com.au/victoria/soaring-power-costs-leads-to-record-number-of-disconnections-in-victoria-20150218-13i4lt.html>

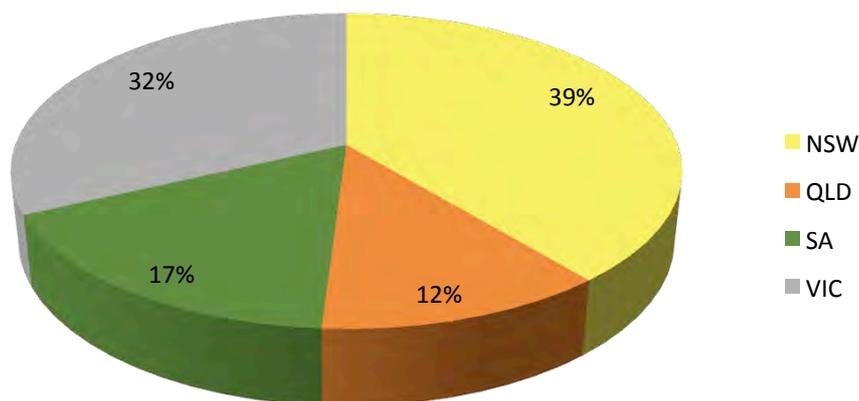
and retail data to measure future disconnection for non-payment rates based on distributor data only.¹⁴ We therefore decided to proceed with the project based on AGL's data alone.

We received a dataset from AGL that contained a total of 199,704 disconnections raised due to non-payment from 1 July 2012 to 30 June 2015, covering the states of NSW, South Australia, Victoria and Queensland (South East Queensland only).¹⁵ The aim, however, has not been to analyse AGL's disconnections per se. Rather, we have sought to ensure that the sample size is large enough to shed light on when, where and why disconnections occur in general.

1.2.1 The retail dataset and data normalisation

39% (or 78,071) of the disconnections were raised in NSW, 32% (or 63,600) were in Victoria, 17% (or 34,680) were in South Australia and 12% (or 23,353) were in South East Queensland (Energex' network area).

Chart 1 Proportions of disconnections raised in dataset (AGL) per jurisdiction



While we acknowledge that it is not ideal to rely on the data provided by a single retailer when the aim is to analyse disconnections in general, we have tested the data and believe it is representative as a sample for all customers after normalising the data for AGL market share in each network area. This aspect is particularly important because AGL is the incumbent retailer in some network areas, and incumbents tend to have more customers in their host areas compared to other areas as well as more standing offer customers in these 'patches' compared to others. The dataset did not distinguish between standing offer and market offer customers, so we do not know whether a higher proportion of standing offer customers compared to market offer customers get disconnected (relative to the number of

¹⁴ The purpose of this exercise was to develop a methodology that could be used for future mapping of disconnections without having to obtain retailer data. Retail data can be more difficult to obtain than distributor data due to commercial concerns and confidentiality issues.

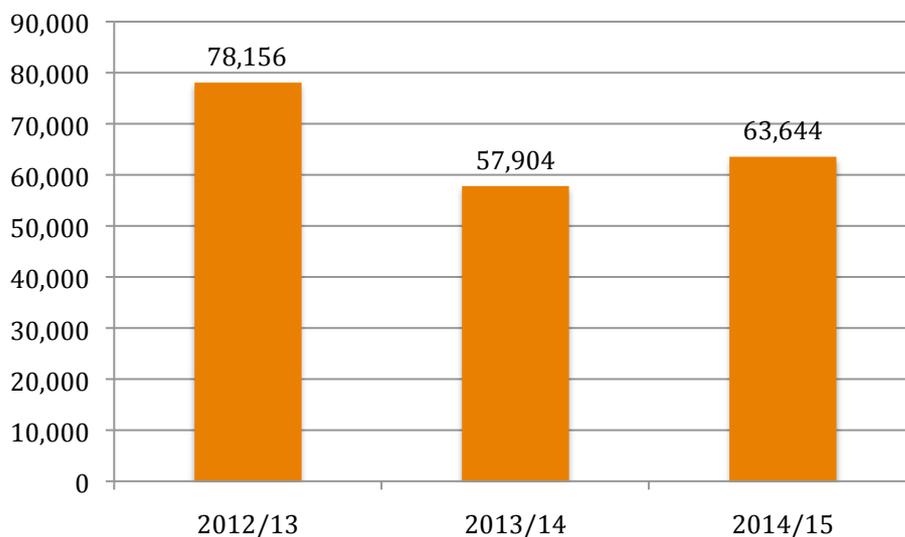
¹⁵ As there is no retail competition in northern Queensland (the Ergon network), AGL does not have Queensland customers outside South East Queensland (SEQ).

customers on each contract type), but it is reasonable to assume that some standing offer customers find it difficult to switch to a different retailer due to debt or credit rating issues.

We stress, however, that the dataset has been normalised based on market share only. For these disconnection rates to be true, every retailer would need to disconnect as often or as seldom as AGL and this assumption would be wrong if the aim was to report on the total number of disconnections. This is not the aim of this project. Regulators can more accurately report on disconnection numbers, and they do, so to complement their analyses we are investigating where high numbers of disconnections occur, i.e. what postcodes have the greatest disconnection rates and why? We also look at when disconnections occur, but it is again meant to show times when disconnections are relatively high compared to other times, not to show how many disconnections occurred in, for example, June 2014.

Out of the total 199,704 disconnections raised in the dataset, 39% were raised in the 2012/13 financial year, 29% in 2013/14 and 32% in 2014/15.

Chart 2 Dataset (AGL) disconnections raised in each year



As this is obviously different from the trend reported by the ESC in Victoria, we compared the Victorian part of the dataset to the ESC numbers. The number of total AGL electricity disconnections in Victoria in our dataset was very close to the numbers ESC has reported that AGL disconnected in both 2012/13 and 2013/14.¹⁶ We also compared AGL's disconnection rate per 100 customers in our dataset (based on monthly customer numbers provided by AGL) and found that our disconnection rate was similar to that reported by the ESC, based on our count of total completed disconnections for each year divided by AGL's annual average customer numbers in Victoria. Our dataset also shows that AGL

¹⁶ ESC, *Energy Retailers Comparative Performance Report – Customer Service, 2013-14*, December 2014, Table 4.3, 29. 2014/15 data is not yet available. By stating that the numbers are very close we acknowledge that there is not an exact match but the difference can be explained by whether the date used is the date the service order for disconnection was created, the date the disconnection was scheduled or the basis date. The difference between these dates means that some disconnections that have been reported to the ESC as 2012/13 disconnections may have been counted as 2013/14 disconnections in our data processing and vice versa. Our data process used the basis date.

disconnected fewer customers in 2013/14 than they did in 2012/13. This is consistent with the ESC’s reporting showing that while the overall disconnection rate (across all retailers) increased in 2013/14, AGL’s actually decreased.¹⁷

When we normalised the AGL data based on AGL’s customer numbers and assumed total customer numbers, however, our total disconnection rate was greater than that reported by the ESC. That can be partly explained by AGL having a greater disconnection rate (number of disconnections per 100 customers) than the state total.¹⁸ This means that our basic assumption that all retailers act like AGL, and thus have the same disconnection rate, over estimates the number of disconnections. Another potential explanation is that our residential customer numbers for each network area are too high, resulting in us under estimating AGL’s market share. As NSW and Victoria have several network areas, AGL provided us with a breakdown of their residential customers for each (as a percentage) as of 2015, as well as their total residential customer numbers in each jurisdiction (not network area) for each of the three years. We thus distributed total AGL customer numbers for each jurisdiction for each year according to AGL’s 2015 split between networks.¹⁹ In order to calculate AGL’s market share in each network area we used the residential customer numbers outlined in table 1.

Table 1 Residential customers by network area²⁰

Network	Number of residential customers
AusGrid	1,463,205
Endeavour	830,657
Essential	715,400
AusNet Services	611,406
Jemena	285,834
Powercor	658,280
Citipower	271,323
United Energy	591,489
SAPN	749,228
Energex	1,251,769
Total	7,428,591

¹⁷ Ibid

¹⁸ Ibid

¹⁹ For example, if AGL reported that they had 1,200,000 residential customers in NSW in 2012/13 and that 60% of these were in Essential Energy’s network while AusGrid and Endeavour had 20% each, our calculation would have been that AGL had 720,000 residential customers in Essential and 240,000 in AusGrid and Endeavour in 2012/13. Note: This example is not based on the real numbers.

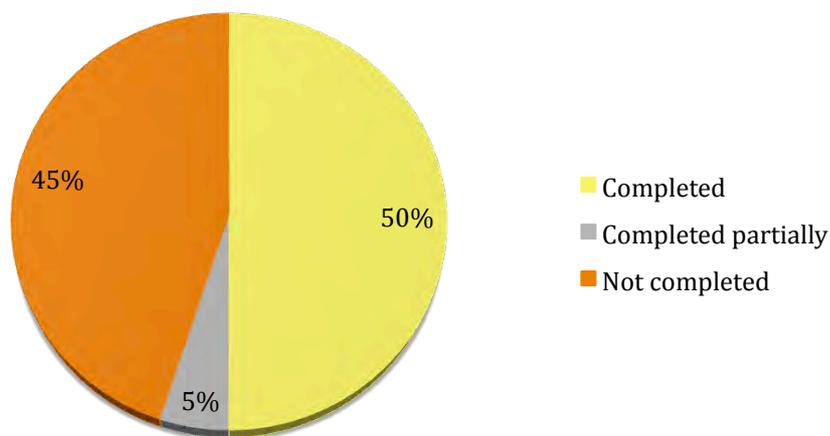
²⁰ These customer numbers are based on the distribution businesses’ Regulatory Information Notices (RIN) to the AER in 2013/14. The figures are included in the ‘Economic Benchmarking RIN –Templates’ workbooks.

1.2.2 Disconnections raised vs. completed

When a retailer has decided to disconnect a customer for non-payment it raises a service order with the relevant network business, which, in return for an agreed service fee, carries out with the disconnection on the retailer's behalf. However, not all disconnections raised result in a completed disconnection.

Out of the nearly 200,000 disconnections raised by the retailer, the relevant networks completed 50% of these service orders while 45% were not completed and 5% were partly completed.²¹

Chart 3 Service order status of disconnections in dataset (AGL)

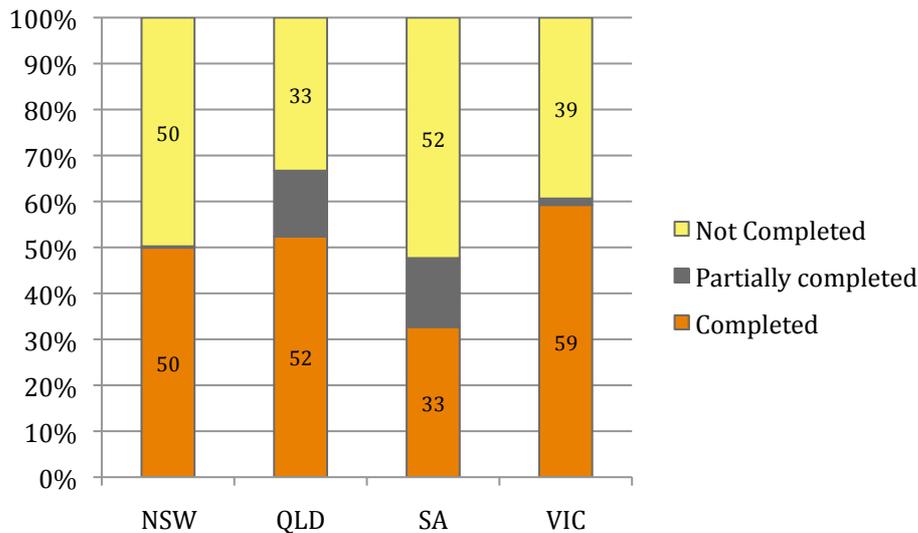


The completion rate varies between the jurisdictions. In Victoria 59% of all disconnections raised were completed, in Queensland and NSW the completion rates were 52% and 50% respectively. In South Australia, however, the completion rate was 33%. That said, South Australia had a high proportion of partially completed, meaning that partially completed and completed disconnections combined results in a similar completion rate to NSW (50%).

Chart 4 below shows the proportion of completed, not completed and partially completed out of the total number of disconnections raised in each of the four states.

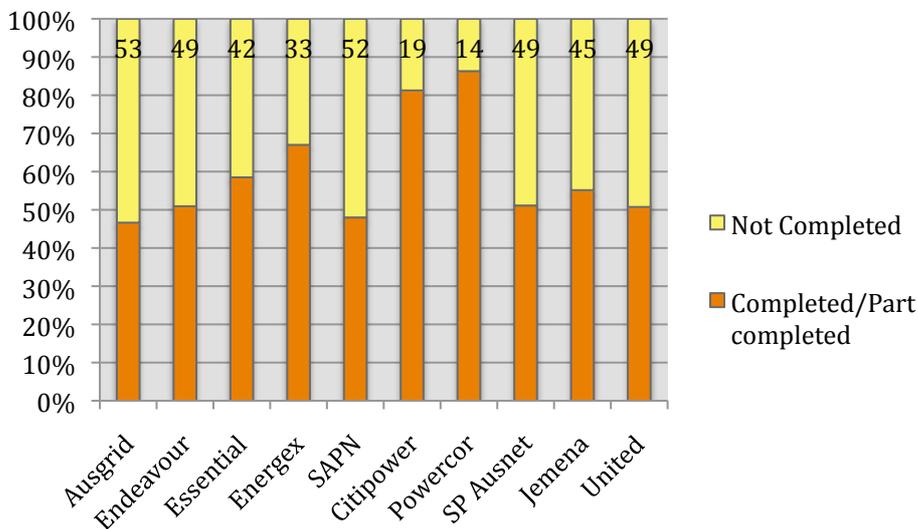
²¹ It is our understanding that a partially completed disconnection means that the household has been de-energised and from a customer perspective, a partially completed disconnection is the same as being disconnected from supply.

Chart 4 Proportion of completed, partially completed and not completed disconnections by jurisdiction based on dataset (AGL)



There are also significant differences between networks. In Victoria’s Powercor and Citipower networks, for example, only 14 – 19% of disconnections raised were not completed. That is a significantly higher completion rate than Ausgrid (53% uncompleted), SAPN (52%), and the 49% in Endeavour, Ausnet Services and United Energy’s areas.

Chart 5 Proportion of completed/partially completed and not completed disconnections by network based on dataset (AGL)



There are a few factors that contribute to the difference in completion rates. Firstly, high penetration of smart meters within a network is likely to increase the completion rate as disconnections occur remotely. Secondly, large networks with a sprawling customer base may result in lower completion rates due to the distance to and remoteness of the customers. Third, and finally, we would assume that there are differences in operational

practices within the various network businesses. It is, however, important to consider completion rates when analysing disconnection data as disconnections raised more accurately shows where and when customers are experiencing energy related financial hardship than disconnections completed. That is, the financial stress experienced by the household is not less because the network failed to carry out the service order or because their meter is an accumulation meter that requires a site visit. Conversely, if the main aim is to identify where and when households actually experience disconnections, then the focus needs to be on completed and partially completed disconnections.

Higher completion rates over time can also be interpreted as an increase in disconnections raised, either because more households are experiencing financial hardship or because the retailers are more readily disconnecting households for non-payment. If a network has just completed a roll out of smart meters, however, an increase in disconnections may simply be due to more efficiently completed service orders by the networks. In Victoria, for example, we found that 53% of the not completed disconnections occurred in 2012/13, 27% in 2013/14 and only 20% of them occurred in 2014/15. This indicates that the smart meters have had a significant impact on the Victorian completion rates.

1.3 When, where who and why

In terms of analysing “when” disconnections occur we have sought to examine when during the year disconnection numbers are the greatest as well as whether disconnections increase:

- After significant bill increases (typically driven by regulatory price-resets)
- After weather events resulting in heating degree days (HDDs) or cooling degree days (CDDs)
- After the summer period in areas where cooling needs are high
- After the winter period in areas where heating needs are high

Furthermore, as our dataset contains disconnections over a three year period we also aimed to test whether disconnection rates had increased or decreased significantly over the period. While our assumption has been that there will be difficult to detect changes due to factors such as gentrification or local changes to employment opportunities over a three year period, we did examine whether there are substantial year on year increases or decreases within postcodes over this period.

For the ‘when’ analysis in section 2, we have used AGL data as well as AGL data normalised for market share.

In the ‘where’ analysis (section 3) we have mapped the disconnection data (normalised for market share) to explore where high numbers of disconnections occur. This analysis shows whether there are urban, regional or rural ‘hot spots’ and whether there are differences between the jurisdictions. This analysis also examines where there is a higher proportion of customers that have been disconnected multiple times over the three year period.

The 2015 Dropping off the edge (DOTE) study undertaken by the Jesuit Social Services and Catholic Social Services Australia analyses disadvantage in Australia by postcodes.²² The study scores and ranks postcodes disadvantage based on various variables such as housing stress, long term unemployment and disability support. We would therefore expect to see some of the most disadvantaged postcodes amongst the postcodes with the highest disconnection numbers. That said, energy hardship and disconnections are not limited to the most disadvantaged postcodes. Various cost pressures and bill priority issues also impact on where disconnections occur.²³ The most disadvantaged postcodes are likely to have a lot of households with persistent, long term financial hardship, households that get disconnected however, may also include households in temporary or fluctuating financial hardship.²⁴ Households experiencing different types of energy related financial hardship are also likely to typically live in different postcodes. A key assumption we explore was therefore that postcodes with high disconnection rates are not all similar postcodes or always postcodes associated with significant disadvantage. This is the ‘who’ and ‘why’ aspects of this study (section 4).

In this section we have normalised the data relative to number of households in each postcode and examined the 200 postcodes (50 for each jurisdiction) with the highest disconnection numbers using ABS census data. Another assumption that we have tested is whether the jurisdictions have a similar mix of postcode types/characteristics. We have therefore examined whether there are similarities and/or differences between the types of postcodes that have high disconnection numbers in the four jurisdictions based on six household groups that reflect different income/expenditure mix. These groups are:

1. Low income families experiencing housing stress
2. Median income families experiencing housing stress
3. Low to median income families with lower housing costs but greater transport costs
4. Low income small households (couples, sole persons and sole parents) experiencing housing stress
5. Small households with median income experiencing housing stress
6. Small households with low to median income with lower housing costs but greater transport costs

²² See <http://www.dote.org.au>

²³ See section 4 of this report.

²⁴ The ESC’s Energy Hardship Inquiry discussed customer categories in terms of temporary, fluctuating and persistent financial hardship.

2. When

This first part of the analysis examines when disconnections occur. It looks at what time of year has the highest disconnection numbers as well as potential links between price increases and disconnections, as well as weather driven consumption causing higher bills and disconnections.

We also examined whether the number of disconnections within individual postcodes had changed over the three year period. That is, whether there are clear year on year increases or decreases to disconnection numbers in some postcodes. While we found changes to disconnection levels over the three year period in some postcodes, we decided that a three year period is insufficient to detect on-going changes to disconnections within an area as there were no clear trends amongst otherwise similar areas.

2.1 Time of year

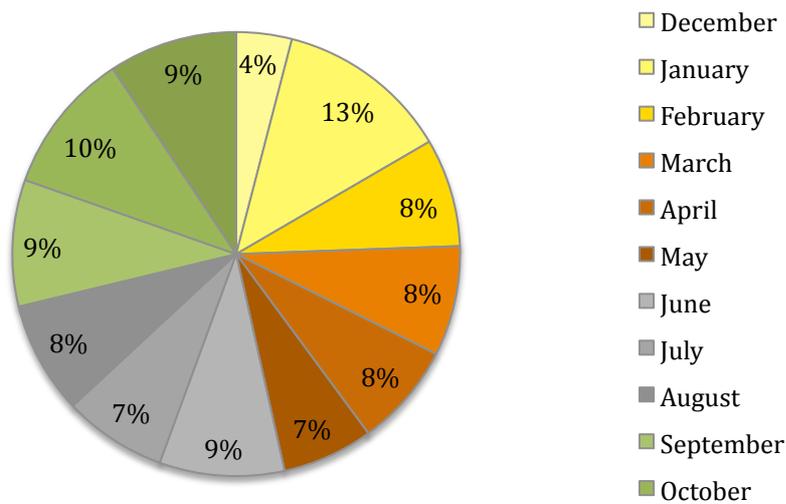
January is the month with the highest number of disconnections being raised while December has the fewest. Out of the total number of disconnections raised (completed, not completed and partially completed) over the three year period, 24,982 occurred in January.

Table 2 Disconnections (AGL) raised by month

Month	Number of disconnections raised
January	24,982
February	15,676
March	15,939
April	14,975
May	13,109
June	17,960
July	14,880
August	16,286
September	18,347
October	20,512
November	18,499
December	8,539
Total	199,704

Spring is the season most disconnections occur. 28% of the total number of disconnections occurred in September (9%), October (10%) and November (9%).

Chart 6 Disconnections (AGL) raised by season



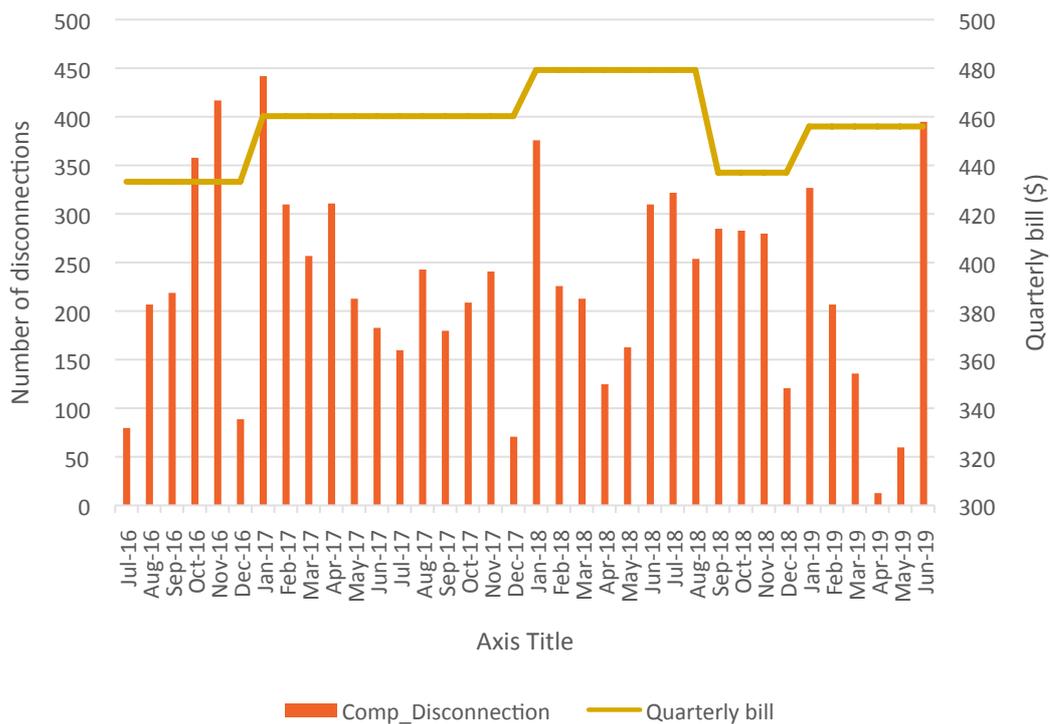
January is typically regarded as a difficult time financially for many families. Costs associated with Christmas, and the holiday season more generally, as well as costs relating to the start of the new school year may place severe constraints on the household budget by mid to late January. However, it is not just these factors that make January the month with the highest number of disconnections. Section 2.2 below explores other factors that impact on when households get disconnected.

2.2 Price changes and disconnections

As our hypothesis was that there will be an increase in disconnections for non-payment in response to price increases, we were surprised by the lack of a clear link between price increases and disconnection numbers in the dataset.

Chart 7 below, for example, shows AGL’s disconnection numbers in the Jemena distribution area as well as quarterly electricity bills for a dual fuel household with typical electricity consumption. If this chart shows anything, it shows that disconnection numbers decrease after bill increases. Clearly, there is no logical reason for disconnection numbers to decrease in response to higher bills so this may reflect limitations to the dataset or suggest different interpretation is required.

Chart 7 Completed disconnections (AGL) and quarterly standing offer bills for households with typical consumption levels (4,800kWh) in the Jemena network



Charts 8-10 below show estimated completed disconnections by each month for the Victorian network areas of Citipower, Jemena and Powercor. The filled columns are months when significant price increases took effect (July 2012, January 2013 and January 2014). The charts show, however, that disconnections only increased after the July 2012 price increase while the number of disconnections decreased after the two other price increases. We also note that due to the high penetration of gas in Victoria, typical electricity consumption for households is lower than it is in other jurisdictions. Furthermore, as the billing cycle for electricity and gas is different (typically quarterly for electricity and bi-monthly for gas) the total cost of households' energy consumption is typically spread across two bills (electricity and gas) that arrive at different times. Finally, we note that Victorians often experience two price changes over the year, after the regulatory re-set in January and in July due to changes in the wholesale market or the policy framework. The carbon tax, for example, resulted in price increases from July 2012, but unlike the other jurisdictions, Victorian households did not receive a price increase due to regulatory price re-sets at the same time. These price changes occurred in January 2013 in Victoria. These are all factors that may explain why the link between price increases and disconnections is weak in that state.

Chart 8 Estimated number of completed disconnections in Citipower by calendar month

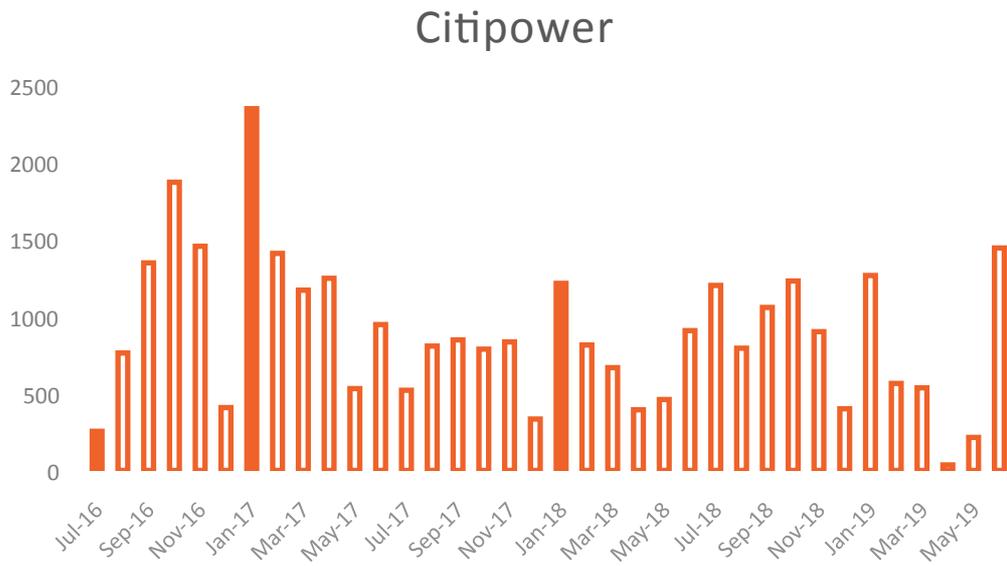


Chart 9 Estimated number of completed disconnections in Jemena by calendar month

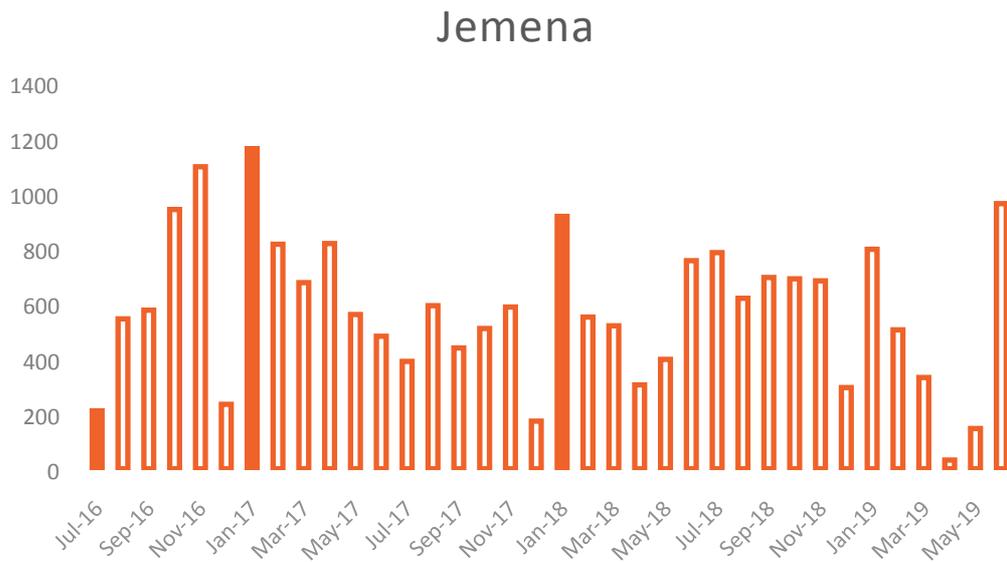
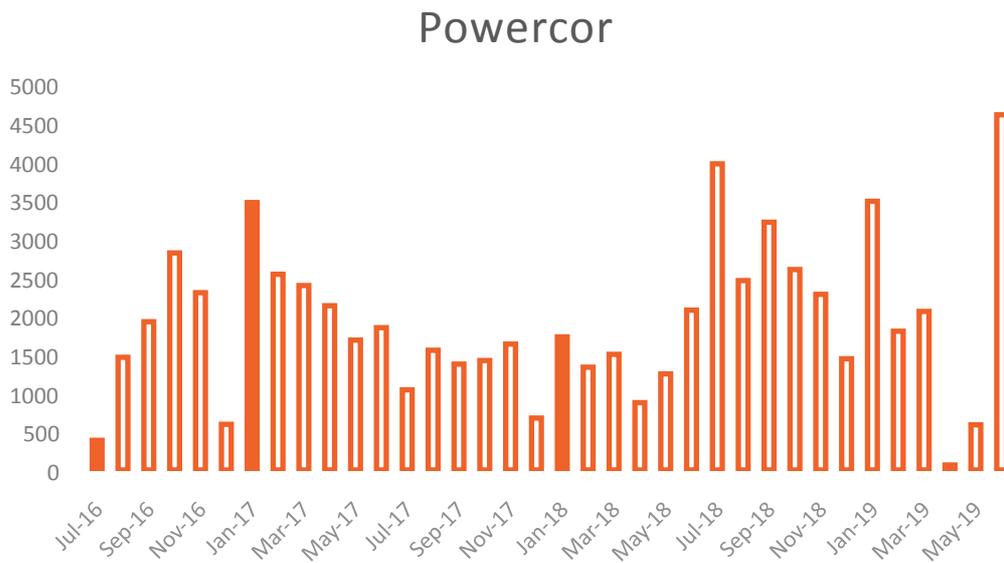


Chart 10 Estimated number of completed disconnections in Powercor by calendar month



Charts 11 and 12 below show estimated completed disconnections by each month for the NSW network areas of Ausgrid and Endeavour. The filled columns are months when significant price increases took effect (July 2012 and July 2013 for Ausgrid and July 2012 for Endeavour).

In Ausgrid, disconnections increased significantly in October 2012 but it is unclear whether this was in direct response to the price increases that took effect in July 2012. In Endeavour, the July 2012 price increases may have had a similar impact but it is difficult to then explain similar increases to disconnections in the other years when customers did not experience price increases.

Chart 11 Estimated number of completed disconnections in Ausgrid by calendar month

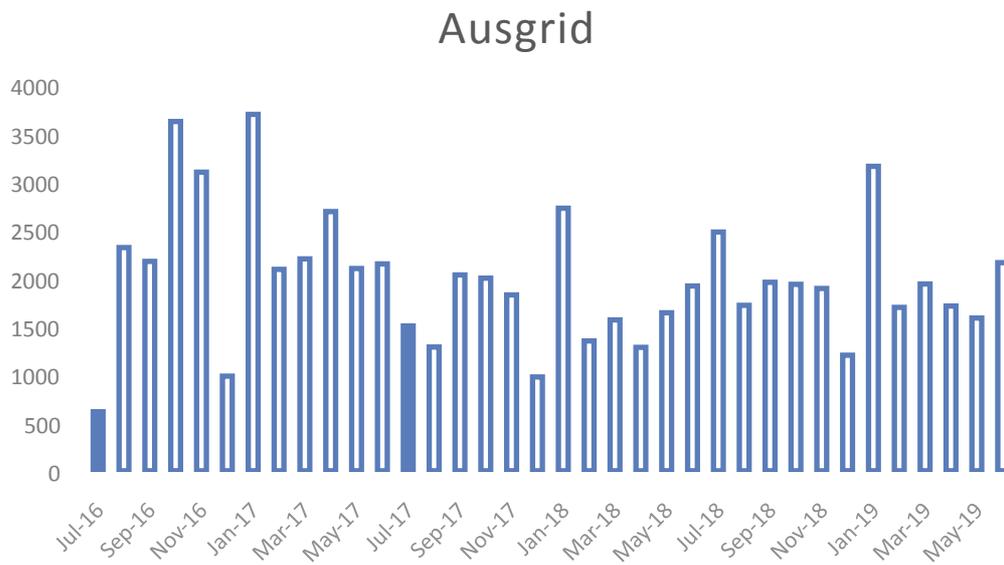


Chart 12 Estimated number of completed disconnections in Endeavour by calendar month

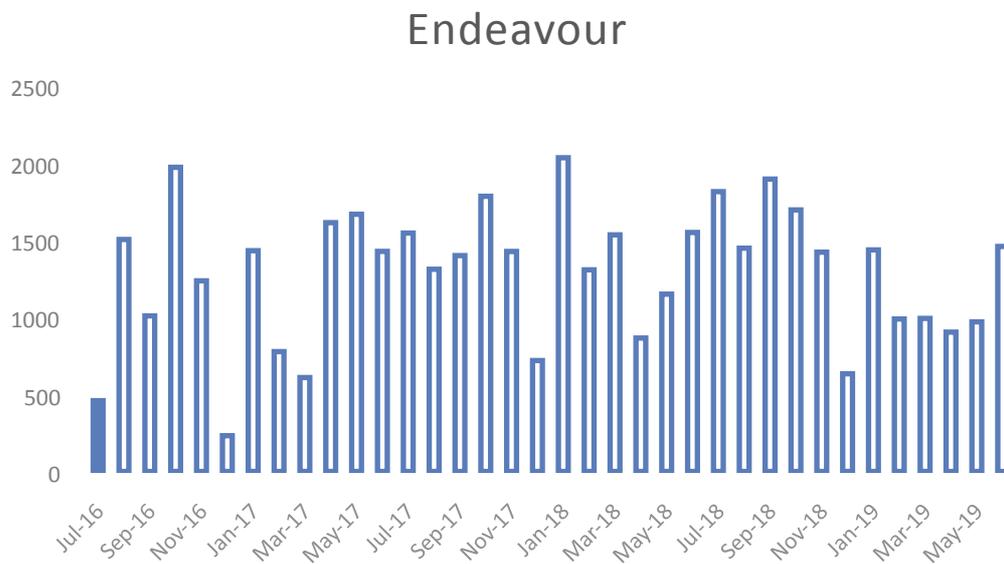
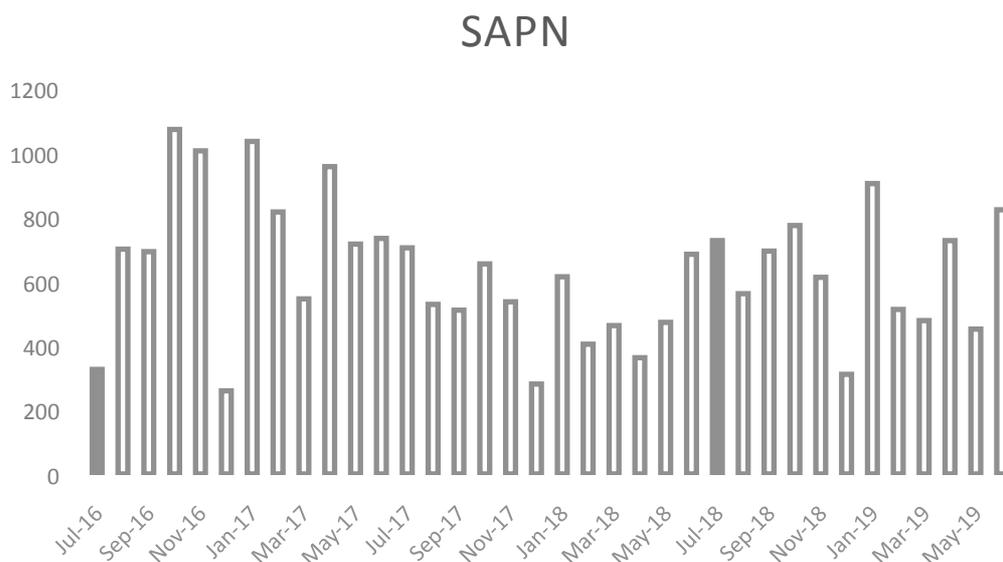


Chart 13 below shows similar patterns for South Australia. There may have been a significant increase in disconnections in October 2012 due to the price increases that took effect post July 2012 but, if so, the impact of the July 2014 price increases was a lot less severe. We also note that some customers in South Australia would have experienced price increases in 2013 while others would have experienced price reductions that year (due to transitional arrangements in relation to retail price deregulation).

Chart 13 Estimated number of completed disconnections in SAPN by calendar month

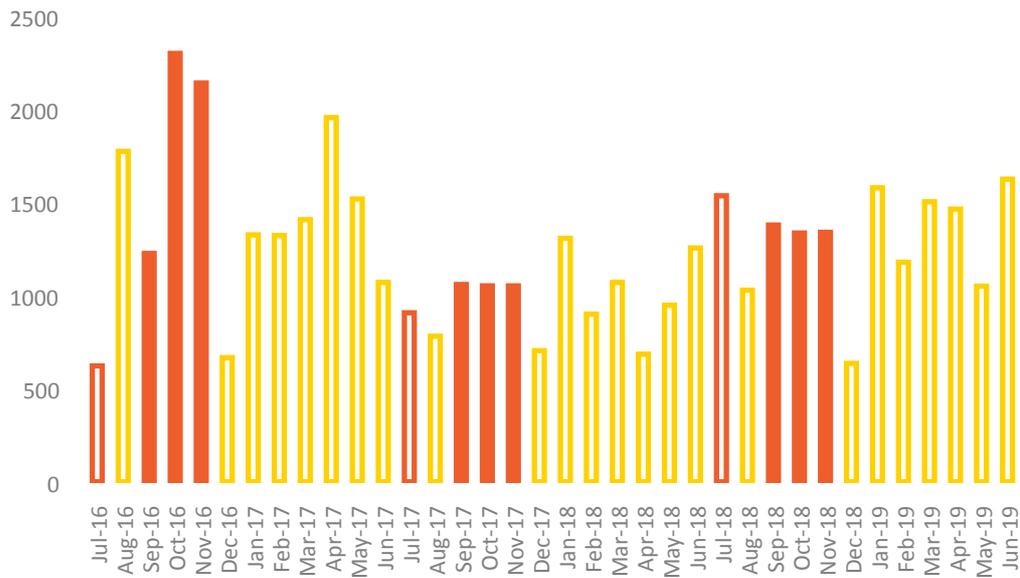


Residential electricity prices increased significantly in 2011 and 2012 in NSW, Victoria and South Australia, since then, however, the increases have been more moderate as well as included some decreases.²⁵ This may explain why we are unable to detect a clear relation between price increases and disconnections based on price changes occurring between January 2013 and July 2015. Electricity prices in Queensland, however, did increase by approximately 20% in July 2013 as well as 10% in July 2012 and July 2014.

Chart 14 below shows estimated completed disconnections in South East Queensland for each month. The columns for July 2012 (when prices increased by 10%), July 2013 (when prices increased by 20%) and July 2014 (when prices increased by 10%) are outlined in red. The following September, October and November (red columns) are thus times we would expect to see an increase in disconnections in response to these price increases. While the disconnection numbers are greater during these three months compared to August, we also note that disconnection numbers are higher for some of the other months.

²⁵ The St Vincent de Paul Society has analysed price changes in all NEM jurisdictions from 2009 to 2015 through its ongoing Tariff-Tracking project. See www.vinnies.org.au/energy for more information about the Tariff-Tracking project and changes to residential energy prices. Both South Australia (in 2013) and NSW (in 2014) introduced lower transitional rates in relation to the introduction of retail price regulation and all jurisdictions experienced price deductions due to the repeal of the carbon tax.

Chart 14 Estimated number of completed disconnections in SEQ by calendar month



As the above analysis is based on completed disconnections only it is not necessarily the best indicator for payment difficulties due to bill increases. As there are relatively few smart meters in Queensland, Energex, the distribution business, usually has to manually disconnect households that the retailer has raised a service order for. Energex' ability to carry out these service orders in a timely fashion will therefore impact on when the households were actually disconnected.

It typically takes 2-3 weeks from a disconnection being raised by the retailer to being completed by the distributor in SEQ. If the distribution business (as well as the regulatory requirements they operate within) had no impact on when disconnections are completed, we would expect disconnections completed trending just behind disconnections raised in chart 15 below (understanding that the overall completion rate would be lower than the number of disconnections raised). Chart 15 shows, however, that this is not always the case. In 2013, for example, there is a peak in disconnections raised in October 2013 but the peak in disconnections completed does not occur before January 2014. The December drop in both disconnections raised and disconnections completed, in particular, can be explained by the regulatory requirement preventing disconnections close to public holidays as well as industry's own practices of not disconnecting households in the lead up to Christmas. This naturally leads to a backlog in January and therefore becomes a month when many households get disconnected. We stress, however, that it is not retailers that raise high numbers of disconnections due to non-payment in January, but that the increase in disconnections is caused by an increase to the completion rate.

Chart 15 Estimated number of disconnections raised and completed in SEQ by calendar month

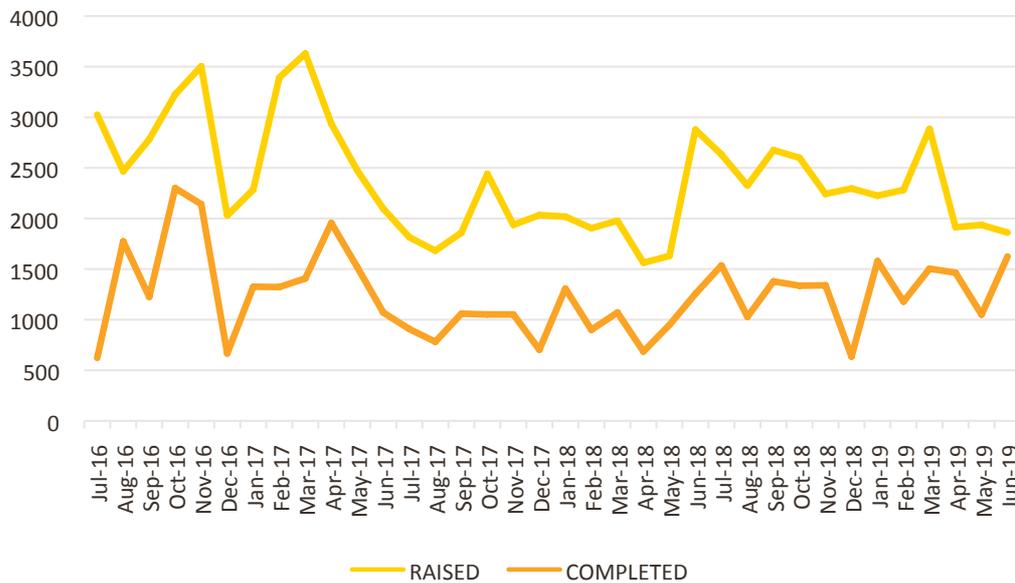
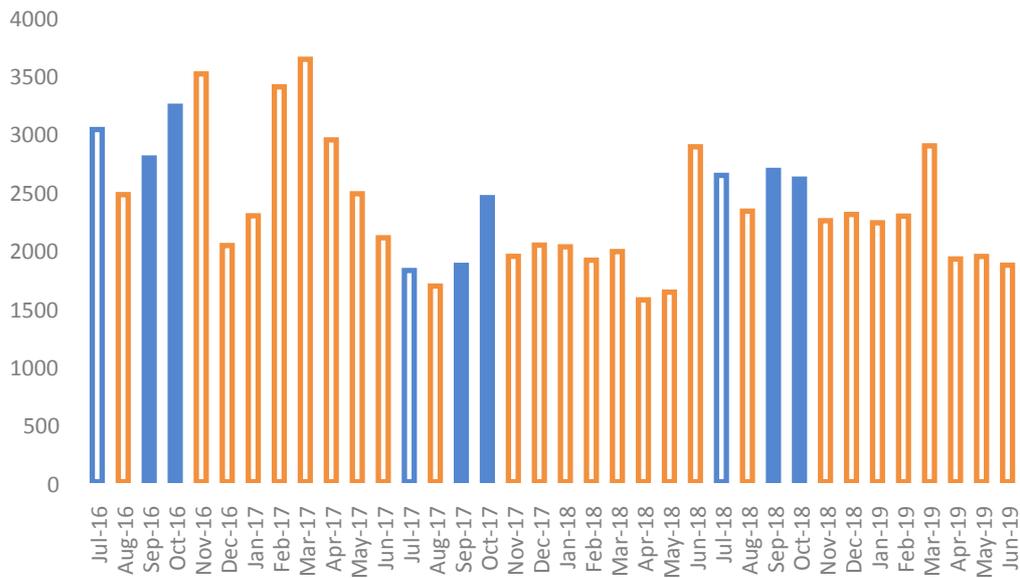


Chart 16 below shows estimated disconnections raised (not completed) due to non-payment by the retailer for each of the months. In this chart there is a stronger link between the significant price increases in July 2013 (20%) and the number of disconnections raised in October 2013. The immediate impact of price increases on the number of disconnections raised in 2012 and 2014 are less clear but we note that the price increases were lower in these two years compared to 2013. Furthermore, a significant proportion of the July 2013 price increase was in the fixed daily supply charge meaning that households had less of an ability to mitigate high bills through reducing their consumption. It also would have made the price increases proportionally larger for smaller households with a lower consumption level.²⁶

²⁶ The Vinnies’ Tariff-Tracking report stated that the supply charge (for tariff 11) increased by 92% (or 26 cents/day) from July 2013. St Vincent de Paul Society, Queensland Energy Prices July 2012 – July 2013, An Update Report on the Queensland Tariff-Tracking Project by May Mauseth Johnston, August 2013

Chart 16 Estimated number of disconnections raised in SEQ by calendar month



While the data available for this analysis does not allow us to firmly conclude that disconnection numbers increase after a significant price increase, we believe that we can expect a higher number of disconnections being raised two to three months after significant price increases take effect. How significant the price increase has to be in order to expect an increase in disconnections raised, however, is not an issue that this analysis has enabled us to explore.

Our hypothesis is still that higher bills due to price increases and/or consumption will increase the number of customers experiencing energy related financial hardship and ultimately disconnections. Data showing when and where disconnections occur, however, is not best suited to test this hypothesis. There are too many factors influencing when disconnections occur (including retail practices, distributor practices and regulatory requirements) to be able to establish a clear and consistent relationship between price changes and disconnections.

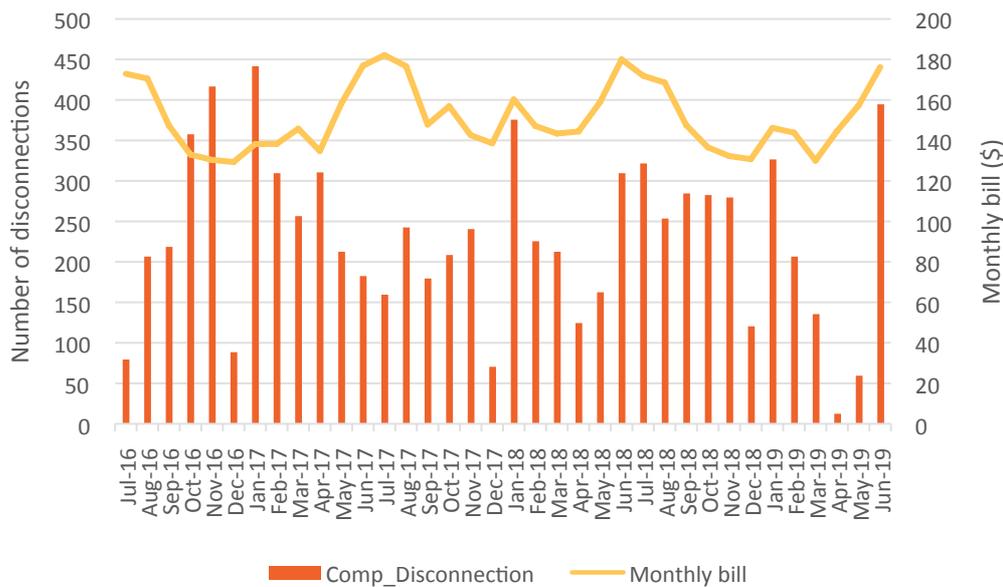
2.3 Weather driven consumption and disconnections

Due to the various factors that impact on when disconnections occur that we discussed above, it was not surprising that we were unable to establish any link between weather driven consumption and disconnection levels.

Again there is no reason to believe that a very cold winter or a very hot summer do not impact on the number of customers facing difficulties paying their bills and potentially being disconnected. However as it is reasonable to assume that weather driven higher electricity

consumption has less of an impact than significant price increases, we decided not to analyse the data in detail in order to try to link weather events to disconnection numbers.²⁷ Chart 17 below shows monthly bills adjusted for heating degree days (HDD) and cooling degree days (CDD) in the Jemena network as well as AGL’s disconnection numbers. This chart, as well as similar charts that we analysed for different network areas, does not allow us to draw any link between higher weather driven consumption and disconnection numbers.

Chart 17 Completed disconnections (AGL) and weather adjusted monthly bills for households with a typical annual consumption (4,800kWh) in the Jemena network²⁸



In summary, January is the month with the highest disconnection numbers but this does not necessarily mean that January is the month that the highest number of households face difficulties in paying their electricity bills. While higher bills due to price increases and/or weather driven increase in consumption is likely to increase the number of households unable to pay, there are numerous factors influencing when a household actually gets disconnected, such as billing cycles, business practices and regulatory requirements. This means that disconnection data is not best suited to measure the impact higher bills have on energy related financial hardship. In order to establish the impact higher bills have on energy related hardship with the potential outcome of disconnection, we believe a study of other indicators, such as changes to how many days it takes for bills to be paid, would be more revealing.

²⁷ For example, many customers will expect and plan for higher bills due to weather driven increases to consumption levels due to past experiences. Price increases, on the other hand, have not previously been presented in the form of a bill. So while both occurrences can cause payment difficulties, price increases are more likely to present themselves as “bill-shock”.

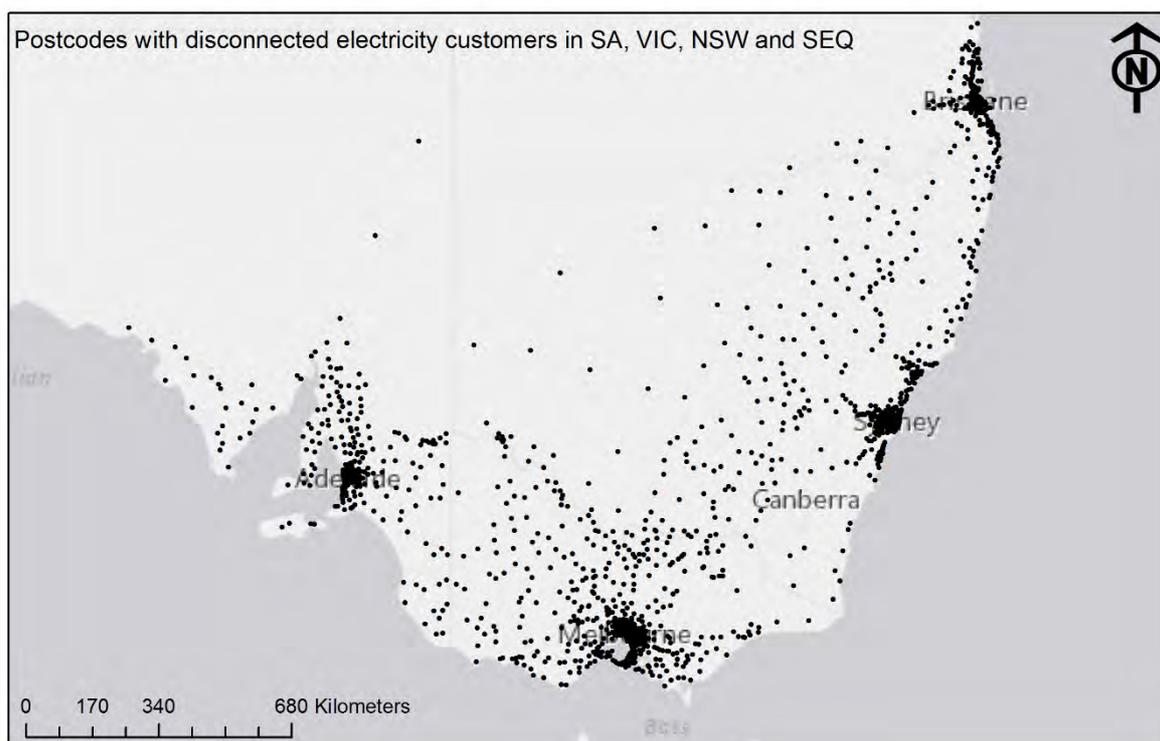
²⁸ In order to calculate HDD and CDD we used maximum and minimum daily temperatures collected at each of the capital cities’ main airports and made available by the Bureau of Metrology (at www.bom.gov.au). HDD equals 18-(max daily temperature-minimum daily temperature)/2 and CDD equals (max daily temperature-minimum daily temperature)/2-18 (positive values only).

3. Where

Most postcodes contain households that get disconnected from electricity from time to time, but the number of households that get disconnected and how frequently this occurs, vary significantly from area to area.

The map below shows postcodes that had completed electricity disconnections in South Australia, Victoria, NSW and South East Queensland from July 2012 to July 2015.²⁹

Map 1 Postcodes with completed electricity disconnections during the July 2012 – July 2015 period



There are also differences between jurisdictions in terms of how frequently households get disconnected and in what areas higher numbers of disconnections occur. As discussed in section 1.2.2, jurisdictional differences in relation to proportion of customers that get disconnected can be influenced by metering types (manual meter versus smart meters) as well as business practices relating to the local electricity distributor rather than the retailer. In this section, however, we will focus on whether high disconnection numbers occur in inner city areas, suburban postcodes, regional cities or rural areas, as well as whether there are significant differences between the four jurisdictions covered by our analysis.

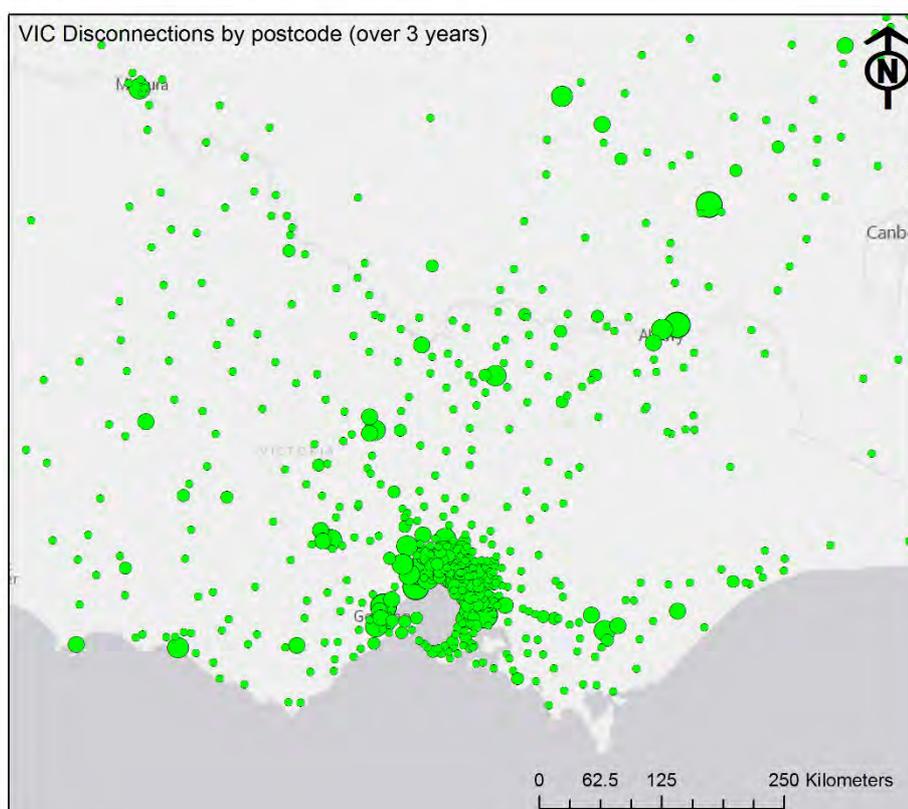
²⁹ As the data analysis in this section is based on AGL retail data, disconnections in a postcode that does not have AGL customers will not be registered. We do not know whether there are postcodes in these areas where AGL does not have customers or only a few customers.

3.1 Total number of disconnections by postcode

The analysis presented in this section shows estimated total number of disconnections for each postcode. The estimated numbers are based on AGL's data and have been normalised for AGL's market share in each network area. The analysis therefore shows how many households that were disconnected in each postcode *if* all retailers disconnected as frequently (or seldom) as AGL.

Maps 2 - 5 below show estimated total number of disconnections for each postcode during the three year period from July 2012 to July 2015 for each of the four jurisdictions as well as the estimated number of disconnections in each postcode (circle size).³⁰

Map 2 Victoria - Estimated total disconnections by postcode from July 2012 – July 2015



Legend

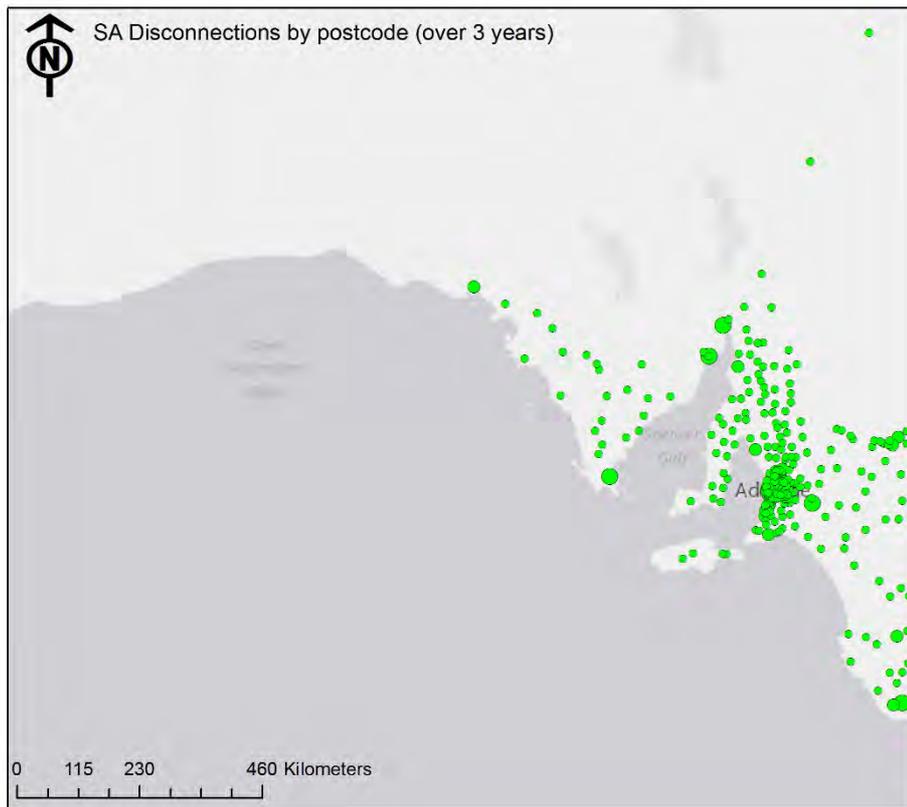
Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

³⁰ The data has been normalised to show number of disconnections occurring if all retailers disconnect as frequently as AGL. As such these maps have taken AGL's market share/customer numbers into account but it does *not* show the proportion of customers disconnected in each postcode based on postcode population.

Map 3 South Australia - Estimated total disconnections by postcode from July 2012 – July 2015



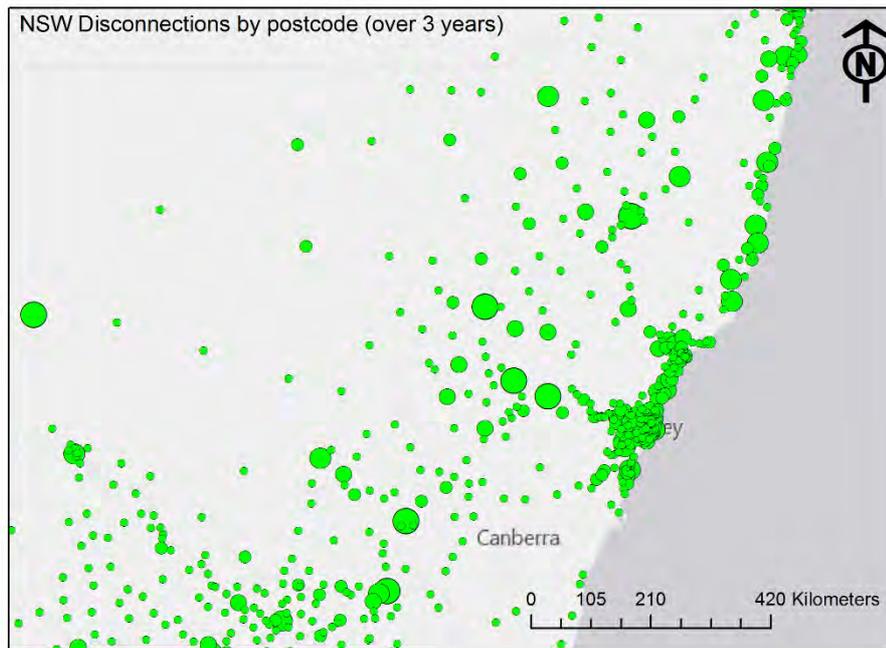
Legend

Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

Map 4 NSW - Estimated total disconnections by postcode from July 2012 – July 2015



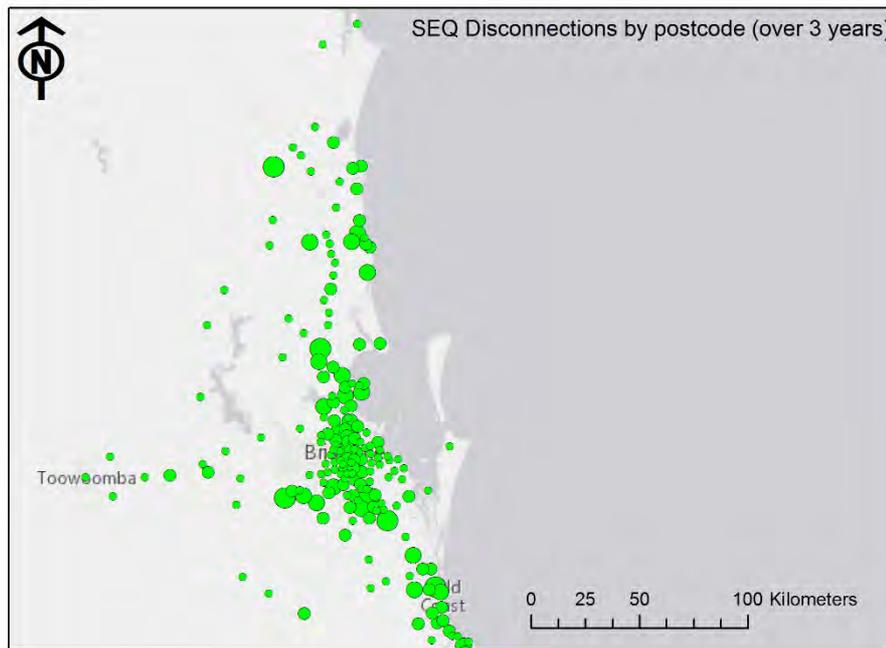
Legend

Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

Map 5 South East Queensland - Estimated total disconnections by postcode from July 2012 – July 2015



Legend

Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

The above maps indicate that Victoria and NSW have the postcodes with the highest numbers of disconnections (biggest circles) and that disconnections are most frequent in the urban areas of Melbourne, Adelaide, Sydney and Brisbane. This can be partly explained by population numbers being higher in these areas.

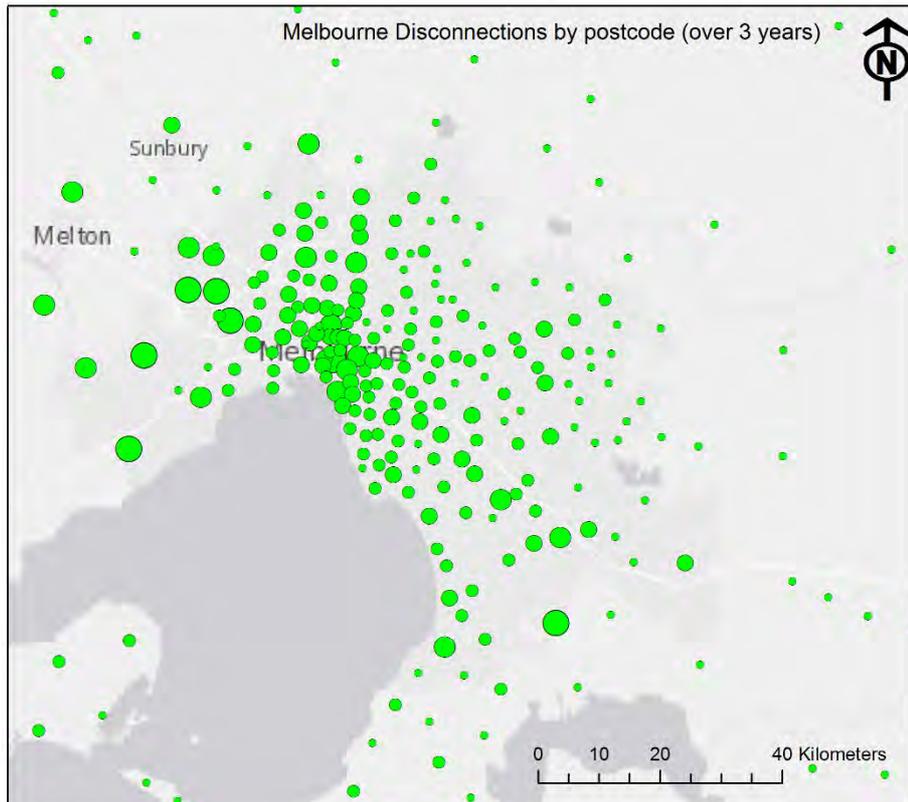
Interestingly, however, NSW has several rural and regional areas with high disconnection numbers compared to the other jurisdictions. While all four jurisdictions have pockets with high disconnection numbers outside their capital cities, the number of disconnections occurring in these non-urban areas of NSW are very high by comparison.

Maps 6 - 9 below shows the same data zoomed in on the capital cities. They show that all four cities have higher disconnection rates in the inner city as well as in some of the outer suburbs. However, they also show that Melbourne and Sydney have particularly high disconnection rates in some of their inner-city postcodes compared to Adelaide and Brisbane. Again, population size may explain some of these differences but other factors such as cost of housing, public housing and student population may also contribute. These factors will be explored in section 4.1 below.

In terms of suburban postcodes with high disconnection numbers, these maps show that the highest disconnection numbers occur in the lower socioeconomic areas of:

- Melbourne’s western and northern suburbs as well as outer south eastern suburbs;
- Adelaide’s northern suburbs;
- Sydney’s western suburbs; and
- Brisbane’s southern and northern suburbs.

Map 6 Melbourne - Estimated total disconnections by postcode from July 2012 – July 2015



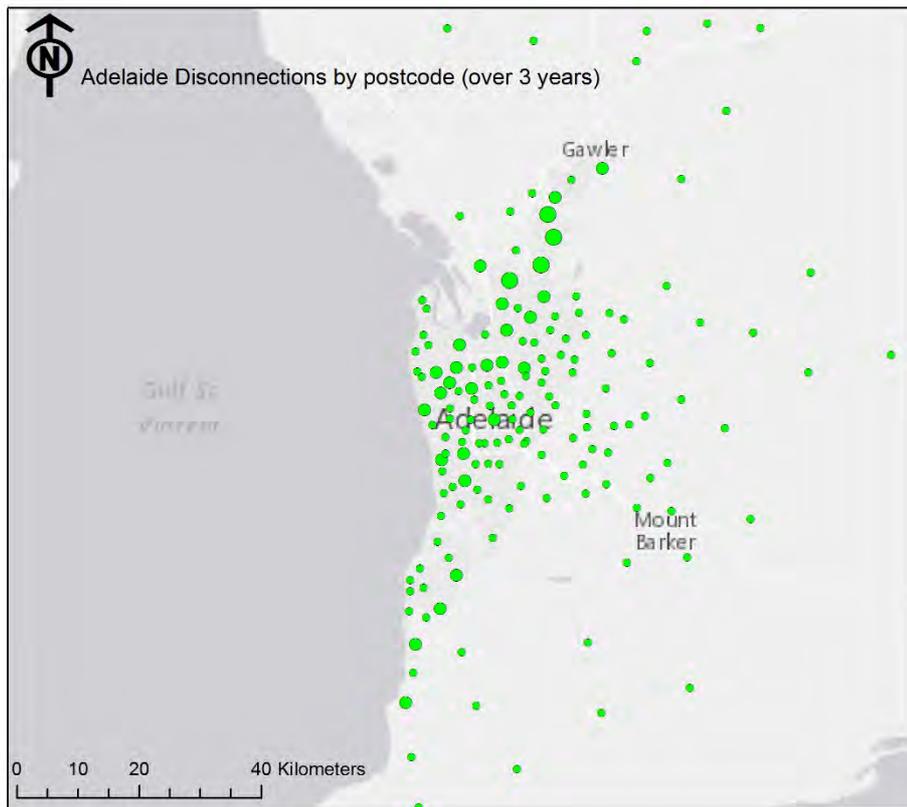
Legend

Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

Map 7 Adelaide - Estimated total disconnections by postcode from July 2012 – July 2015



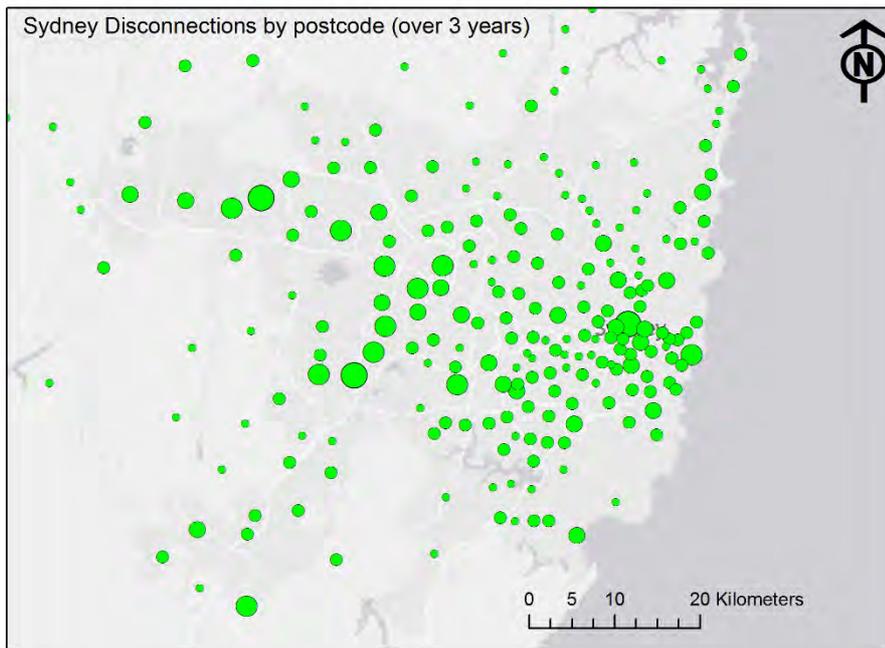
Legend

Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

Map 8 Sydney - Estimated total disconnections by postcode from July 2012 – July 2015



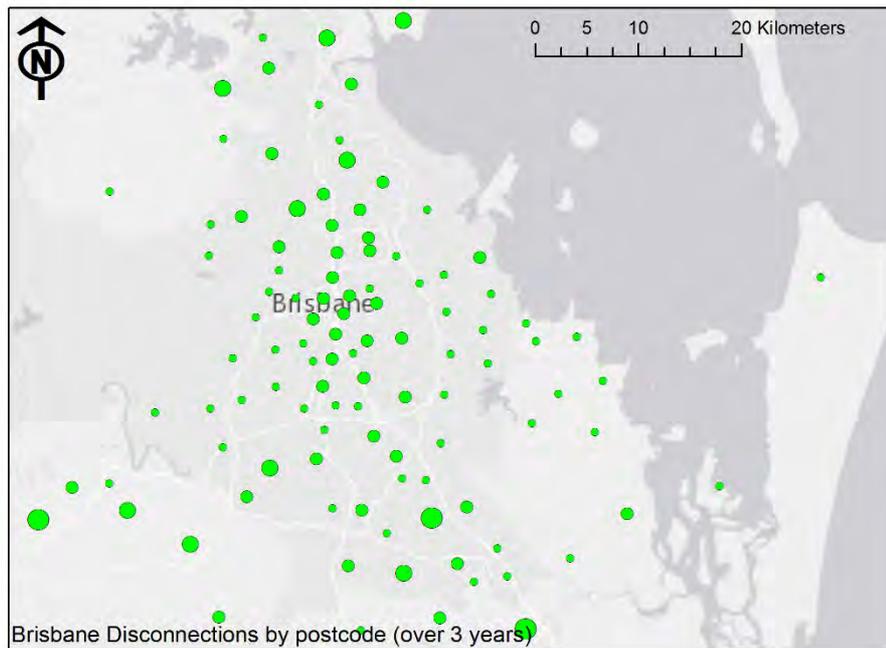
Legend

Postcodes with completed disconnections

SCORE_1

- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

Map 9 Brisbane - Estimated total disconnections by postcode from July 2012 – July 2015



Legend

Postcodes with completed disconnections

SCORE_1

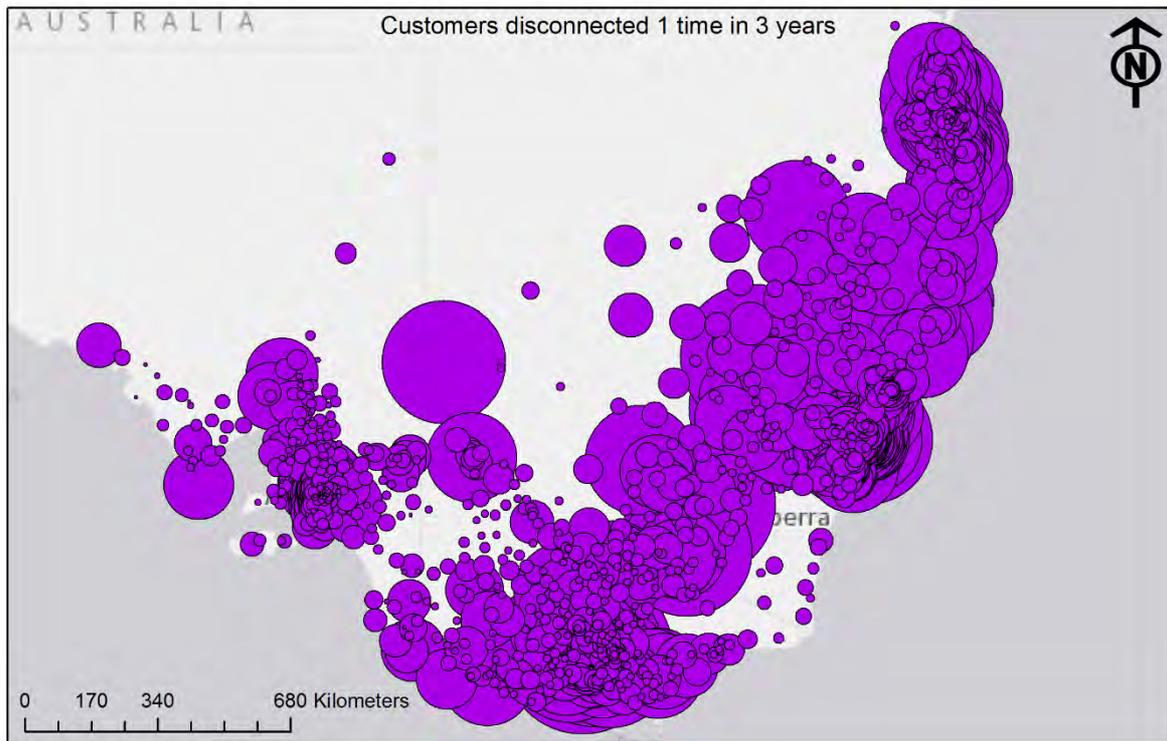
- 2 - 200
- 201 - 568
- 569 - 1168
- 1169 - 2319
- 2320 - 4932

2.2 Households disconnected multiple times

As the dataset contains customer numbers we have been able to count and geospatially locate individual customers that have been disconnected (and reconnected) multiple times over the three year period.

The maps below show postcodes by individual customers being disconnected 1 to 5 times over the three year period. Clearly a lot of postcodes have many electricity customers that have been disconnected once over the three year period but some postcodes also have many customers disconnected four or five times over the period. We stress that this analysis is based on customer number and not dwelling or meter identifier, and as the customer number is the starting point for this analysis, a customer disconnected five times has not been included in the presentation of customers disconnected 1 to 4 times.

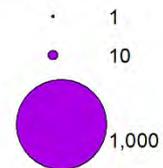
Map 10 Estimated total number of customers in each postcode disconnected once from July 2012 to July 2015



Legend

Postcodes with completed disconnections

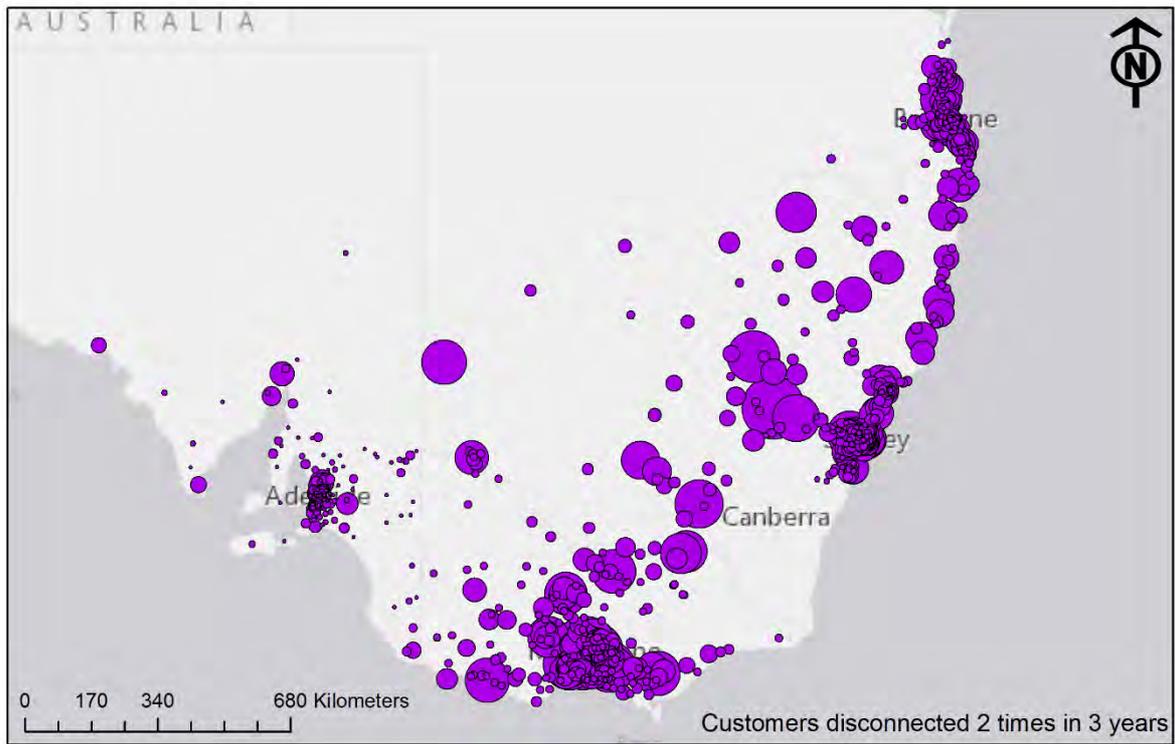
NORM_1



When several households in a community are disconnected from electricity more than once over a three year period, we are arguably looking at communities with entrenched poverty or ongoing financial hardship. The map below shows postcodes where customers were disconnected twice in the three year timeframe.

It shows that many rural and regional postcodes in NSW and Victoria had a high number of customers disconnected twice during this period.

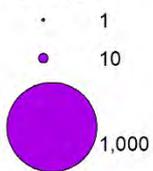
Map 11 Estimated total number of customers in each postcode disconnected twice from July 2012 to July 2015



Legend

Postcodes with completed disconnections

NORM_2



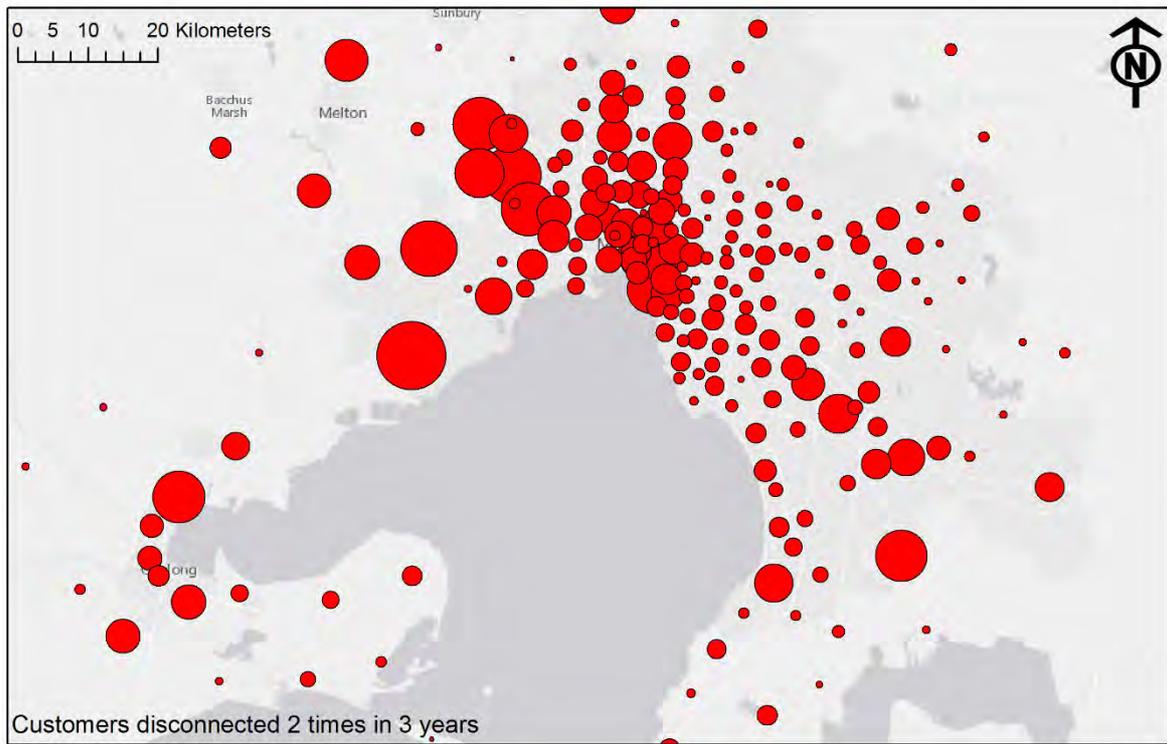
Rural and regional postcodes where we estimate that 200 customers or more were disconnected twice during this period are listed in table 3 below.

Table 3 Rural and regional postcodes where 200 customers or more were disconnected twice

State	Postcode name	Number of customers
NSW	Orange	477
NSW	Dubbo	338
VIC	Corio	329
NSW	Wagga Wagga	285
NSW	Bathurst	269
VIC	Shepparton	243
VIC	Ballarat	241
VIC	Morewell	240
NSW	Broken Hill	238
VIC	Warrnambool	236
VIC	Bendigo	221
NSW	Tabletop	208
SEQ	Bellmere	207
NSW	Lavington	200
NSW	Moree	200

Melbourne and Sydney also have postcodes where more than 200 customers were disconnected twice. The outer western Melbourne suburb of Werribee, for example, had approximately 570 customers disconnected twice during this three year period. The maps below show number of customers disconnected twice in Melbourne and Sydney, and the table lists the city postcodes where more than 200 customers were disconnected twice.

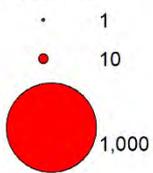
Map 12 Estimated total number of customers in each Melbourne postcode disconnected two times from July 2012 to July 2015



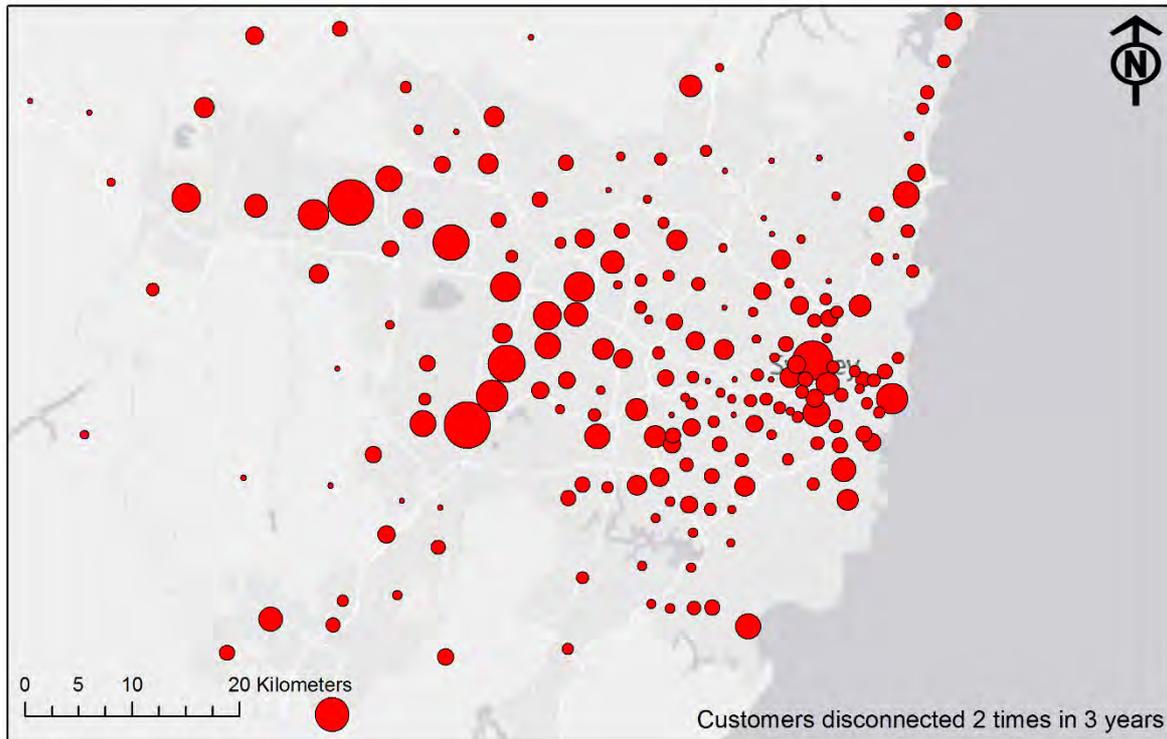
Legend

Postcodes with completed disconnections

NORM_2



Map 13 Estimated total number of customers in each Sydney postcode disconnected two times from July 2012 to July 2015



Legend

Postcodes with completed disconnections

NORM_2

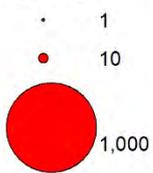
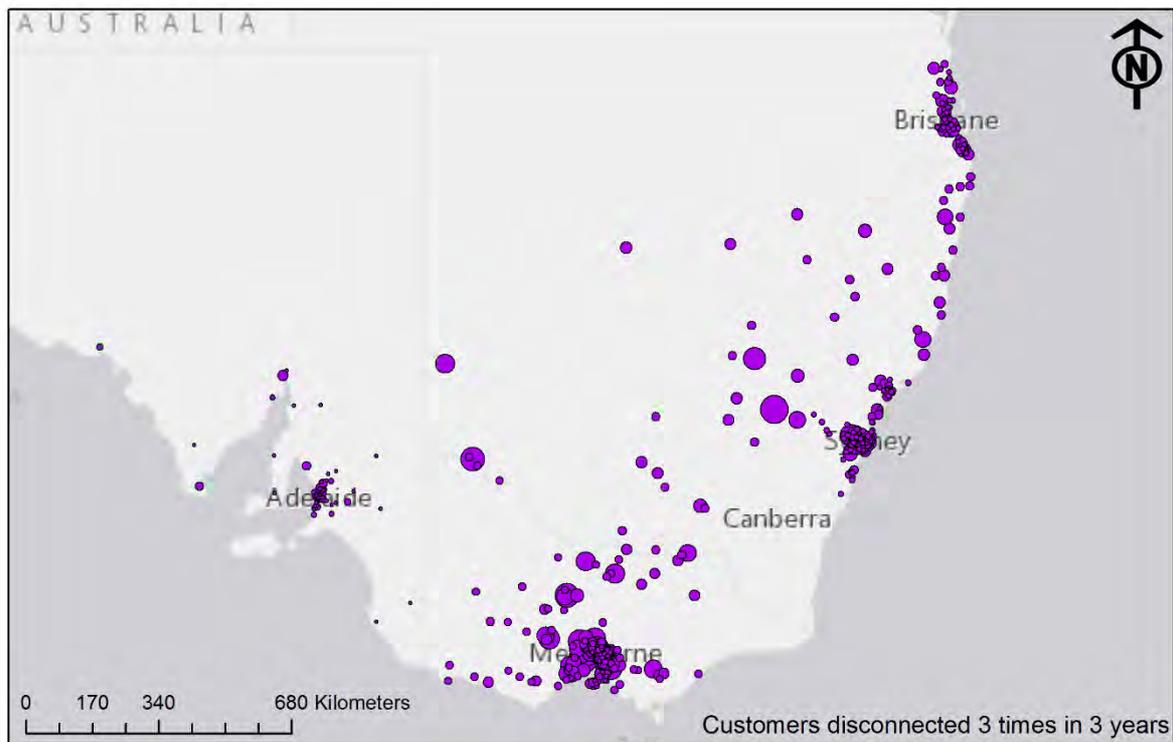


Table 4 Melbourne and Sydney postcodes where 200 customers or more were disconnected twice

State	Postcode name	Number of customers
VIC	Werribee	571
VIC	St Albans	414
VIC	Tarneit	379
VIC	Melbourne	375
VIC	Sydenham	357
VIC	Sunshine	350
VIC	Cranbourne East	320
VIC	Burnside	300
NSW	Mount Pritchard	260
NSW	Hebersham	256
VIC	Melton	221

When examining customers that have been disconnected three times over the three year period, it is clear that the same postcodes that had a high number of customers disconnected twice typically also have the highest numbers of customers disconnected three times.

Map 14 Estimated total number of customers in each postcode disconnected three times from July 2012 to July 2015



Legend

Postcodes with completed disconnections

NORM_3

- 1
- 10
- 100

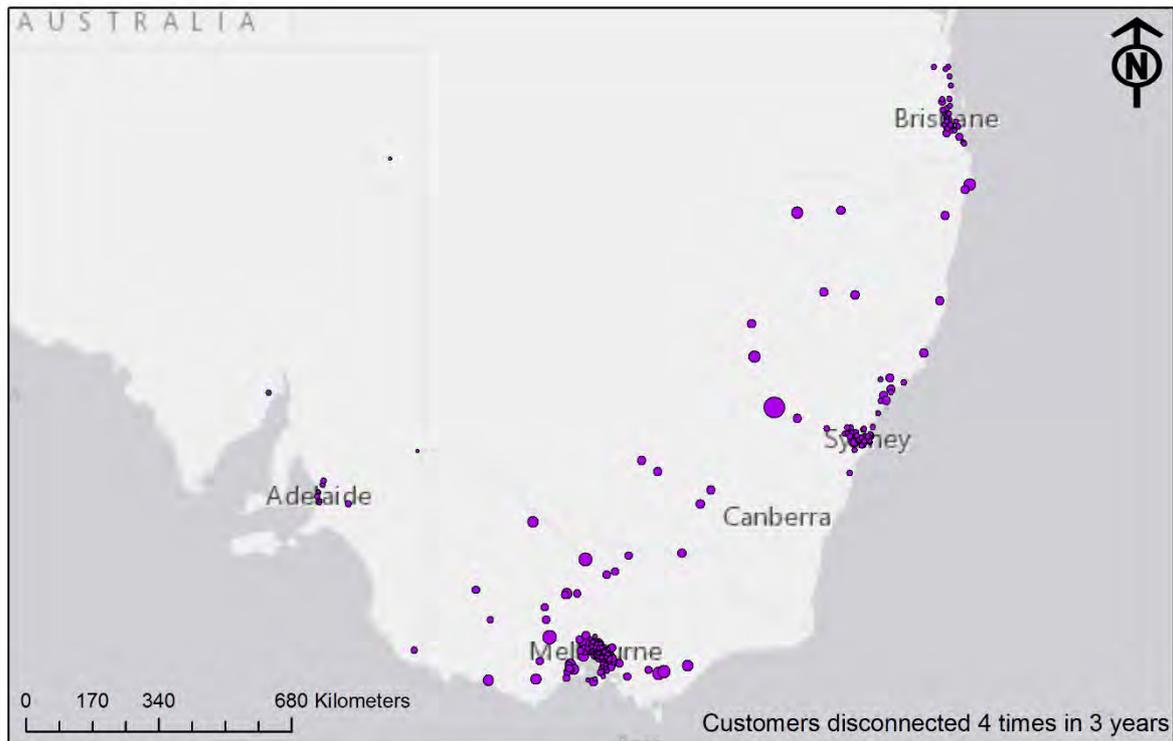
The table below lists postcodes where 50 or more customers were disconnected three times over the three year period. Fourteen of the postcodes listed in the table below are postcodes that had more than 200 customers that were disconnected twice while seven of the postcodes are different (marked *).

Table 5 Postcodes where 50 customers or more were disconnected three times

State	Postcode name	Number of customers
NSW	Hebersham	338
VIC	Werribee	100
VIC	St Albans	93
NSW	Orange	92
VIC	Bendigo	71
VIC	Tarneit	71
VIC	Mildura*	71
VIC	Melbourne	69
VIC	Sunshine	64
VIC	Melton	64
VIC	Altona Meadows*	64
NSW	Blacktown*	64
NSW	Dubbo	62
VIC	Ballarat	57
VIC	St Albans Park*	57
VIC	Wyndham Vale*	57
VIC	Craigieburn*	54
VIC	Cranbourne East	53
VIC	Corio	50
VIC	Burnside	50
VIC	Flemington*	50

In relation to postcodes where multiple customers have been disconnected 4 or 5 times over the three year period, this becomes mostly an issue for Victoria (where there is a high penetration of smart meters that enable remote disconnection). The maps below shows postcodes where customers have been disconnected 4 and 5 times. The table shows that some of the Melbourne postcodes where more than 20 customers have been disconnected 4 times are different to those listed above. It is therefore possible that these “new” postcodes have particular housing arrangements (i.e. rooming houses) or other issues in the community that impact on frequent disconnections (the relevant postcodes are marked *).

Map 15 Estimated total number of customers in each postcode disconnected four times from July 2012 to July 2015



Legend

Postcodes with completed disconnections

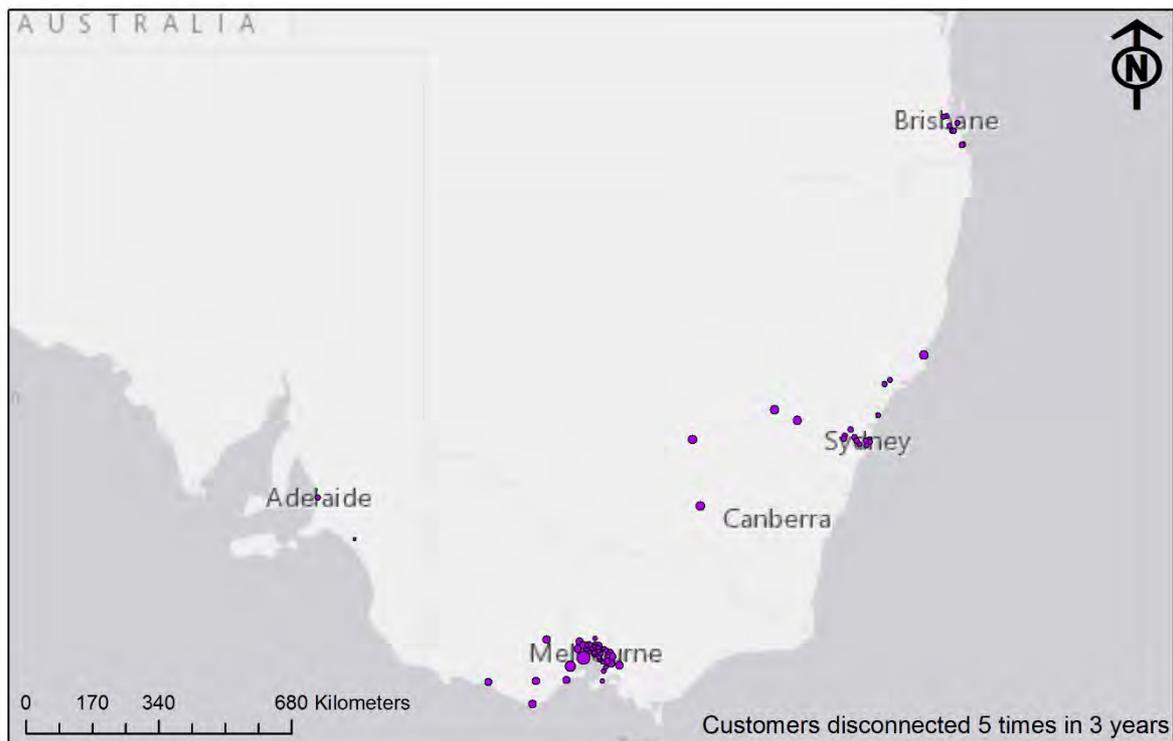
NORM_4

- 1
- 10
- 100

Table 6 Postcodes where 20 customers or more were disconnected four times

State	Postcode name	Number of customers
NSW	Orange	54
VIC	South Yarra*	31
VIC	St Albans	29
VIC	Burnside	29
VIC	Sydenham	29
VIC	St Kilda*	25
VIC	Richmond*	25
VIC	Ballarat	21
VIC	Echuca*	21
VIC	Morwell	20
VIC	Narre Warren*	20
VIC	Traralgon*	20

Map 16 Estimated total number of customers in each postcode disconnected five times from July 2012 to July 2015



Legend

Postcodes with completed disconnections

NORM_5

- 1
- 5
- 10

Only three postcodes had more than 10 customers that have been disconnected 5 times in 3 years. These are the Victorian postcodes of Corio, Werribee and Melbourne.

In summary, the above analysis shows that the disconnection ‘hot spots’ vary somewhat between the jurisdictions. In NSW, the regional centres and some smaller rural towns have relatively high disconnection numbers. In Victoria and South East Queensland, on the other hand, the outer suburbs are more at risk compared to regional areas.

In terms of disconnections being completed and customers being disconnected multiple times, we believe that the roll out of smart meters in Victoria has enabled a higher completion rate as well as increased the possibility of households being disconnected multiple times over a three year period. As discussed in the introduction of this report, 52% of all disconnections raised in South Australia and 50% of those raised in NSW over the three year period did not get completed. In Victoria, 39% were not completed. Furthermore, we found that out of the not completed disconnections in Victoria, 53% of them occurred in 2012/13, 27% in 2013/14 and only 20% in 2014/15. This indicates that smart meters have had a significant impact on the Victorian completion rates.

4. Who and why

The analysis presented in this section is based on the 200 postcodes with the highest disconnection numbers relative to population. The 'top 200' are made up of the 'top 50' postcodes in each of the four jurisdictions.³¹

We have analysed postcode characteristics based on income and expenses. Income levels reflect different life cycle stages as well as different pay levels for different types of employment. The expenses focuses on essentials that may be prioritised over electricity bills. Key expenses are housing, food and transportation. In relation to housing, we have also analysed housing stress by tenure. Median rent and mortgage repayments as well as proportion of households that spend 30% or more of household income on rent or mortgage repayments. In order to simplify the analysis, we have assumed that food expenses increase with household size and that transport costs are greater in rural and regional areas where a higher proportion of people rely on private cars.³²

On the basis of these criteria we have identified six broad groups of households that are at greatest risk of disconnection. These groups are:

7. Low income families experiencing housing stress
8. Median income families experiencing housing stress
9. Low to median income families with lower housing costs but greater transport costs
10. Low income small households (couples, sole persons and sole parents) experiencing housing stress
11. Small households with median income experiencing housing stress
12. Small households with low to median income with lower housing costs but greater transport costs

For some of these groups, hardship and electricity disconnections are transitional, life cycle related issues but for others it indicates long term financial disadvantage. Furthermore, while the locations of these groups may change somewhat over time, there are clear patterns in terms of the likelihood of an area having high disconnection numbers.

³¹ In identifying the 50 postcodes with the highest disconnection numbers in each state we used completed and partly completed disconnections in AGL's dataset (including multiple disconnections by the same customer number) and normalised these numbers based on AGL's customer numbers. In order to determine the disconnection ratios for each postcode, we used residential dwellings (occupied and unoccupied) as per ABS census data (2011). In order to avoid identifying potential small places with high disconnection numbers that could lead to individuals or communities feeling targeted or stigmatised, we used minimum estimated disconnections per postcode in order to be included in this analysis. In order to reflect the differences in the number of completed disconnections in each state, however, we used different minimums in different jurisdictions. In Victoria and NSW the analysis covered postcodes that had more than 100 estimated disconnections per year, in SEQ we included postcodes that had more than 66 estimated disconnections, and in SA, more than 33 disconnections per year. The 'top 50' postcodes therefore do not include any postcodes that may have less disconnection than these cut off rates but could potentially still be a high disconnection postcode due to very low population numbers.

³² See, for example, ABS Household Expenditure Survey 2003/4 that shows significantly higher expenditure on transport in rural areas compared to major urban areas. Cat. No. 1380.0.55.033 *Perspectives on Regional Australia: Household Expenditure throughout Australia, 2002-03*

4.1 Interstate differences

In analysing the 50 postcodes with the highest number of disconnections within each state, we identified both commonalities and differences between the 'top 50' postcodes in each of the four jurisdictions. An analysis of the combined 'top 200' postcodes across the four jurisdictions and the 'top 50' postcodes in each jurisdiction highlights differences and similarities between the jurisdictions in regards to key socioeconomic characteristics. As we have assessed postcode data against the relevant states' average or median to ascertain whether the postcode is high or low in relation to a specific socioeconomic indicator, we stress that the South East Queensland (SEQ) postcodes have been compared to data for Queensland as a whole and that this may have skewed the assessment of these postcodes somewhat. For example, if the median household income is higher in SEQ than it is in Queensland as a whole, then the 'top 50' disconnection postcodes in SEQ may appear relatively well off compared to the Queensland median. Compared to the SEQ median (that we do not have), however, these postcodes may have a relatively low median income.

4.1.1 Family composition and employment status

24% of the 'top 200' postcodes are comprised of more couple families with children than the relevant state's average. 61% of the postcodes had more sole parent households than average.

In regards to each jurisdiction, on the other hand, there are significant differences in terms of the prevalence of couple family households in the 'top 50' postcodes. In NSW only 12% of the postcodes had more couple families than the NSW average, while 32% of the Queensland postcodes did. Also, 70% of the Victorian 'top 50' postcodes had a greater number of sole parents than the Victorian average, while 54% of the Queensland postcodes did.

Table 7 Family composition – postcodes with a higher number of couple families with children

Couple families with children	Number of postcodes	Proportion of postcodes
QLD 'top 50'	16	32%
NSW 'top 50'	6	12%
SA 'top 50'	14	28%
VIC 'top 50'	12	24%
All 'top 200'	48	24%

Table 8 Family composition – postcodes with a higher number of sole parents than the relevant state’s average

Sole parents	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	27	54%
NSW ‘top 50’	31	62%
SA ‘top 50’	29	58%
VIC ‘top 50’	35	70%
All ‘top 200’	122	61%

As couple families (with or without children) with both parents/partners outside the work force are more likely to rely on social security or the aged pension for income, we expect postcodes with high disconnection rates to have a higher number of couple families where both are not working. 49% of the ‘top 200’ postcodes are comprised of more couple families outside the work force than the relevant state’s average and while there are some differences between the states, they are smaller for this indicator compared to what was the case for family composition.

Table 9 Employment status of couple families – postcodes with a higher number of couple families where both are not working than the relevant state’s average

Both not working	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	29	58%
NSW ‘top 50’	22	44%
SA ‘top 50’	22	44%
VIC ‘top 50’	25	50%
All ‘top 200’	98	49%

4.1.2 Age

35% of the ‘top 200’ postcodes are postcodes where the median age is higher than the relevant state’s median. On the other hand, 58% of the ‘top 200’ postcodes are postcodes where the median age is lower.³³ While NSW and South Australia have the same number of postcodes in each category, Queensland and Victoria are quite different. At first glance it could look like electricity disconnection is a greater problem for the elderly in Queensland and amongst the young in Victoria. We do, however, believe the Queensland numbers may

³³ Postcodes where the median age is the same as the relevant state’s median age are not included in either category.

be skewed due to the high numbers of people retiring to South East Queensland and the mean age of the disconnection postcodes being compared to the mean age of Queensland on the whole.

Overall, there are more postcodes in the 'top 200', as well as the states' 'top 50' postcodes, with a median age below the states' median.

Table 10 Older age – postcodes with a higher median age than the relevant state's median

Older age	Number of postcodes	Proportion of postcodes
QLD 'top 50'	20	40%
NSW 'top 50'	18	36%
SA 'top 50'	18	36%
VIC 'top 50'	14	28%
All 'top 200'	70	35%

Table 11 Younger age – postcodes with a lower median age than the relevant state's median

Younger age	Number of postcodes	Proportion of postcodes
QLD 'top 50'	27	54%
NSW 'top 50'	28	56%
SA 'top 50'	28	56%
VIC 'top 50'	33	66%
All 'top 200'	116	58%

4.1.3 Tenure types and housing stress³⁴

As many of the postcodes with high disconnection rates are postcodes with a lower median age, it is not surprising to find that there is a greater presence of renters, as well as home buyers (home owners with a mortgage), in the postcodes with high disconnection numbers.

60% of the 'top 200' postcodes are comprised of more renters than the relevant state's average. 28% of the postcodes have more home buyers than average.

³⁴ Housing stress has been defined as households where rent/mortgage payments are 30%, or greater, of household income.

In terms of median weekly rent or median monthly mortgage repayments, both postcodes with very high housing costs and postcodes with relatively low housing costs are present in the 'top 200' / 'top 50' postcodes.

23% of the 'top 200' postcodes are postcodes that we have classified as higher rent postcodes (10% or more than the relevant state's median). 20% are postcodes that we have classified as higher mortgage postcodes (10% or more than the relevant state's median). However, we stress that high disconnection postcodes with a high prevalence of housing stress due to mortgage repayments are typically not the same postcodes that have the high mortgage costs. In postcodes with high mortgage costs, however, we found high levels of housing stress in relation to high rental costs.

All in all, 53% of the 'top 200' postcodes are postcodes that have more tenants experiencing housing stress than the state's average. 29% are postcodes that have more home buyers experiencing housing stress than the state's average.

In Queensland, many of the 'top 50' postcodes have high housing stress rates for tenants and/or home buyers. In Victoria, on the other hand, most of the housing stress is in relation to rent. In NSW, many of the postcodes with high disconnection numbers had relatively low housing costs. This could indicate a number of things: Firstly, that the 'top 50' postcodes are comprised of more rural and regional postcodes compared to, for example, Victoria. Secondly, that there are other social issues and/or cost pressures having a greater impact on disconnection rates in NSW compared to other states. Thirdly, that disconnection of the 'asset rich but cash poor' (typically the elderly) may be a greater issue in NSW compared to the other states. However, the median age and the proportion of couples where both parents/partners do not work, do not indicate that this is the case. The most likely explanation is therefore that the 'top 50' NSW postcodes mostly capture postcodes facing entrenched poverty and the housing stress postcodes would only be properly presented if we analyse the 'top 100' disconnection postcodes in NSW.

Table 12 Housing tenure – postcodes with a higher number of renters than the relevant state's average

Renters	Number of postcodes	Proportion of postcodes
QLD 'top 50'	29	58%
NSW 'top 50'	27	54%
SA 'top 50'	32	64%
VIC 'top 50'	31	62%
All 'top 200'	119	60%

Table 13 Housing tenure – postcodes with a higher number of home buyers than the relevant state’s average

Home buyers	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	22	44%
NSW ‘top 50’	4	8%
SA ‘top 50’	18	36%
VIC ‘top 50’	11	22%
All ‘top 200’	55	28%

Table 14 High rental costs – postcodes with a median rent that is 10% more than the relevant state’s median

High rent	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	13	26%
NSW ‘top 50’	8	16%
SA ‘top 50’	13	26%
VIC ‘top 50’	12	24%
All ‘top 200’	46	23%

Table 15 High mortgage costs – postcodes with a median mortgage repayment that is 10% more than the relevant state’s median

High mortgage repayments	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	9	18%
NSW ‘top 50’	7	14%
SA ‘top 50’	7	14%
VIC ‘top 50’	16	32%
All ‘top 200’	39	20%

Table 16 High levels of housing stress amongst tenants – postcodes with more rental related housing stress than the relevant state’s average

Housing stress - rentals	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	30	60%
NSW ‘top 50’	18	36%
SA ‘top 50’	27	54%
VIC ‘top 50’	30	60%
All ‘top 200’	105	53%

Table 17 High levels of housing stress amongst home buyers – postcodes with more mortgage related housing stress than the relevant state’s average

Housing stress – home buyers	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	21	42%
NSW ‘top 50’	7	14%
SA ‘top 50’	18	36%
VIC ‘top 50’	12	24%
All ‘top 200’	58	29%

4.1.4 Household income

63% of the ‘top 200’ postcodes are comprised of more households with a gross weekly income of \$600 or less, than the relevant state’s average. NSW is the state where the ‘top 50’ disconnection postcodes have the highest number of low income households (defined as gross weekly household income of \$600 or less) while Queensland’s ‘top 50’ had the lowest. Again, we stress that the disconnection data covers South East Queensland only and that the income levels of postcodes in this area has been compared to income levels in Queensland on a whole.

Table 18 Gross weekly household income of \$600 or less – postcodes with more low income households than the relevant state’s average

Low income households	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	25	50%
NSW ‘top 50’	39	78%
SA ‘top 50’	32	64%
VIC ‘top 50’	30	60%
All ‘top 200’	126	63%

As was the case in relation to median housing costs, the median income is relatively high in some of the postcodes with high disconnection numbers. Again, that does not mean that the disconnected households are likely to be high income households, it only means that relatively well-off postcodes may have pockets of households struggling financially due to low income or high costs. Students residing in affluent areas near tertiary institutions is one example. Another is public housing estates in expensive inner city locations.

20% of the ‘top 200’ postcodes are comprised of households with a median income that is at least 10% higher than the relevant state’s average. Queensland and Victoria are the two states with the highest number of relatively wealthy postcodes in their ‘top 50’ lists.

Table 19 High household income – postcodes with a median household income that is at least 10% higher than the relevant state’s median

High household income	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	12	24%
NSW ‘top 50’	6	12%
SA ‘top 50’	7	14%
VIC ‘top 50’	14	28%
All ‘top 200’	39	20%

That said, the majority of the high disconnection postcodes have a median income that is at least 10% lower than the relevant state’s median. In NSW, 78% of the ‘top 50’ postcodes fall within this income group.

Table 20 Low household income – postcodes with a median household income that is at least 10% less than the relevant state’s median

Low household income	Number of postcodes	Proportion of postcodes
QLD ‘top 50’	23	46%
NSW ‘top 50’	39	78%
SA ‘top 50’	24	48%
VIC ‘top 50’	26	52%
All ‘top 200’	112	56%

4.2 Geographic location

Geographic locations, such as postcodes, both influence households’ living expenses as the cost of essential expenses (i.e. housing, transportation and electricity) vary significantly between areas as well as impacting on peoples’ decisions in terms of where they can best afford to live. At the same time, geographic location influences earning capacities and career or educational opportunities. Life cycle stages therefore also impact on peoples’ decisions in terms of where they need to live. For example, a couple on the aged pension that do not own their own home may consider moving to a rural or regional location in order to save on rent. A young couple aiming to further their education or find a job in their relevant field of expertise, on the other hand, are more unlikely to move away from such opportunities in order to reduce their weekly rent. As such, we can expect to find households in financial hardship and being disconnected from electricity due to an inability to pay in areas with high, as well as low, living costs.

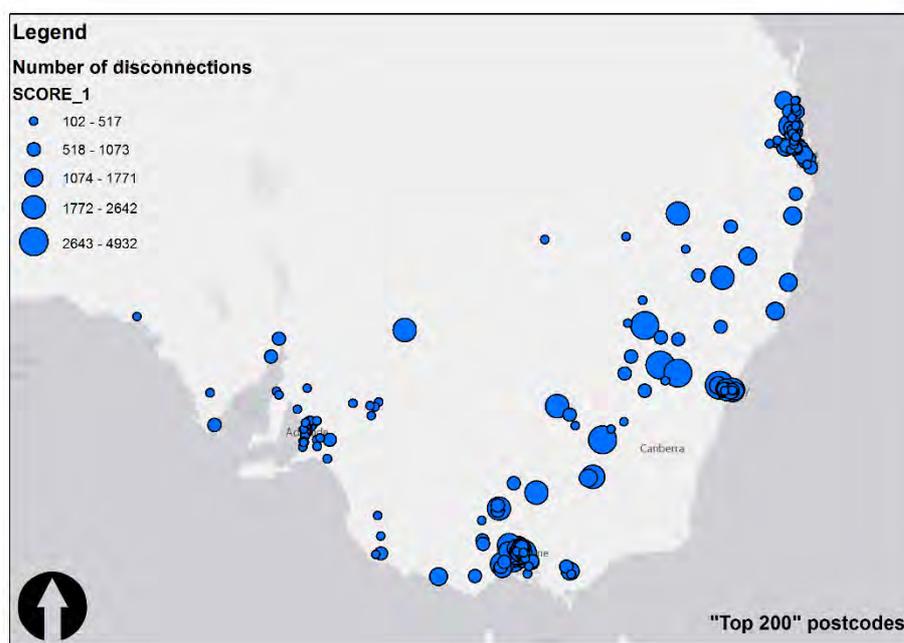
Table 21 below shows each group’s composition in regards to the key indicators

Key indicators	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Couples with children - average proportion of households (%)	43	48	43	31	28	36
Sole parents - average proportion of households (%)	23	18	17	20	12	19
Coupled families where both are not working - average proportion of households (%)	27	16	18	26	13	26
Gross weekly household income of less than \$600 - average proportion of households (%)	31	19	26	34	21	35
Home rented - average proportion of households (%)	36	30	29	45	54	30
Home owned with a mortgage - average proportion of households (%)	32	44	34	25	23	29

Rent is 30%, or greater, of household income - average proportion of households (%)	14	11	8	20	21	9
Mortgage repayment is 30%, or greater, of household income - average proportion of households (%)	11	14	7	8	7	6
Median weekly rent (\$)	250	300	200	278	365	160
Median monthly mortgage repayment (\$)	1517	1733	1500	1733	2253	1154
Median age	35	32	37	38	33	41
Median gross weekly household income (\$)	953	1246	1074	921	1522	812
Number of postcodes	41	39	33	31	18	38

Map 17 shows the location and estimated numbers of disconnections for the 50 postcodes with the highest number of disconnections from July 2012 to July 2015 in each of the four states.

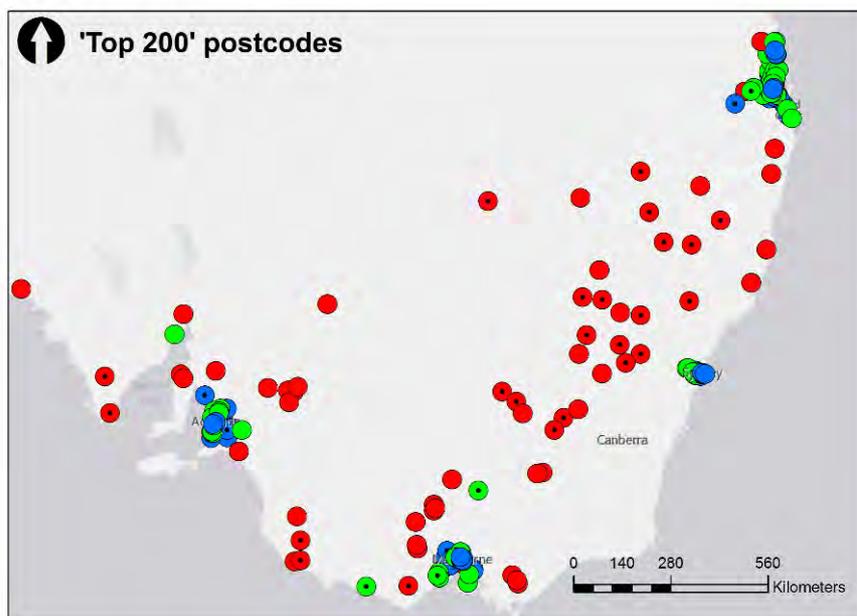
Map 17 The 50 postcodes with the highest number of disconnections (proportional to population) in each of the four states



Maps 18 - 22 below show the same postcodes but grouped according to the socio-economic factors used to characterise these areas. All green postcodes are low-income areas with high housing stress (group 1 and 4), all blue postcodes are low to medium income areas high in housing stress (group 2 and 5), and all red postcodes are low to medium income areas with low housing stress (group 3 and 6). A black dot inside the circle indicates that the area typically has larger (family) households (groups 1 – 3).

Tables 22 – 25 list the ‘top 50’ postcodes in each jurisdiction ranked according to their disconnection rates (1 being the highest).

Map 18 The 200 postcodes with the highest number of disconnections grouped according to the socio-economic factors used to characterise these areas



Disconnections by group/ area characteristics

Legend

- Group 1 Larger households_Low income_Housing stress
- Group 2 Larger households_Median income_Housing stress
- Group 3 Larger households_Low/median income_Low housing stress
- Group 4 Smaller households_Low income_Less housing stress
- Group 5 Smaller households_Median income_Housing stress
- Group 6 Smaller households_Low/median income_Less housing stress

Map 19 South Australia: The 50 postcodes with the highest number of disconnections grouped according to the socio-economic factors used to characterise these areas

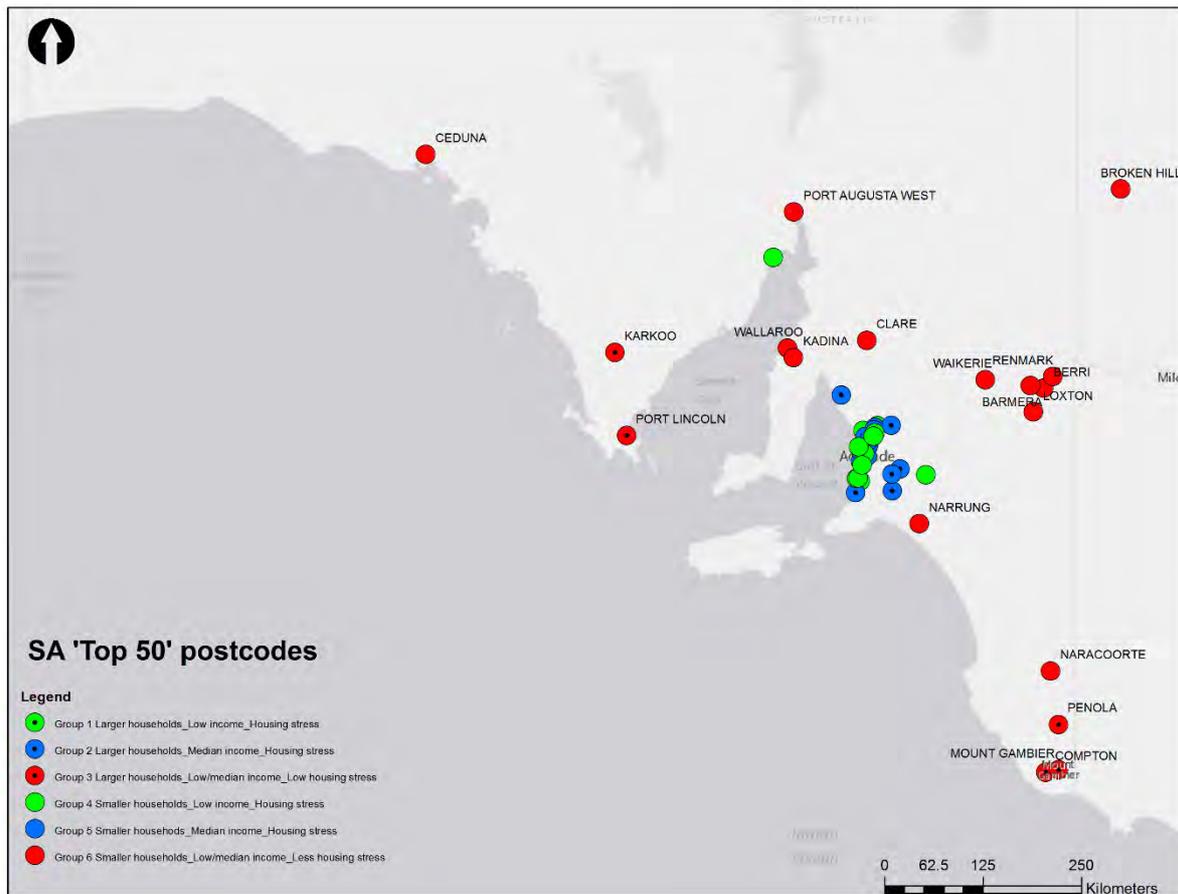


Table 22 SA 'top 50' postcodes ranked from highest to lowest disconnection rates

Rank	Postcode	Name	Group
1	5259	NARRUNG	6
2	5120	VIRGINIA	1
3	5690	CEDUNA	6
4	5700	PORT AUGUSTA WEST	6
5	5113	ELIZABETH PARK	4
6	5115	KUDLA	2
7	5606	PORT LINCOLN	3
8	5277	PENOLA	3
9	5608	WHYALLA STUART	4
10	5114	SMITHFIELD PLAINS	2
11	5253	NORTHERN HEIGHTS	4
12	5112	ELIZABETH VALE	4
13	5501	WILD HORSE PLAINS	2
14	5343	BERRI	6
15	5013	WINGFIELD	1
16	5271	NARACOORTE	6
17	5330	WAIKERIE	6

18	5012	WOODVILLE NORTH	1
19	5084	KILBURN	1
20	5345	BARMERA	6
21	5333	LOXTON	6
22	5095	MAWSON LAKES	2
23	5607	KARKOO	3
24	5165	CHRISTIES BEACH	4
25	5007	BROMPTON	4
26	5110	BURTON	2
27	5000	ADELAIDE	5
28	5341	RENMARK	6
29	5164	CHRISTIE DOWNS	4
30	5291	COMPTON	3
31	5252	KANMANTOO	2
32	5108	PARALOWIE	1
33	5556	WALLAROO	6
34	5163	HUNTFIELD HEIGHTS	1
35	5255	STRATHALBYN	2
36	5015	BIRKENHEAD	4
37	5168	OLD NOARLUNGA	1
38	5453	CLARE	6
39	5107	PARAFIELD GARDENS	2
40	5290	MOUNT GAMBIER	3
41	5031	MILE END	1
42	5251	MOUNT BARKER	2
43	5173	PORT WILLUNGA	2
44	5351	COCKATOO VALLEY	2
45	5116	EVANSTON	1
46	5011	WOODVILLE SOUTH	2
47	5023	SEATON	1
48	5554	KADINA	6
49	5046	WARRADALE	4
50	5045	GLENELG EAST	5

Map 20 Victoria: The 50 postcodes with the highest number of disconnections grouped according to the socio-economic factors used to characterise these areas

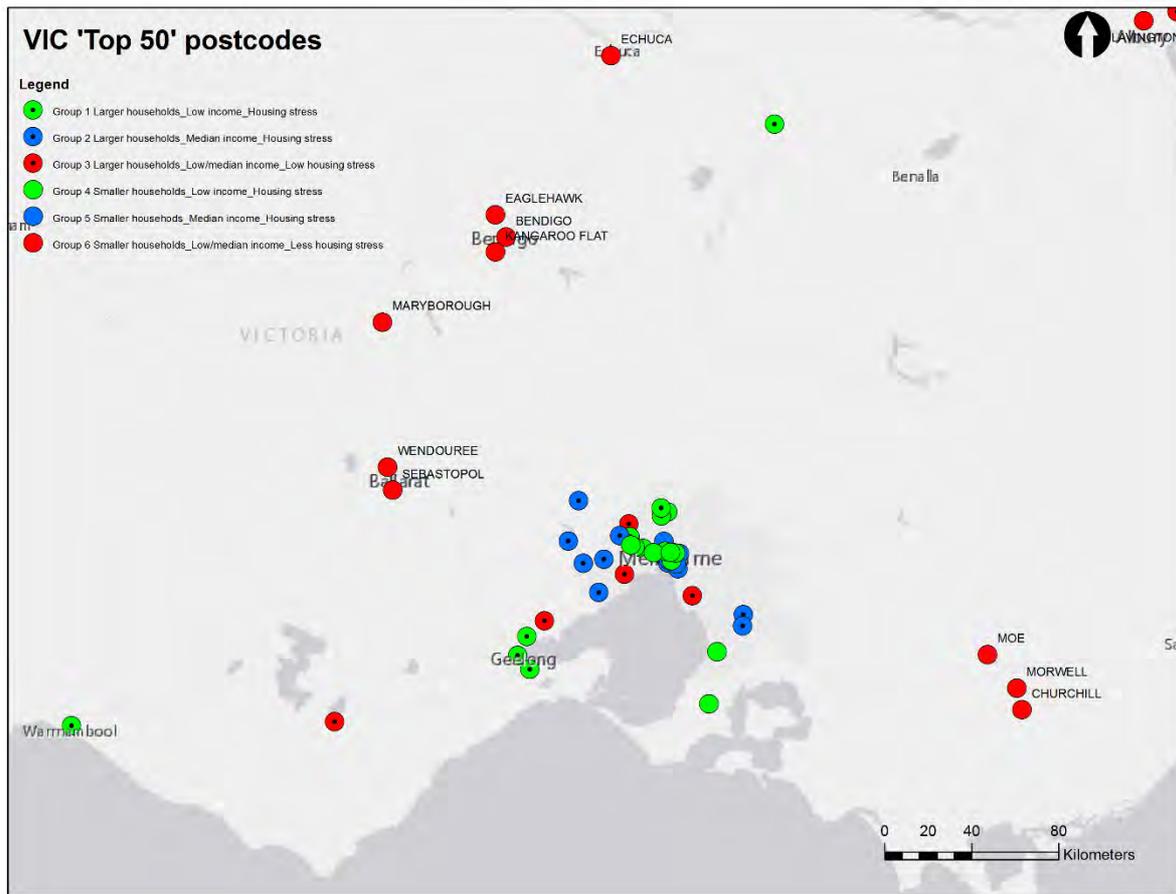


Table 23 Vic 'top 50' postcodes ranked from highest to lowest disconnection rates

Rank	Postcode	Name	Group
1	3022	ARDEER	4
2	3019	BRAYBROOK	1
3	3061	CAMPBELLFIELD	1
4	3021	ST ALBANS	1
5	3000	MELBOURNE	4
6	3008	DOCKLANDS	5
7	3214	CORIO	1
8	3020	SUNSHINE	1
9	3066	COLLINGWOOD	4
10	3840	MORWELL	6
11	3024	WYNDHAM VALE	2
12	3030	WERRIBEE	2
13	3338	MELTON SOUTH	2
14	3023	BURNSIDE	2
15	3337	MELTON	2

16	3065	FITZROY	5
17	3842	CHURCHILL	6
18	3205	SOUTH MELBOURNE	5
19	3189	MOORABBIN	3
20	3029	TARNEIT	2
21	3028	ALTONA MEADOWS	3
22	3047	BROADMEADOWS	1
23	3803	HALLAM	2
24	3200	FRANKSTON NORTH	4
25	3219	ST ALBANS PARK	1
26	3630	SHEPPARTON	1
27	3355	WENDOUREE	6
28	3051	NORTH MELBOURNE	4
29	3067	ABBOTSFORD	5
30	3011	FOOTSCRAY	4
31	3564	ECHUCA	6
32	3048	COOLAROO	1
33	3038	TAYLORS LAKES	3
34	3280	WARRNAMBOOL	1
35	3218	GEELONG WEST	1
36	3006	SOUTHBANK	5
37	3556	EAGLEHAWK	6
38	3555	KANGAROO FLAT	6
39	3181	PRAHRAN	5
40	3212	LARA	3
41	3141	SOUTH YARRA	5
42	3550	BENDIGO	6
43	3915	HASTINGS	4
44	3825	MOE	6
45	3465	MARYBOROUGH	6
46	3250	COLAC	3
47	3055	BRUNSWICK WEST	5
48	3356	SEBASTOPOL	6
49	3976	HAMPTON PARK	2
50	3053	CARLTON	4

Map 21 NSW: The 50 postcodes with the highest number of disconnections grouped according to the socio-economic factors used to characterise these areas

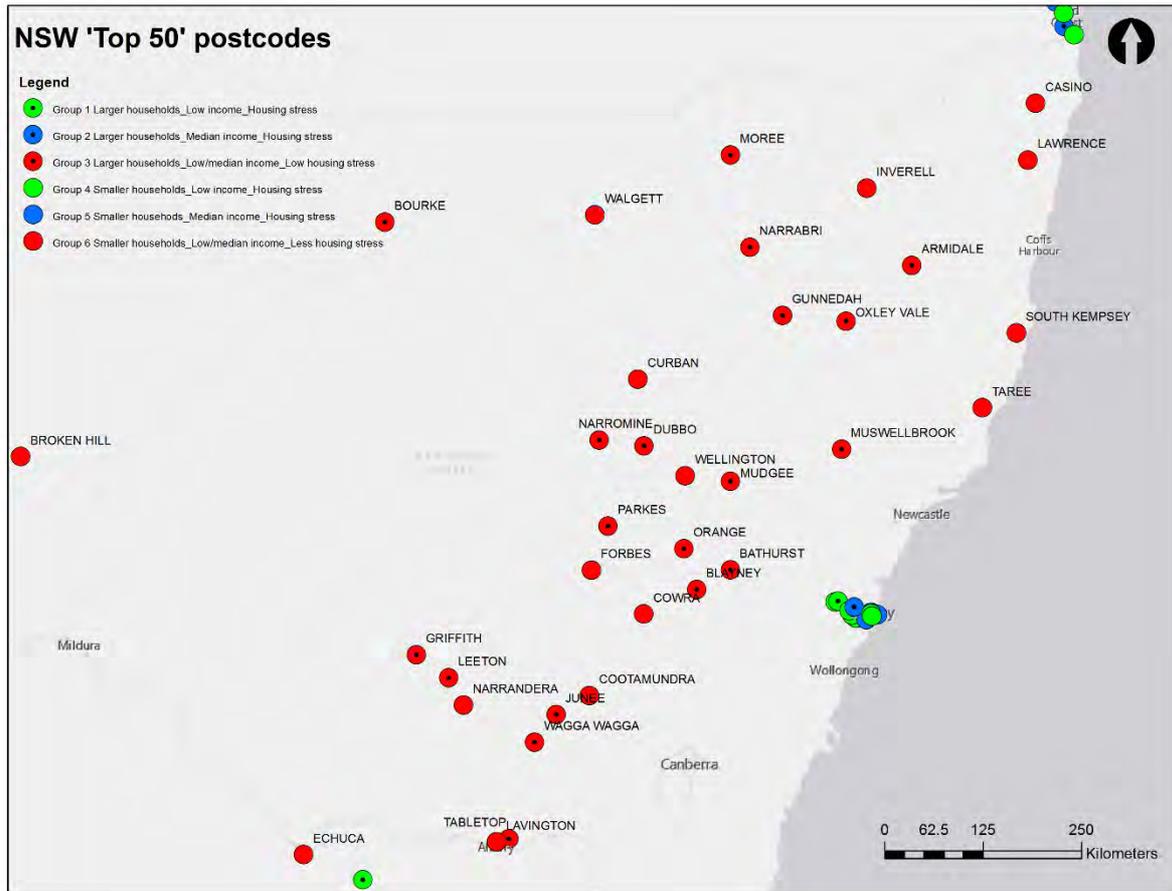


Table 24 NSW 'top 50' postcodes ranked from highest to lowest disconnection rates

Rank	Postcode	Name	Group
1	2400	MOREE	3
2	2800	ORANGE	3
3	2880	BROKEN HILL	6
4	2832	WALGETT	6
5	2663	JUNEE	3
6	2830	DUBBO	3
7	2705	LEETON	3
8	2641	LAVINGTON	6
9	2820	WELLINGTON	6
10	2680	GRIFFITH	3
11	2840	BOURKE	3
12	2000	SYDNEY	5
13	2827	CURBAN	6
14	2700	NARRANDERA	6
15	2795	BATHURST	3
16	2799	BLAYNEY	3

17	2440	SOUTH KEMPSEY	6
18	2821	NARROMINE	3
19	2640	TABLETOP	3
20	2871	FORBES	6
21	2870	PARKES	3
22	2650	WAGGA WAGGA	3
23	2770	HEBERSHAM	1
24	2205	ARNCLIFFE	2
25	2163	VILLAWOOD	1
26	2008	CHIPPENDALE	5
27	2360	INVERELL	6
28	2350	ARMIDALE	3
29	2390	NARRABRI	3
30	2340	OXLEY VALE	3
31	2760	COLYTON	1
32	2470	CASINO	6
33	2380	GUNNEDAH	3
34	2794	COWRA	6
35	2460	LAWRENCE	6
36	2850	MUDGEЕ	3
37	2017	WATERLOO	4
38	2333	MUSWELLBROOK	3
39	2485	TWEED HEADS	4
40	2164	WOODPARK	1
41	2150	PARRAMATTA	2
42	2009	PYRMONT	5
43	2590	COOTAMUNDRA	6
44	2142	HOLROYD	1
45	2160	MERRYLANDS	1
46	2430	TAREE	6
47	2200	BANKSTOWN	1
48	2026	BONDI BEACH	5
49	2161	GUILDFORD	1
50	2007	ULTIMO	4

Map 22 South East Queensland: The 50 postcodes with the highest number of disconnections grouped according to the socio-economic factors used to characterise these areas

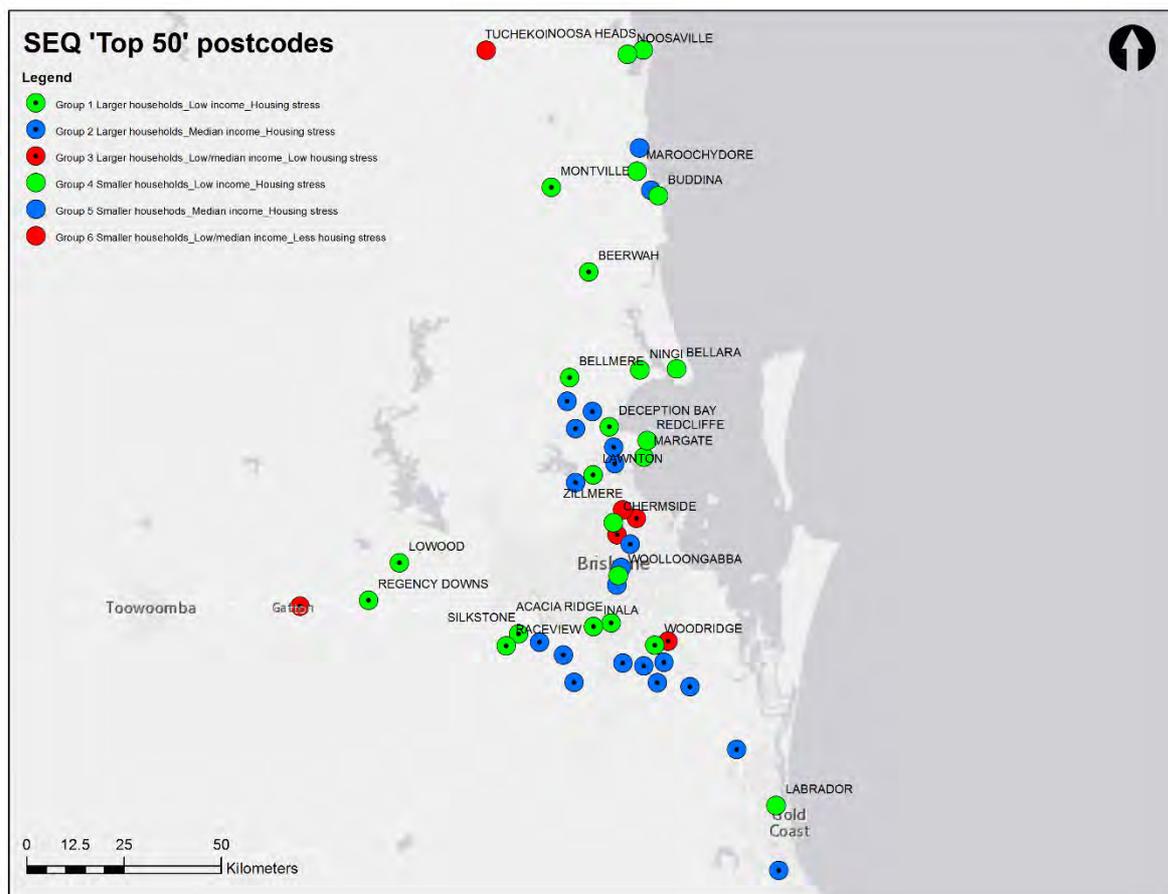


Table 25 SEQ 'top 50' postcodes ranked from highest to lowest disconnection rates

Rank	Postcode	Name	Group
1	4132	MARSDEN	2
2	4114	WOODRIDGE	1
3	4510	BELLMERE	1
4	4131	LOGANLEA	2
5	4501	LAWNTON	1
6	4506	MORAYFIELD	2
7	4508	DECEPTION BAY	1
8	4301	REDBANK PLAINS	2
9	4102	WOOLLOONGABBA	4
10	4209	PIMPAMA	2
11	4110	ACACIA RIDGE	1
12	4304	SILKSTONE	1
13	4133	WATERFORD	2
14	4019	MARGATE	4
15	4207	BEENLEIGH	2
16	4511	NINGI	4

17	4227	VARSITY LAKES	2
18	4519	BEERWAH	1
19	4567	NOOSA HEADS	4
20	4570	TUCHEKOI	6
21	4305	RACEVIEW	1
22	4077	INALA	1
23	4558	MAROOCHYDORE	4
24	4503	GRIFFIN	2
25	4300	SPRINGFIELD	2
26	4169	EAST BRISBANE	5
27	4564	MARCOOLA	5
28	4124	GREENBANK	2
29	4500	WARNER	2
30	4566	NOOSAVILLE	4
31	4504	NARANGBA	2
32	4343	GATTON	3
33	4032	CHERMSIDE	4
34	4118	REGENTS PARK	2
35	4505	BURPENGARY	2
36	4557	MOOLOOLABA	5
37	4014	VIRGINIA	3
38	4575	BUDDINA	4
39	4215	LABRADOR	4
40	4103	ANNERLEY	5
41	4007	ASCOT	2
42	4311	LOWOOD	1
43	4031	GORDON PARK	3
44	4127	DAISY HILL	3
45	4034	ZILLMERE	6
46	4509	MANGO HILL	2
47	4341	REGENCY DOWNS	1
48	4020	REDCLIFFE	4
49	4507	BELLARA	4
50	4560	MONTVILLE	1

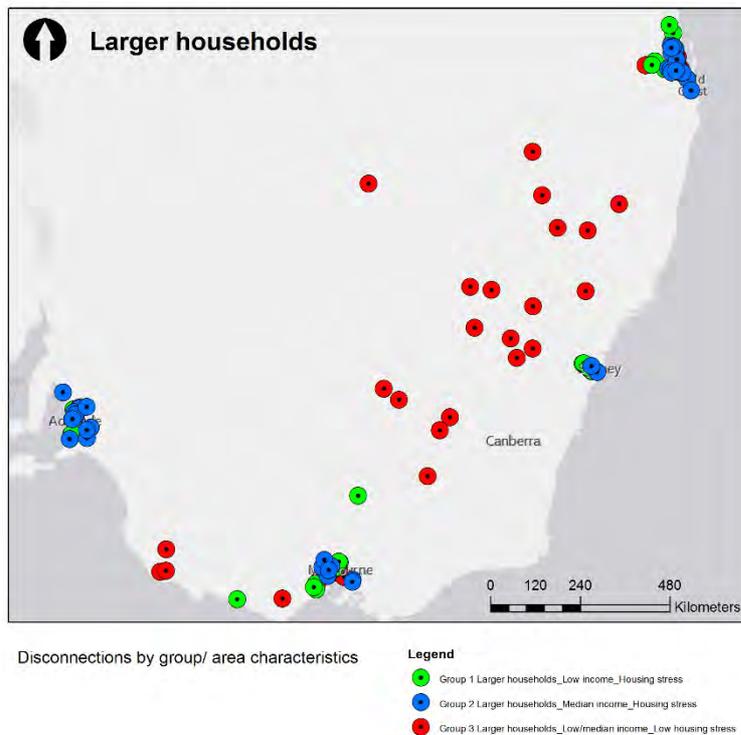
4.3 Geographic location and group characteristics

This section separately discusses location and characteristics of the high disconnection postcodes characterised as the larger (family) households (Group 1, 2 and 3) and the smaller households (Group 4, 5 and 6).

4.3.1 Larger households

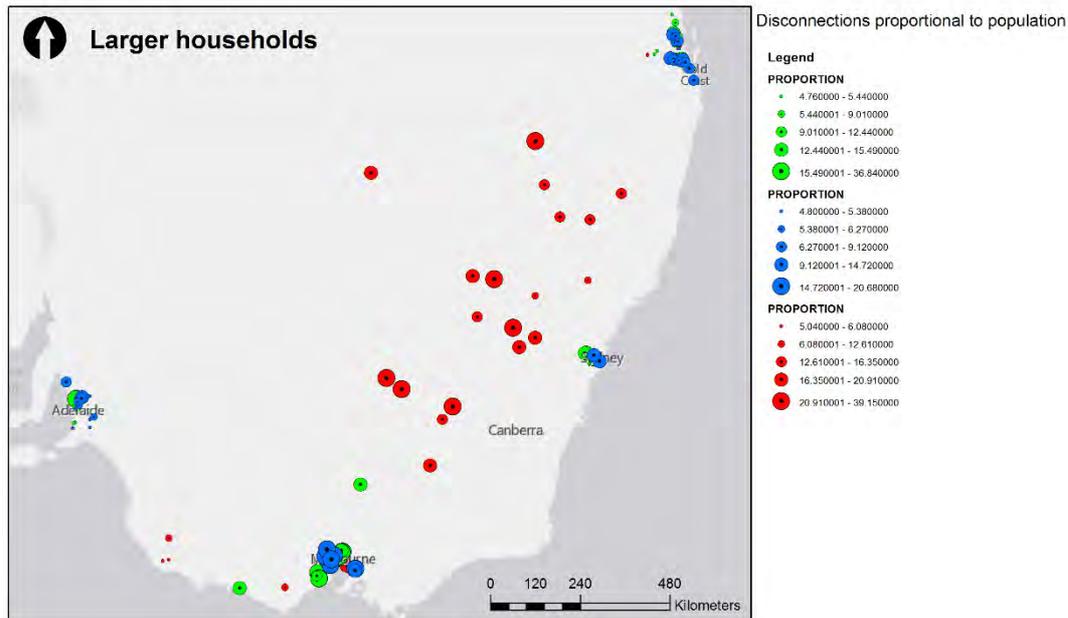
Groups 1, 2 and 3 have a higher proportion of large (family) households compared to groups 4, 5 and 6. Larger households are typically located in the outer suburbs and in regional centres. While they tend to have higher household incomes compared to smaller households, they also require larger houses and have higher food costs.

Map 23 The location of postcodes in the 'top 200' that are characterised as areas with larger households (groups 1, 2 and 3)



Map 24 below shows the same postcodes but the size of the circle indicates which postcodes have higher and lower disconnection numbers compared to the other postcodes in their group. For group 1 and 2, for example, the Melbourne postcodes have a higher proportion of disconnections, but for group 3, it is rural and regional NSW.

Map 24 Postcodes in the 'top 200' that are characterised as areas with larger households (groups 1, 2 and 3) and their relative disconnection numbers



The biggest group (41 out of 113 postcodes allocated to the large household category) is group 1; low income families experiencing housing stress. On average, these postcodes are made up of 43% couples with children and 23% sole parent families. In terms of income, 31% of households (on average) had gross weekly household income of \$600 or less. The median weekly household income for these postcodes is \$953. Housing stress is related to rent as well as mortgage repayments but rent is the dominant category

The majority of these postcodes are located in the suburbs of Adelaide, Melbourne, Sydney and Brisbane. Although the Victorian regional centres of Warrnambool, Geelong and Shepparton have also been included in this group due to their relative high proportion of family households.

Map 25 Group 1 postcodes and their relative disconnection numbers

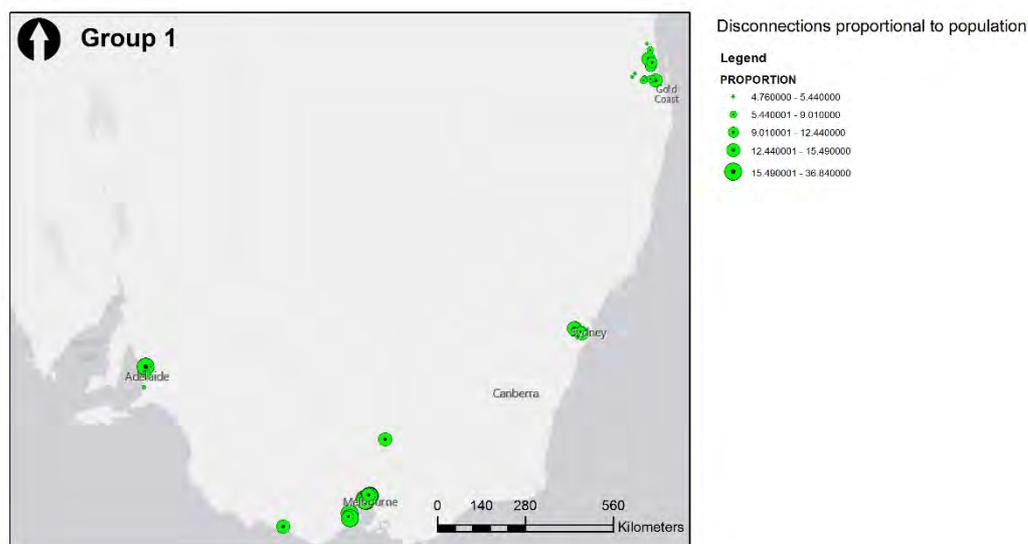


Table 26 below ranks all group 1 postcodes according to their disconnection rates (1 being the highest).

Table 26 Group 1 postcodes ranked from highest to lowest disconnection rates (proportional to population)

Rank	Postcode	Name	State
1	3019	BRAYBROOK	Vic
2	3061	CAMPBELLFIELD	Vic
3	3021	ST ALBANS	Vic
4	3214	CORIO	Vic
5	3020	SUNSHINE	Vic
6	5120	VIRGINIA	SA
7	3047	BROADMEADOWS	Vic
8	3219	ST ALBANS PARK	Vic
9	3630	SHEPPARTON	Vic
10	2770	HEBERSHAM	NSW
11	2163	VILLAWOOD	NSW
12	4114	WOODRIDGE	Qld
13	4510	BELLMERE	Qld
14	2760	COLYTON	NSW
15	3048	COOLAROO	Vic
16	3280	WARRNAMBOOL	Vic
17	3218	GEELONG WEST	Vic
18	2164	WOODPARK	NSW
19	4501	LAWNTON	Qld
20	2142	HOLROYD	NSW
21	2160	MERRYLANDS	NSW
22	2200	BANKSTOWN	NSW

23	2161	GUILDFORD	NSW
24	4508	DECEPTION BAY	Qld
25	4110	ACACIA RIDGE	Qld
26	4304	SILKSTONE	Qld
27	5013	WINGFIELD	SA
28	4519	BEERWAH	Qld
29	5012	WOODVILLE NORTH	SA
30	4305	RACEVIEW	Qld
31	4077	INALA	Qld
32	5084	KILBURN	SA
33	5108	PARALOWIE	SA
34	4311	LOWOOD	Qld
35	5163	HUNTFIELD HEIGHTS	SA
36	5168	OLD NOARLUNGA	SA
37	4341	REGENCY DOWNS	Qld
38	5031	MILE END	SA
39	4560	MONTVILLE	Qld
40	5116	EVANSTON	SA
41	5023	SEATON	SA

Three Geelong postcodes have been included in this group: Corio (3214), Geelong West (3218) and St Albans Park (3219). The western Melbourne suburbs of St Albans (3021), Sunshine (3020) and Braybrook (3019), as well as the northern suburbs of Coolaroo (3048), Campbelfield (3061) and Broadmeadows (3047) are the remainder of Victorian postcodes classified as group 1 postcodes.

Map 26 Group 1 postcodes in greater Melbourne and Geelong

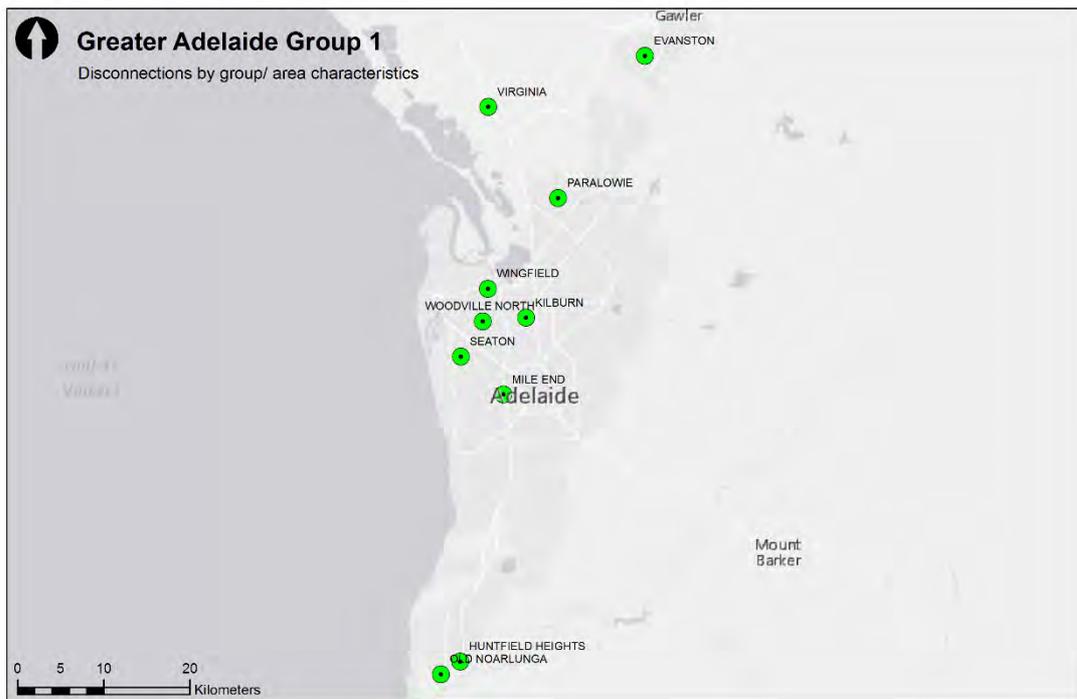


Legend

● Group 1 Larger households_Low income_Housing stress

In the greater Adelaide area postcodes classified as group 1 (larger households with low income and experiencing housing stress) are the postcodes of Evanston (5116), Virginia (5120), Paralowie (5108), Wingfield (5013), Woodville North (5012) and Kilburn (5084) in the suburbs north of Adelaide. It also includes the postcode of Seaton (5023) and Mile End (5031) in the west/inner west and Huntfield Heights (5163) and Old Noarlunga (5168) in the south.

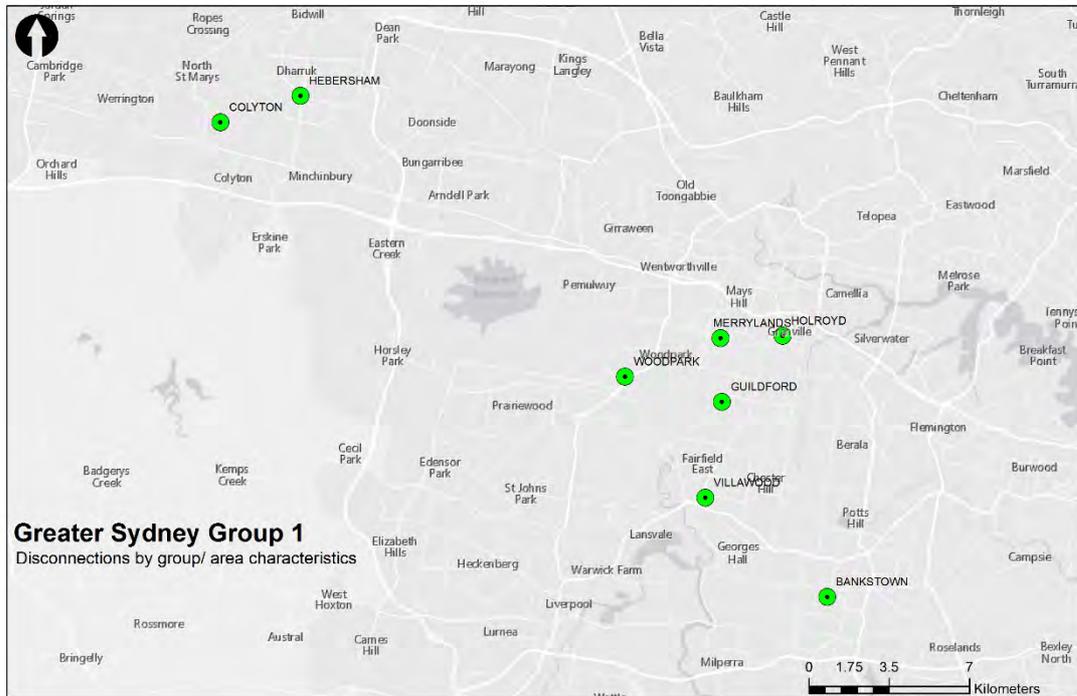
Map 27 Group 1 postcodes in greater Adelaide



Legend
● Group 1 Larger households_Low income_Housing stress

In NSW, all of the group 1 postcodes are located in the western suburbs of Sydney. The postcodes are: Bankstown (2200), Villawood (2163), Guildford (2161), Woodpark (2164), Merryland (2160), Holroyd (2142), Colyton (2760) and Hebersham (2770).

Map 28 Group 1 postcodes in greater Sydney

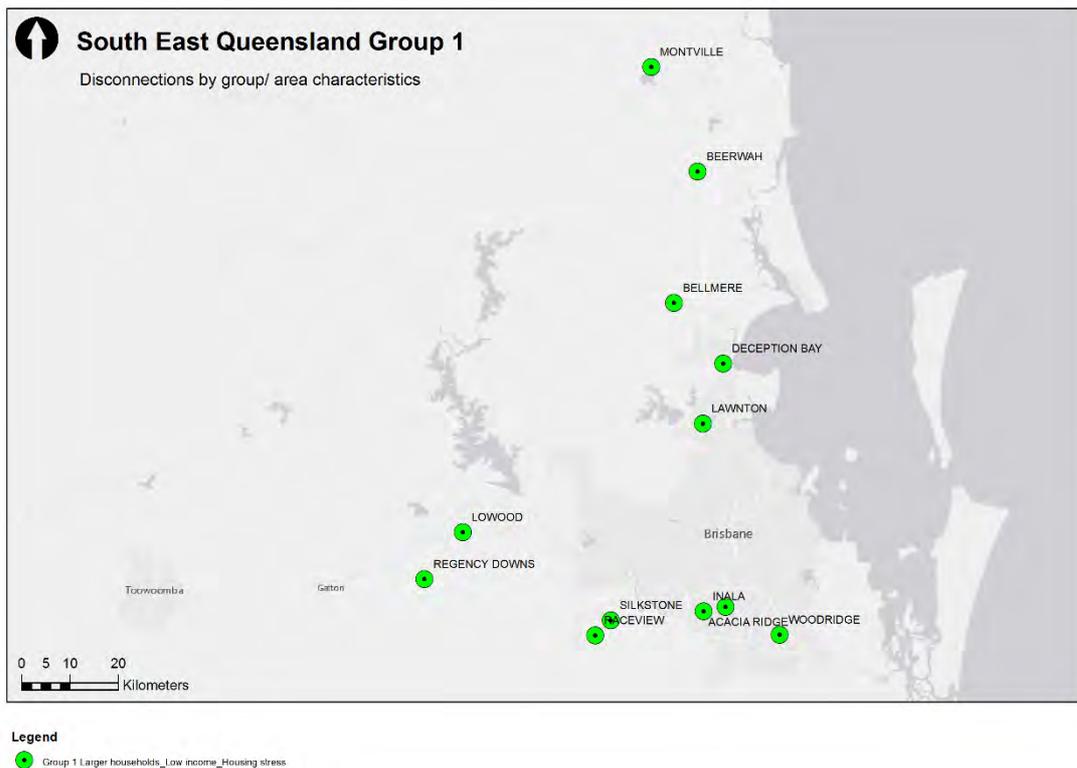


Legend

- Group 1 Larger households_Low income_Housing stress

In the more densely populated South East Queensland, group 1 postcodes include the southern Brisbane suburbs of Inala (4077) and Acacia Ridge (4110), the Ipswich postcodes of Raceview (4305) and Silkstone (4304), the inland postcodes of Regency Downs (4341) and Lowood (4311), the Morton Bay postcodes of Bellmere (4510), Deception Bay (4508) and Lawnton (4501), as well as the Sunshine Coast hinterland postcodes of Montville (4560) and Beerwah (4519).

Map 29 Group 1 postcodes in South East Queensland



Group 2, median income families experiencing housing stress, is also a large group (39 postcodes). Group 2 has more coupled families and less sole parents than group 1. It also has a higher median weekly income (\$1246) and, on average, 19% of households have income of less than \$600 per week. The housing stress occurring in these postcodes is largely due to high mortgage repayments. 44% of households have mortgages and the median monthly mortgage repayment is \$1773.

Queensland postcodes dominate this category while NSW only has two postcodes in this group. This may be partly explained by NSW predominantly having low income and regional postcodes in their 'top 50' and that median income for the South East Queensland postcodes may be overestimated because they are compared to Queensland's median income as a whole rather than the median income for SEQ. Both issues are discussed in section 4.1 above.

Map 30 Group 2 postcodes and their relative disconnection numbers

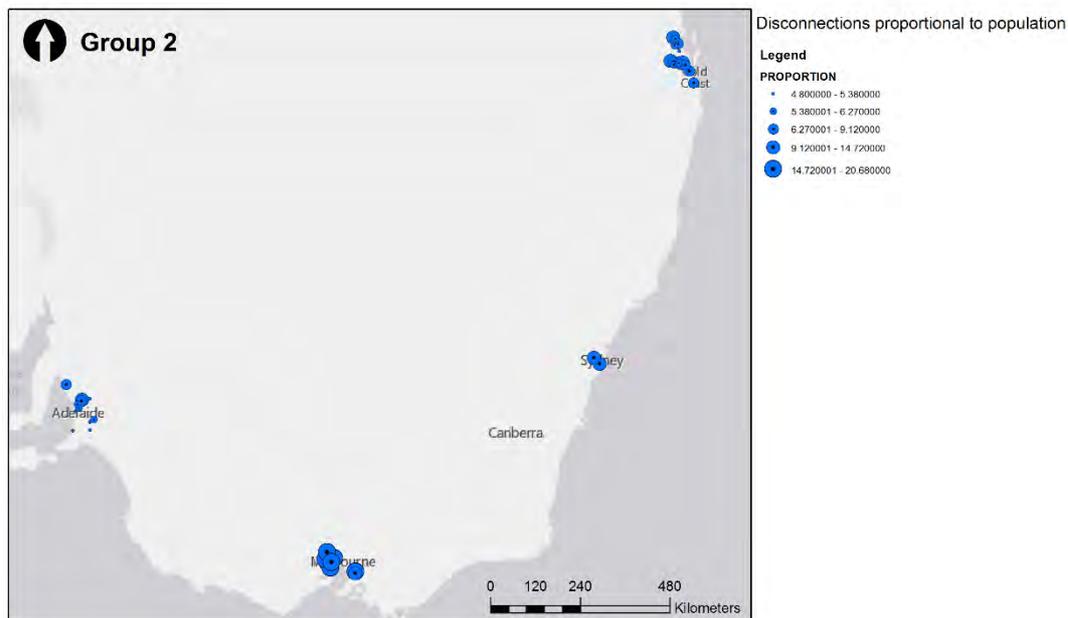


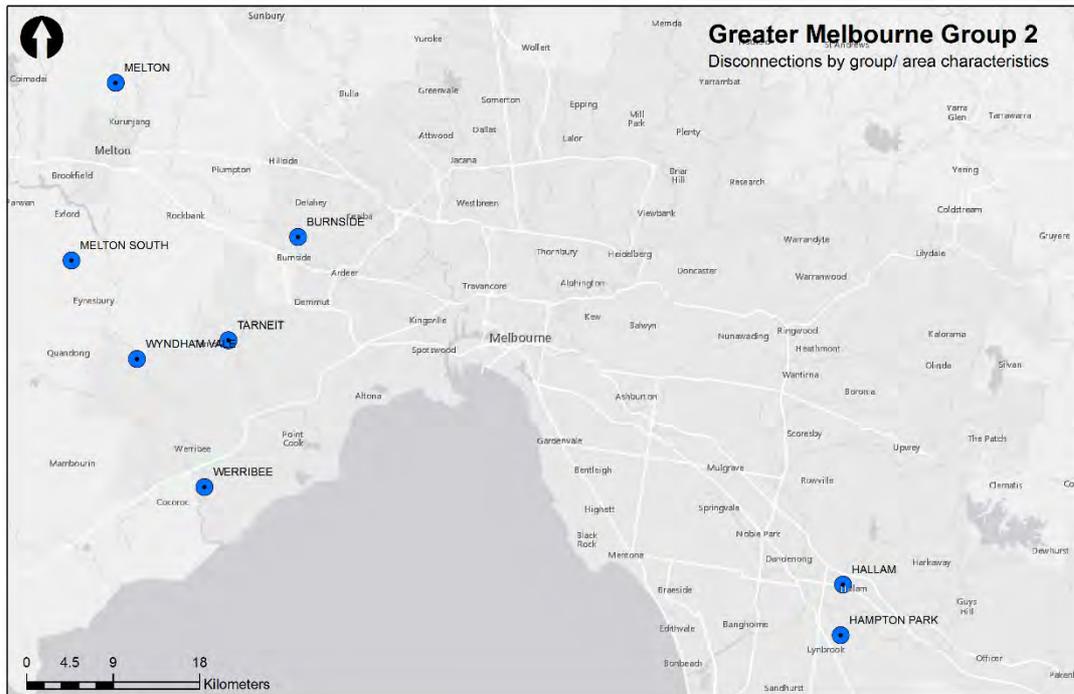
Table 27 below ranks all group 2 postcodes according to their disconnection rates (1 being the highest).

Table 27 Group 2 postcodes ranked from highest to lowest disconnection rates (proportional to population)

Rank	Postcode	Name	State
1	3024	WYNDHAM VALE	Vic
2	3030	WERRIBEE	Vic
3	3338	MELTON SOUTH	Vic
4	3023	BURNSIDE	Vic
5	3337	MELTON	Vic
6	3029	TARNEIT	Vic
7	3803	HALLAM	Vic
8	2205	ARNCLIFFE	NSW
9	4132	MARSDEN	Qld
10	4131	LOGANLEA	Qld
11	2150	PARRAMATTA	NSW
12	5115	KUDLA	SA
13	3976	HAMPTON PARK	Vic
14	4506	MORAYFIELD	Qld
15	4301	REDBANK PLAINS	Qld
16	4209	PIMPAMA	Qld
17	4133	WATERFORD	Qld
18	5114	SMITHFIELD PLAINS	SA
19	5501	WILD HORSE PLAINS	SA
20	4207	BEENLEIGH	Qld
21	4227	VARSITY LAKES	Qld
22	4503	GRIFFIN	Qld
23	4300	SPRINGFIELD	Qld
24	4124	GREENBANK	Qld
25	4500	WARNER	Qld
26	5095	MAWSON LAKES	SA
27	4504	NARANGBA	Qld
28	5110	BURTON	SA
29	4118	REGENTS PARK	Qld
30	4505	BURPENGARY	Qld
31	5252	KANMANTOO	SA
32	4007	ASCOT	Qld
33	5255	STRATHALBYN	SA
34	4509	MANGO HILL	Qld
35	5107	PARAFIELD GARDENS	SA
36	5251	MOUNT BARKER	SA
37	5173	PORT WILLUNGA	SA
38	5351	COCKATOO VALLEY	SA
39	5011	WOODVILLE SOUTH	SA

In Victoria, postcodes that have been characterised as group 2 postcodes are all in the outer suburbs of Melbourne. In the south east, there are the postcodes of Hallam (3803) and Hampton Park (3976) and in the west/ north west there are the areas of Melton (3337), Melton South (3338), Burnside (3023), Wyndham Vale (3024), Tarneit (3029) and Werribee (3030).

Map 31 Group 2 postcodes in greater Melbourne



Legend
 • Group 2 Larger households_Median income_Housing stress

In South Australia group 2 consists of a mix of Adelaide suburbs and smaller regional towns. It covers the central Adelaide suburb of Woodville South (5011), the northern suburbs of Mawson Lakes (5095), Parafield Gardens (5107), Burton (5110), Smithfield Plains (5114) and Kudla (5115). It also includes Cockatoo Valley (5351) in the Barossa, Wild Horse Plains (5501) on the eastern shore of Gulf St Vincent, Port Willunga (5173) and Strathalbyn (5255) on the Fleurieu Peninsula as well as Mount Barker (5251) and Kanmantoo (5252) in the Adelaide Hills.

Map 32 Group 2 postcodes in greater Adelaide

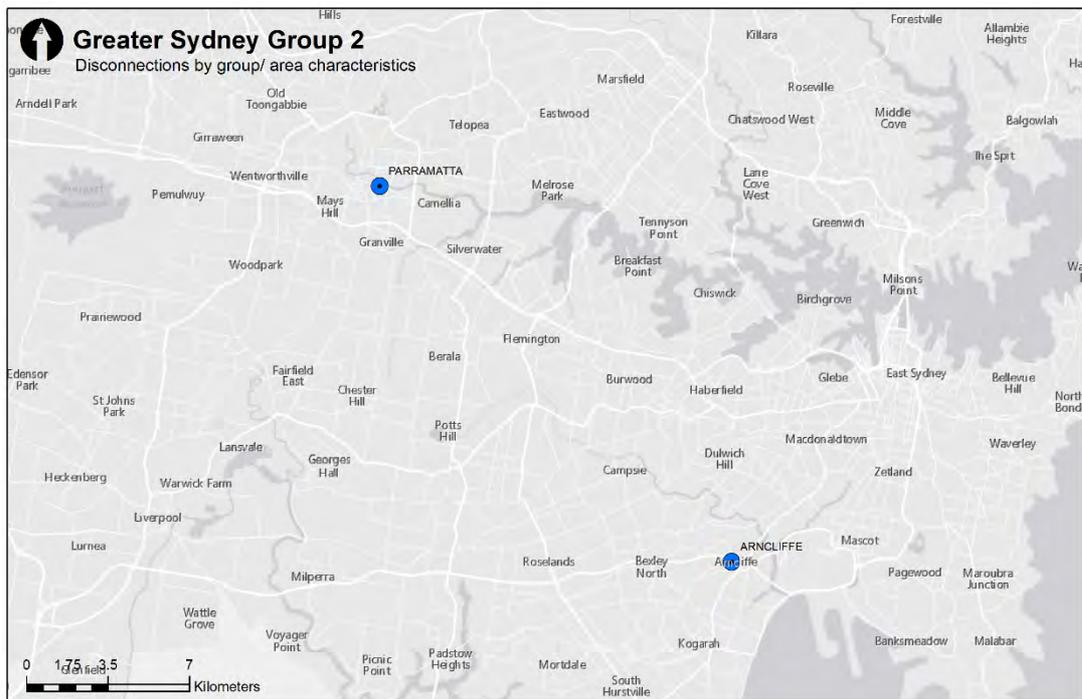


Legend

● Group 2 Larger households_Median income_Housing stress

The only two NSW postcodes that have been classified as group 2 are the Sydney suburbs of Parramatta (2150) and Arncliffe (2205).

Map 33 Group 2 postcodes in greater Sydney



Legend

- Group 2 Larger households_Median income_Housing stress

South East Queensland have 17 postcodes in this group and it includes the Gold Coast suburbs of Varsity Lakes (4227) and Pimpama (4209), the southern Brisbane suburbs of Beenleigh (4207), Waterford (4133), Loganlea (4131), Greenbank (4124), Regents Park (4118), Marsden (4132), Springfield (4300) and Redbank Plains (4301). It also includes the central Brisbane postcode of Ascot (4007) as well as Morayfield (4506), Burpengary (4505), Narangba (4504), Mango Hill (4509), Griffin (4503), and Warner (4500) north of Brisbane.

Map 34 Group 2 postcodes in South East Queensland



Legend
 • Group 2 Larger households_Median income_Housing stress

Group 3, low to median income families with lower housing costs but higher transportation costs, is the smallest of the three family groups. These families typically reside in regional and rural towns with relatively low housing costs (median weekly rent being \$200 and median monthly mortgage repayment being \$1500) but while their median weekly income is greater compared to group 1, it remains modest on \$1074. Furthermore, while this group does not typically experience housing stress they do typically have greater transport costs due to their dependence on private cars for transportation. NSW has the most postcodes in this group as well as the postcodes with the relatively higher disconnection numbers.

Map 35 Group 3 postcodes and their relative disconnection numbers

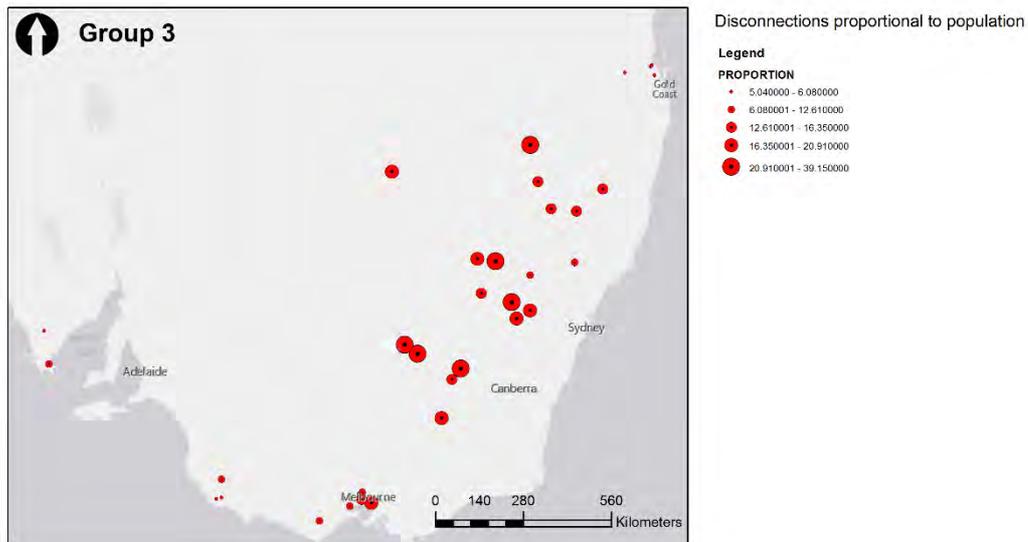


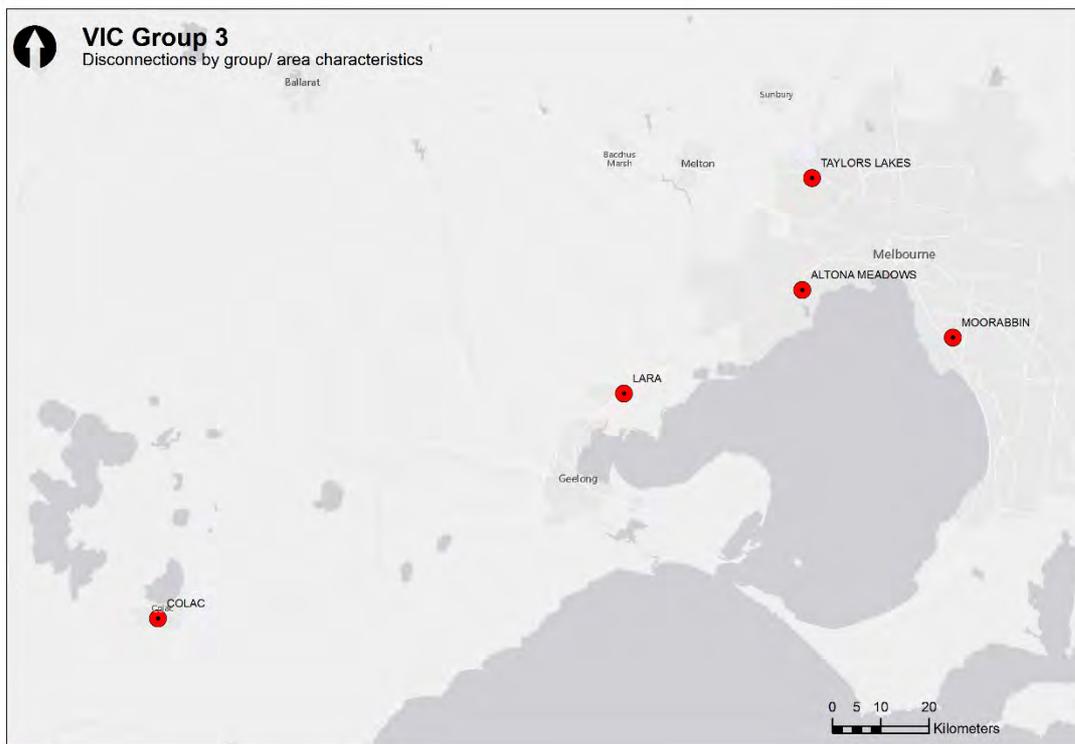
Table 28 below ranks all group 3 postcodes according to their disconnection rates (1 being the highest).

Table 28 Group 3 postcodes ranked from highest to lowest disconnection rates (proportional to population)

Rank	Postcode	Name	State
1	2400	MOREE	NSW
2	2800	ORANGE	NSW
3	2663	JUNEE	NSW
4	2830	DUBBO	NSW
5	2705	LEETON	NSW
6	2680	GRIFFITH	NSW
7	2840	BOURKE	NSW
8	2795	BATHURST	NSW
9	2799	BLAYNEY	NSW
10	2821	NARROMINE	NSW
11	2640	TABLETOP	NSW
12	3189	MOORABBIN	Vic
13	3028	ALTONA MEADOWS	Vic
14	2870	PARKES	NSW
15	2650	WAGGA WAGGA	NSW
16	2350	ARMIDALE	NSW
17	2390	NARRABRI	NSW
18	2340	OXLEY VALE	NSW
19	2380	GUNNEDAH	NSW
20	3038	TAYLORS LAKES	Vic
21	2850	MUDGEES	NSW
22	2333	MUSWELLBROOK	NSW
23	3212	LARA	Vic
24	3250	COLAC	Vic
25	5606	PORT LINCOLN	SA
26	5277	PENOLA	SA
27	5607	KARKOO	SA
28	4343	GATTON	Qld
29	4014	VIRGINIA	Qld
30	5291	COMPTON	SA
31	4031	GORDON PARK	Qld
32	4127	DAISY HILL	Qld
33	5290	MOUNT GAMBIER	SA

Only five Victorian postcodes have been included in this group, and three of them are suburban postcodes with relatively low levels of housing stress. The Melbourne suburbs of Moorabbin (3189), Altona Meadows (3028) and Taylors Lakes (3038) have relatively high median incomes and less housing stress, compared to other Melbourne suburbs with high disconnection numbers. However, we believe that these suburbs are more mixed when it comes to age groups and life-cycle stages. While households with children are prevalent there is also a relatively high number of households that own their homes outright. This indicates that the postcodes have a mix of young families, families with older children and the elderly. The Victorian postcodes of Lara (3212) and Colac (3250), on the other hand, are more typical for what we expected to find for this group. Housing stress is relatively low but cost of transportation is higher.

Map 36 Group 3 postcodes in Victoria



Legend
 ● Group 3 Larger households_Low/median income_Low housing stress

In South Australia, five postcodes have been allocated to this group. Two postcodes on the Eyre Peninsula, Port Lincoln (5606) and Karkoo (5607), and three postcodes in the Limestone Coast region close to the Victorian border: Mount Gambier (5290), Penola (5277) and Compton (5291).

Map 37 Group 3 postcodes in South Australia

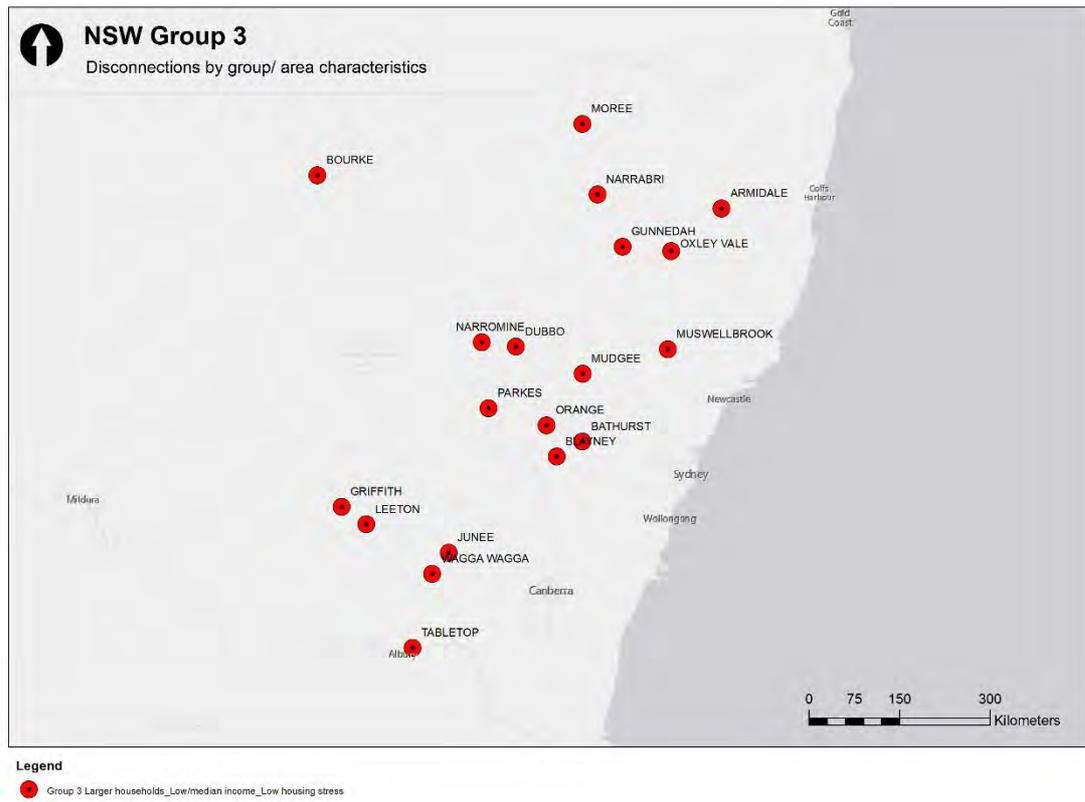


Legend

- Group 3 Larger households_Low/median income_Low housing stress

NSW has the highest number of postcodes for this group. The majority of these postcodes are located in regional centres across NSW. From Albury (postcode Tabletop 2640) close to the Victorian border, to Wagga Wagga and (2650) Griffith (2680) in the Riverina region, to Bourke (2840) in the north-west, to Moree (2400) in northern NSW, to Armidale (2350) in the northern Tablelands, to Dubbo (2380) and Parkes (2870) on the western plains to Bathurst (2795) and Orange (2800) in the central Tablelands. Other regional towns are Leeton (2705), Junee (2663), Gunnedah (2380), Narrabri (2390), Blayney (2799), Narromine (2821), Mudgee (2850), Oxley Vale (2340) and Muswellbrook (2333).

Map 38 Group 3 postcodes in NSW



South East Queensland have four postcodes allocated to this group. Gatton (4343) in the Lockyer Valley and the suburban postcodes of Virginia (4014), Gordon Park (4031) and Daisy Hill (4127).

Map 39 Group 3 postcodes in South East Queensland



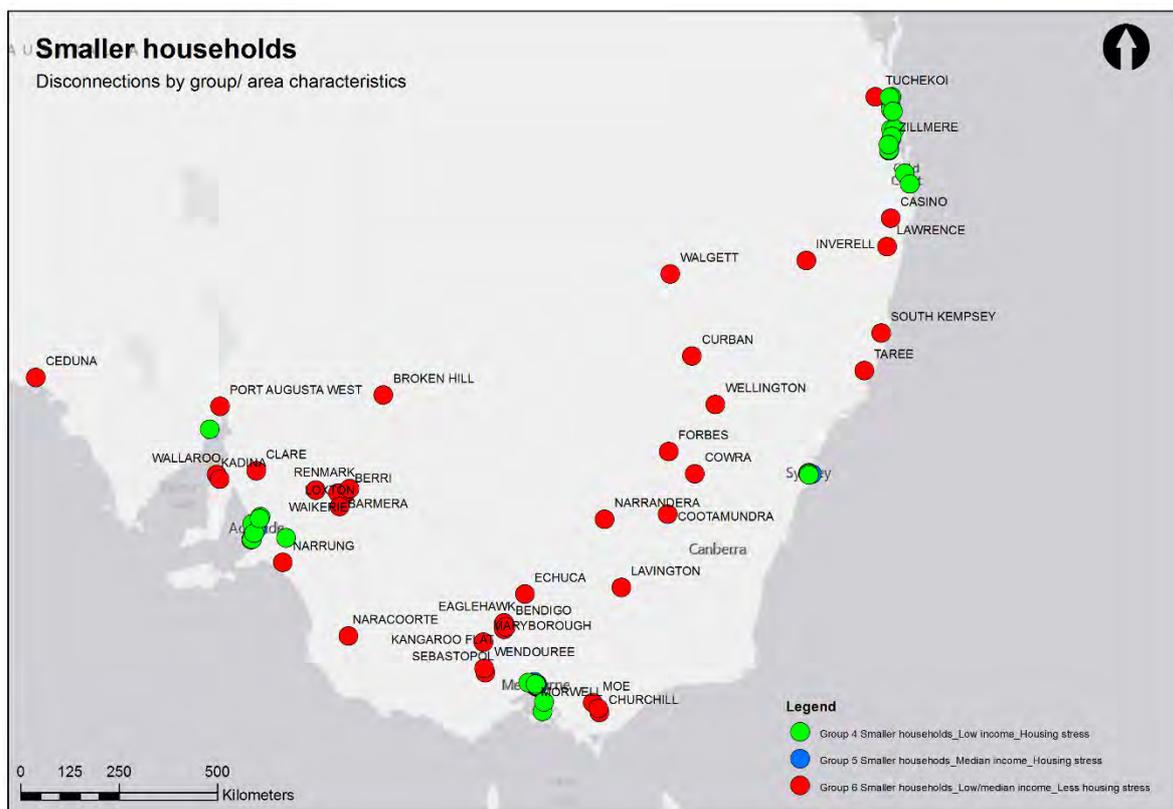
Legend
● Group 3 Larger households_Low/median income_Low housing stress

4.3.2 Smaller households

Groups 4, 5 and 6 have a higher proportion of small households compared to groups 1, 2 and 3. Smaller households are typically found close to tertiary education (students), in inner-city areas with high concentration of apartments (couples without children and sole parents) and in regional and rural towns (retirees and sole parents). The St Vincent de Paul Society’s Relative Price Index study has highlighted concerns in regards to cost pressures, and housing in particular, faced by smaller households:

“There are also concerns for one parent families and lone person households that are reliant on private rental. Not only have this group seen higher cost pressures, but a significant number of households in this group are in the lower income quintiles and as such have limited ability to adjust to changes in such cost pressures.”³⁵

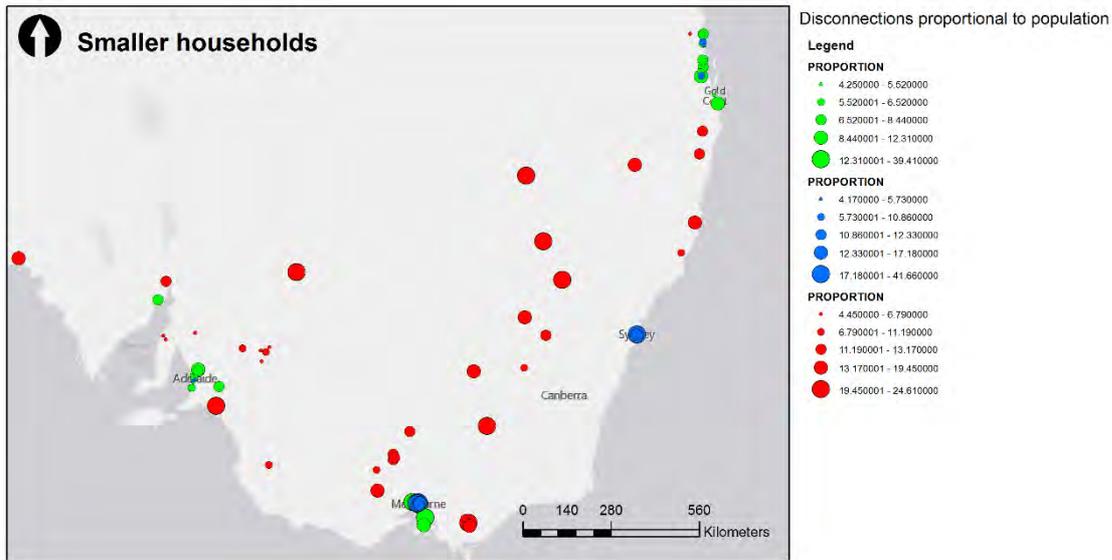
Map 40 The location of postcodes in the ‘top 200’ that are characterised as areas with smaller households (groups 4, 5 and 6)



Map 41 below shows the same postcodes but the size of the circle indicates which postcodes have higher and lower disconnection numbers compared to the other postcodes in their group. South Australia, Victoria and, in particular, NSW, for example, all have group 3 postcodes with a high proportion of disconnections compared to South East Queensland.

³⁵ St Vincent de Paul Society, *The Relative Price Index* by Gavin Dufty and Ian Macmillan, February 2013, 105

Map 41 Postcodes in the 'top 200' that are characterised as areas with smaller households (groups 4, 5 and 6) and their relative disconnection numbers



Group 4, low-income small households experiencing housing stress, is the second largest small household group (31 postcodes). This group includes a mix of students, younger couples, sole parents and retirees. In Melbourne (3000), Carlton (3053), Ultimo (2007) and Woolloongabba (4102) the median age is considerably lower compared to the respective state's median age. Housing costs are high in these CBD and inner city postcodes and as 28% - 49% of the population in these postcodes had weekly household incomes of less than \$600 per week, housing stress is a common experience. We also note that a higher proportion of disconnections in these areas is likely to include customers that do not reconnect in the same name, so-called "skippers", as the population is more transient.

This group also includes the inner-city locations in Sydney and Melbourne of Waterloo (2017), North Melbourne (3051) and Collingwood (3066). These postcodes have a mix of high private rental and public housing estates, resulting in a high proportion of households with weekly income below \$600 despite also having many high-income earners. The high rents, however, mean that many of the higher income earners still experience housing stress. In Waterloo and North Melbourne, for example, 26% of households spend 30% or more of household income on rent.

Map 42 Group 4 postcodes and their relative disconnection numbers

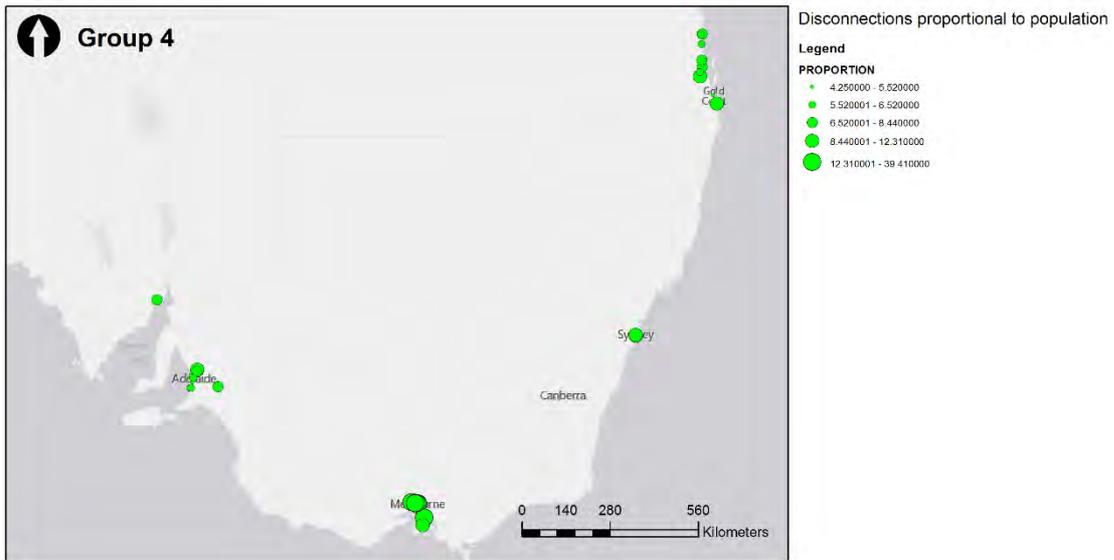


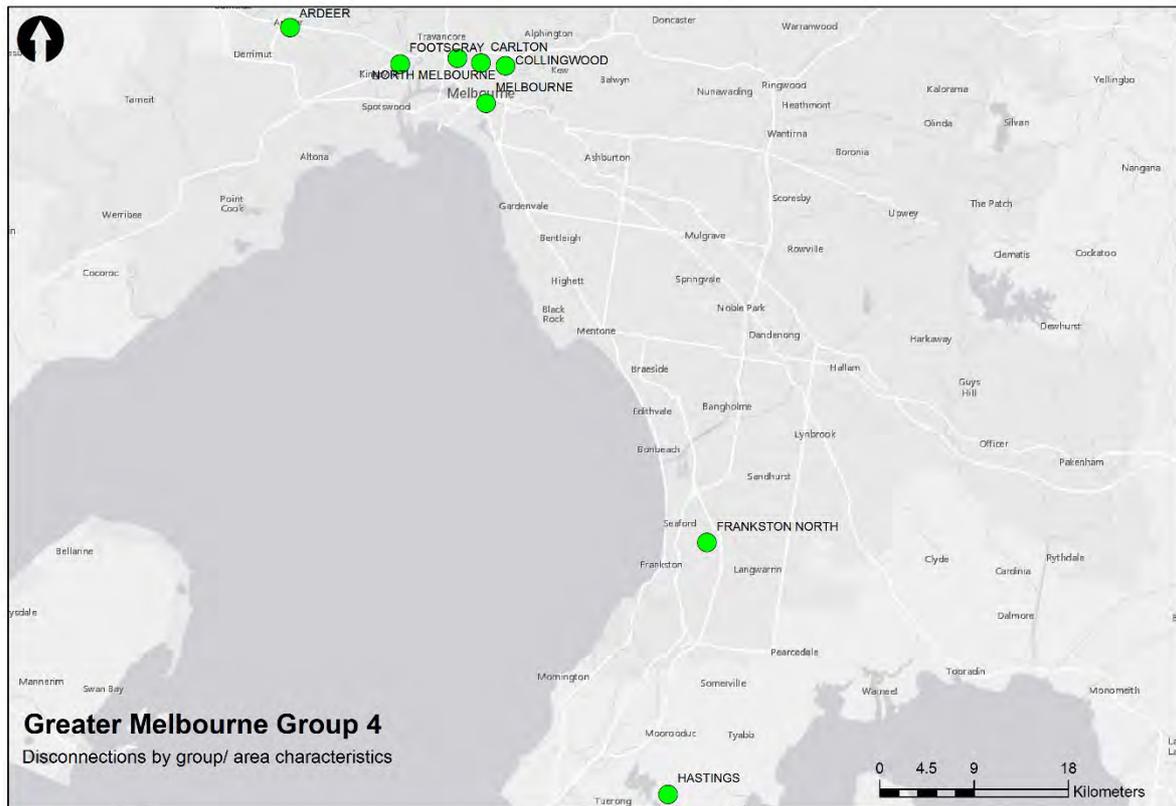
Table 29 below ranks all group 4 postcodes according to their disconnection rates (1 being the highest).

Table 29 Group 4 postcodes ranked from highest to lowest disconnection rates (proportional to population)

Rank	Postcode	Name	State
1	3022	ARDEER	Vic
2	3000	MELBOURNE	Vic
3	3066	COLLINGWOOD	Vic
4	3200	FRANKSTON NORTH	Vic
5	3051	NORTH MELBOURNE	Vic
6	3011	FOOTSCRAY	Vic
7	2017	WATERLOO	NSW
8	2485	TWEED HEADS	NSW
9	5113	ELIZABETH PARK	SA
10	3915	HASTINGS	Vic
11	3053	CARLTON	Vic
12	2007	ULTIMO	NSW
13	4102	WOOLLOONGABBA	Qld
14	5608	WHYALLA STUART	SA
15	5253	NORTHERN HEIGHTS	SA
16	5112	ELIZABETH VALE	SA
17	4019	MARGATE	Qld
18	4511	NINGI	Qld
19	4567	NOOSA HEADS	Qld
20	4558	MAROOCHYDORE	Qld
21	4566	NOOSAVILLE	Qld
22	5165	CHRISTIES BEACH	SA
23	5007	BROMPTON	SA
24	4032	CHERMSIDE	Qld
25	5164	CHRISTIE DOWNS	SA
26	4575	BUDDINA	Qld
27	4215	LABRADOR	Qld
28	5015	BIRKENHEAD	SA
29	4020	REDCLIFFE	Qld
30	4507	BELLARA	Qld
31	5046	WARRADALE	SA

Victoria has a total of eight postcodes in this group. Five of them are inner-city postcodes: Melbourne (3000), North Melbourne (3051), Carlton (5053) Collingwood (3066) and Footscray (3011). The outer south eastern suburb of Frankston North (3200) that has a high number of sole parents as well as more elderly residents is also included in this group. The two final postcodes are the western suburb of Ardeer (3022) and Hastings (3915) on the Mornington Peninsula. They both have a similar mix to Frankston North although a somewhat younger population and a higher number of couple families in the mix.

Map 43 Group 4 postcodes in greater Melbourne

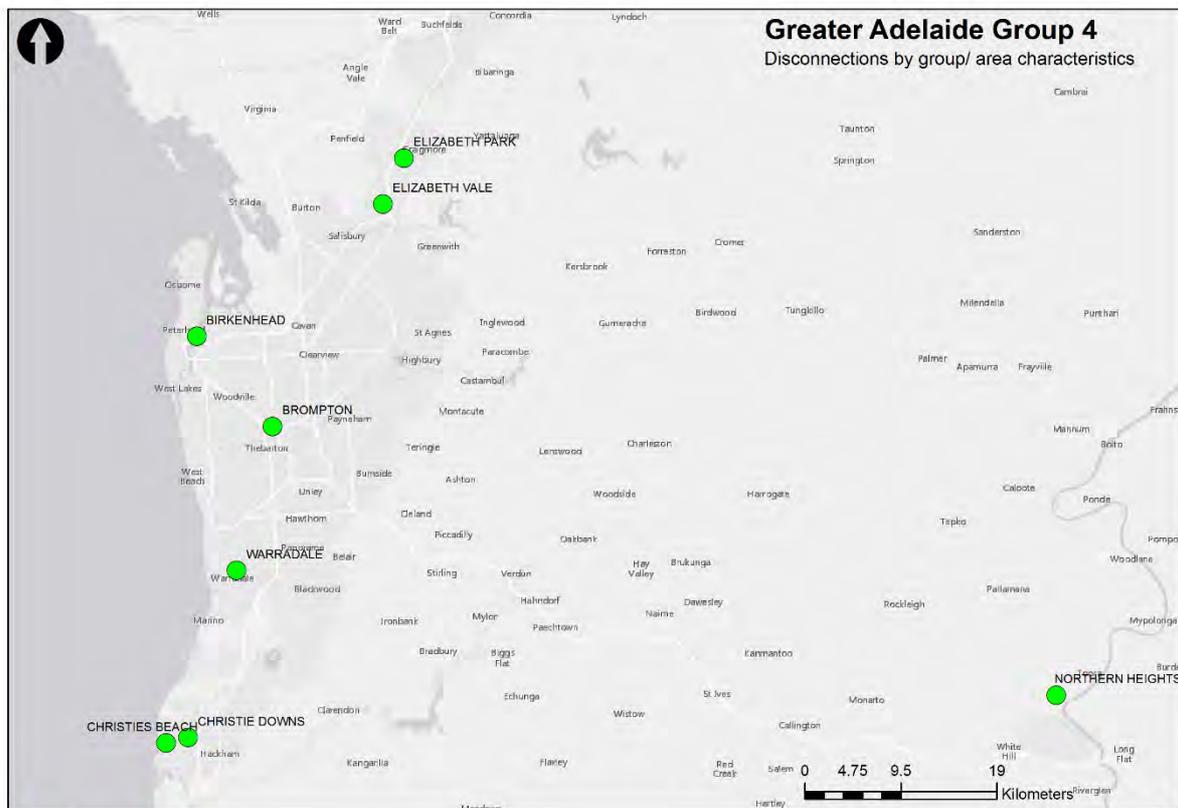


Legend
 ● Group 4 Smaller households_Low income_Housing stress

In South Australia we have allocated the postcode of Whyalla Stuart (5608) on the east coast of the Eyre Peninsula. The postcode has a relatively high number of sole parents and couples where both partners are not working (indicating retirees). In terms of Adelaide and surrounds we have included the following eight postcodes: Elizabeth Park (5113) and Elizabeth Vale (5112) in the northern suburbs, Birkenhead (5015) in Port Adelaide, the inner city postcode of Brompton (5007), the southern suburb of Warradale (5046), the outer southern suburbs of Christies Beach (5165) and Christies Downs (5164). The final postcode is Northern Heights (5253) on the Murray River.

All of these postcodes, except Brompton, have a relatively high proportion of sole parents as well as elderly residents. Although we stress that there are variations between the postcodes. Brompton, for example, has a younger population and a relatively high proportion of tenants experiencing housing stress.

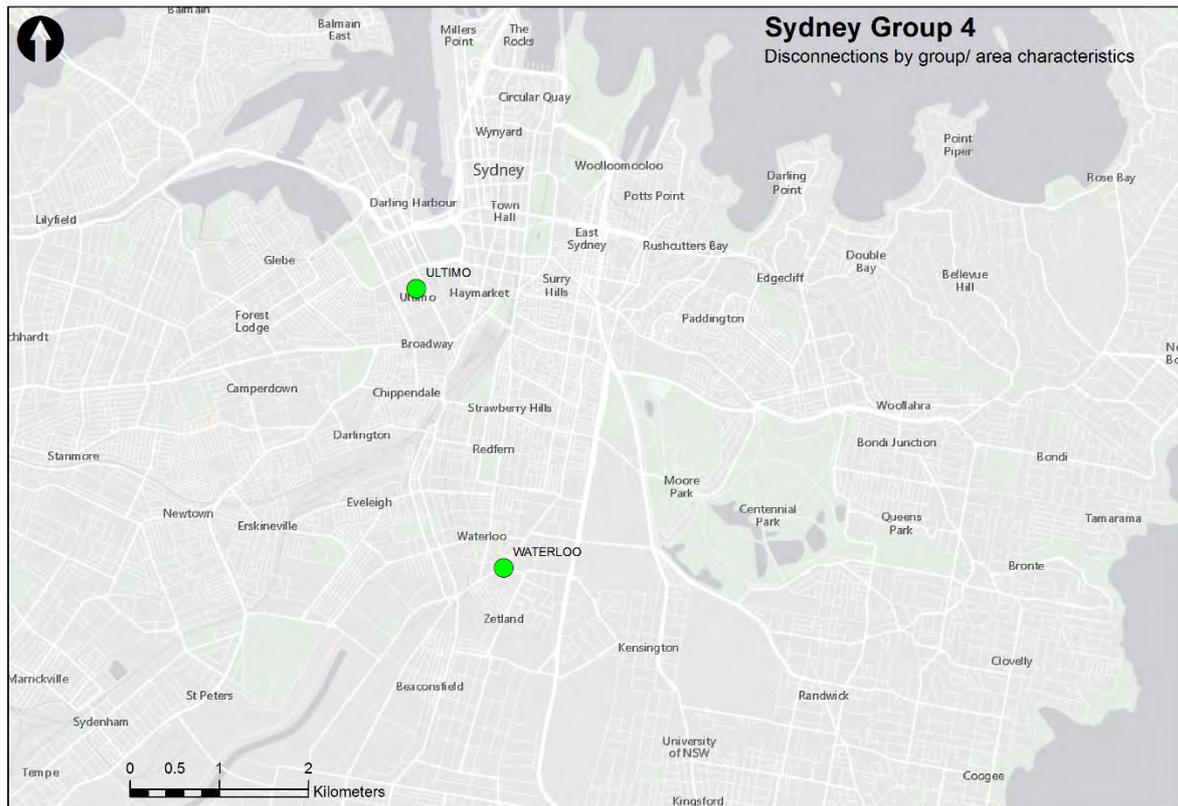
Map 44 Group 4 postcodes in greater Adelaide



Legend
 ● Group 4 Smaller households_Low income_Housing stress

We have only allocated three NSW postcodes to this group. Tweed Heads (2485), near the Gold Coast (not included in the map below), has a high median age and a high proportion of couples where both partners are not working. At the same time it has a relatively high proportion of tenants experiencing housing stress. In inner city Sydney, the postcodes of Ultimo (2007) and Waterloo (2017) have a younger population and a high proportion of tenants experiencing housing stress.

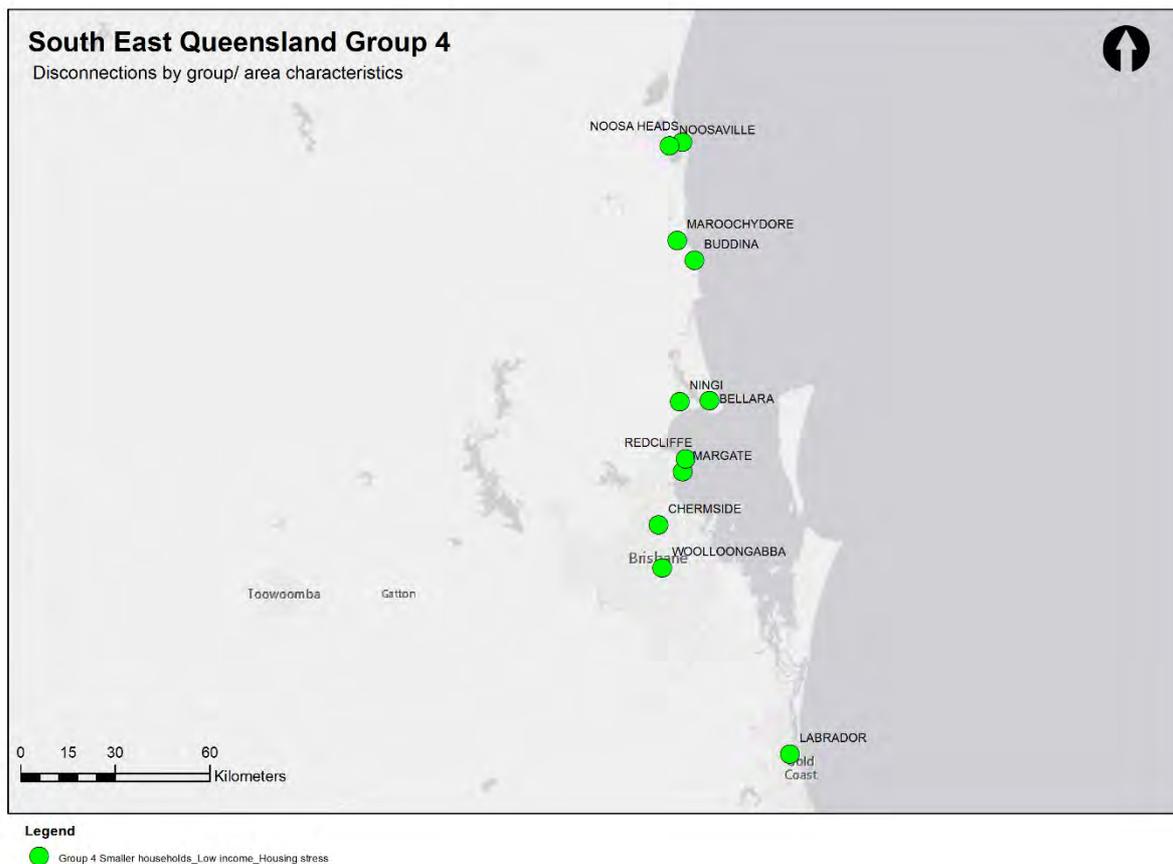
Map 45 Group 4 postcodes in Sydney



Legend
 ● Group 4 Smaller households_Low income_Housing stress

In the Queensland postcodes of Noosaville (4566), Bellara (4507), Maroochydore (4558), Noosa Heads (4567), Ningsi (4511), Margate (4019), Redcliffe (4020) and Buddina (4575), the median age is significantly higher than Queensland’s median age (36) as well as having a greater proportion of couple households where both are not working. This indicates that these postcodes have a high number of retirees. Despite a higher proportion of households owning their homes outright in these postcodes compared to the CBD and inner-city postcodes discussed above, housing stress is prevalent and the majority is in relation to rentals. In Labrador (4215) and Chermside (4032) the median age is lower and there is a greater mix of young households, sole parents and elderly households. The final postcode is the inner city area of Woolloongabba (4102) where the median age (31) is considerably lower but nearly 60% of households rent their homes and housing stress is high.

Map 46 Group 4 postcodes in South East Queensland



Group 5, small households with median income experiencing housing stress, is somewhat similar to group 4 as it includes a mix of students and younger couples. While the median weekly income for this group is \$1,522 the income distribution shows that the top earning quartile accounts for a much smaller proportion of earners than the lowest earning quartile. In Sydney (postcode 2000), for example, the highest income quartile (earning \$75,000 per annum or more) accounts for approximately 20% of earners while the lowest quartile (earning less than \$21,400) accounts for 45% of earners.³⁶

This group includes the inner-city postcodes of Sydney (2000), Chippendale (2008), Pyrmont (2009), Bondi Beach (2026), Fitzroy (3065), Docklands (3008), Southbank (3006), South Melbourne (3205), South Yarra (3141), Prahran (3181) Abbotsford (3067), Glenelg East (5045) Annerley (4103) and East Brisbane (4169).

The median rent for these postcodes is \$365 per week and housing stress caused by high rent relative to income is greater than the states' averages in all postcodes except Abbotsford (3067).

Map 47 Group 5 postcodes and their relative disconnection numbers

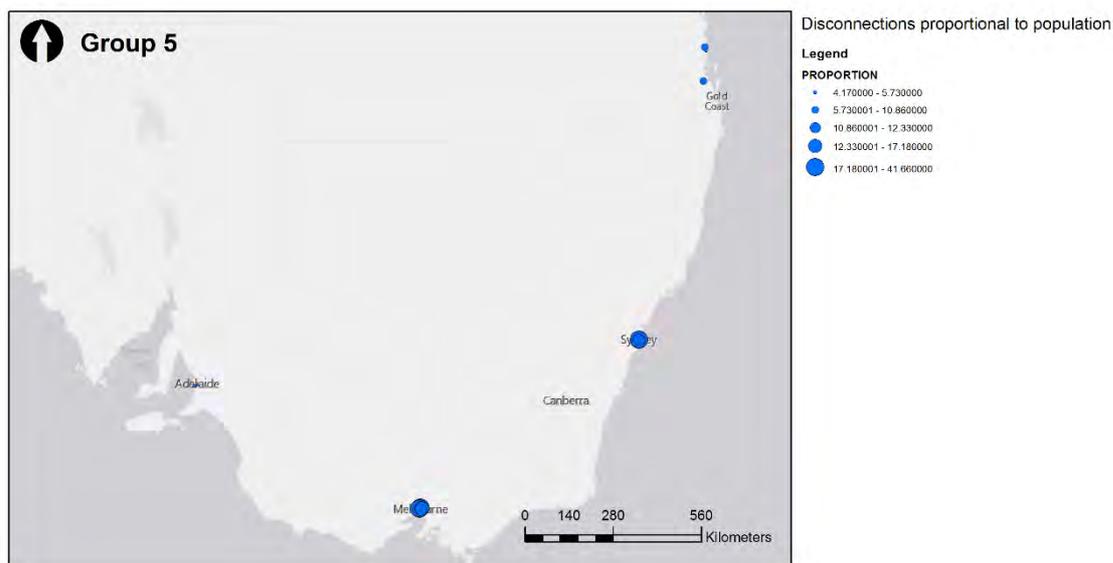


Table 30 below ranks all group 5 postcodes according to their disconnection rates (1 being the highest).

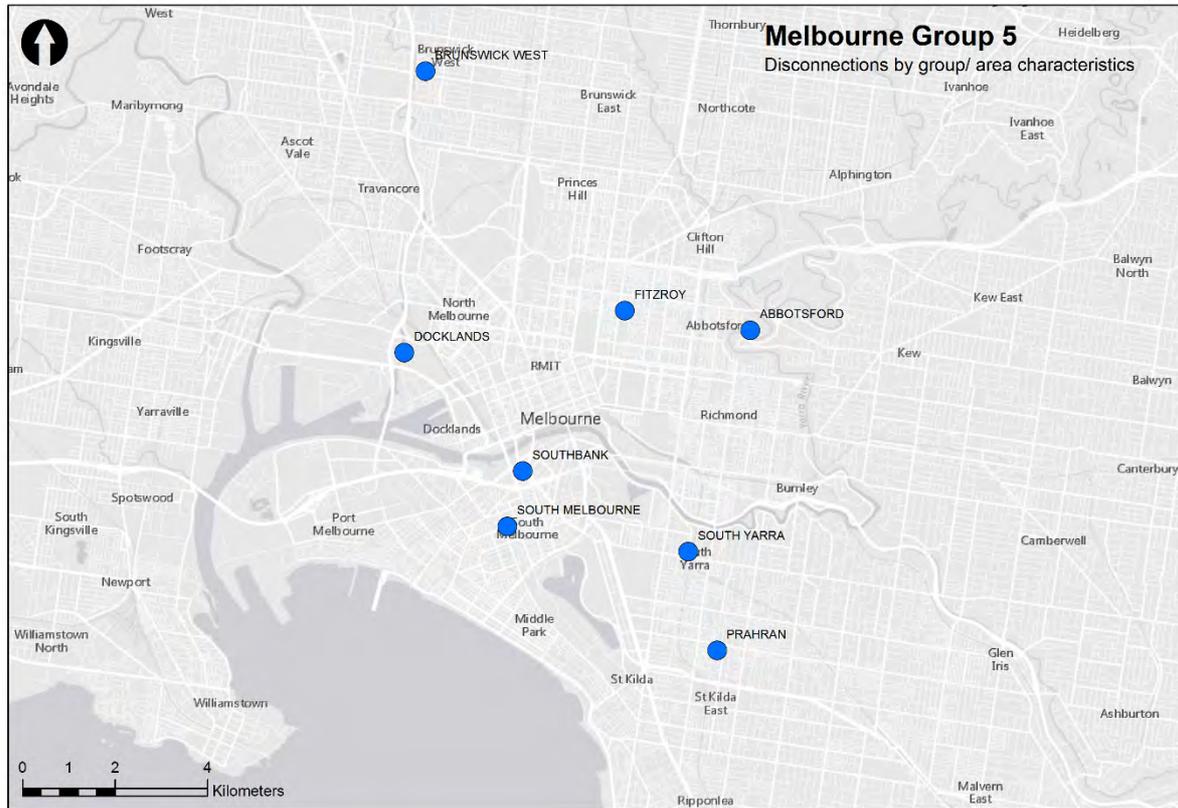
³⁶ ABS, Estimates of personal income for small areas, 2012-13 (January 2016), Table 5 Estimates of personal income, Total income (excluding Government pensions and allowances), 2012-13, Statistical Area Level 2 (a), SA2 117031337, Sydney - Haymarket - The Rocks

Table 30 Group 5 postcodes ranked from highest to lowest disconnection rates (proportional to population)

Rank	Postcode	Name	State
1	3008	DOCKLANDS	Vic
2	2000	SYDNEY	NSW
3	3065	FITZROY	Vic
4	3205	SOUTH MELBOURNE	Vic
5	2008	CHIPPENDALE	NSW
6	3067	ABBOTSFORD	Vic
7	3006	SOUTHBANK	Vic
8	2009	PYRMONT	NSW
9	3181	PRAHRAN	Vic
10	3141	SOUTH YARRA	Vic
11	3055	BRUNSWICK WEST	Vic
12	2026	BONDI BEACH	NSW
13	4169	EAST BRISBANE	Qld
14	4564	MARCOOLA	Qld
15	5000	ADELAIDE	SA
16	4557	MOOLOOLABA	Qld
17	4103	ANNERLEY	Qld
18	5045	GLENELG EAST	SA

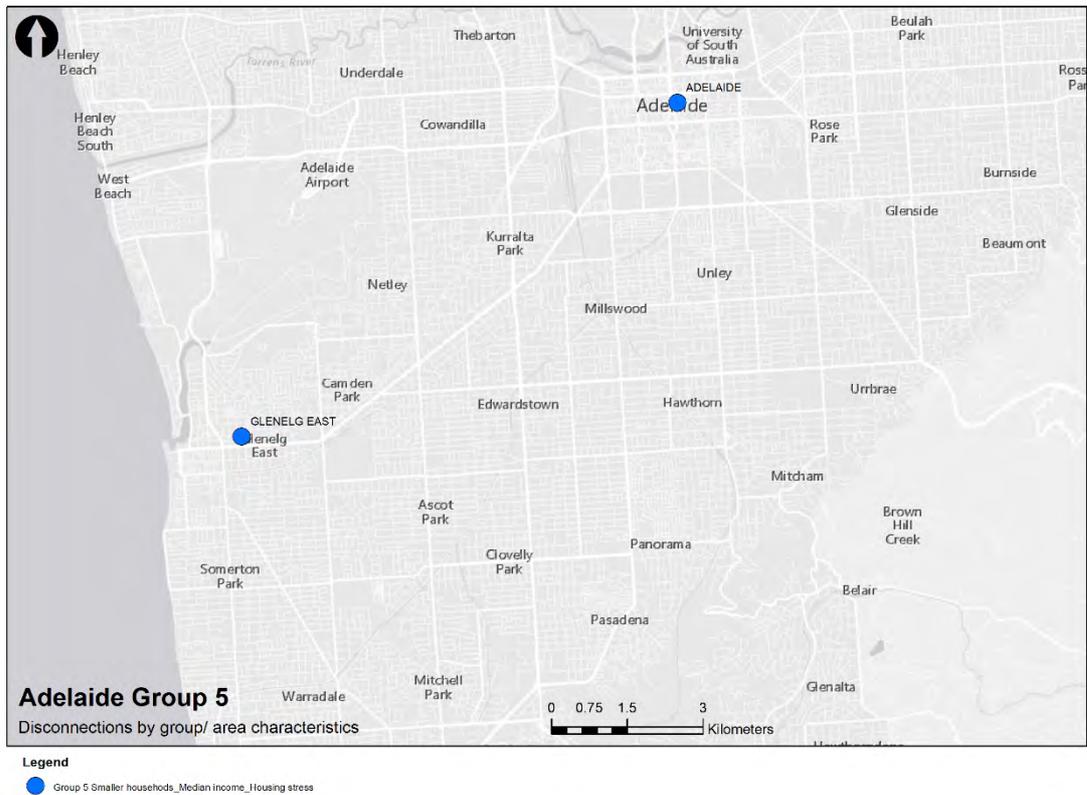
Victoria is the state with the most postcodes in this group. All of the eight postcodes are located in inner city Melbourne. They are: Fitzroy (3065), Docklands (3008), Southbank (3006), South Melbourne (3205), South Yarra (3141), Prahran (3181) Abbotsford (3067) and Brunswick West (3055).

Map 48 Group 5 postcodes in Melbourne



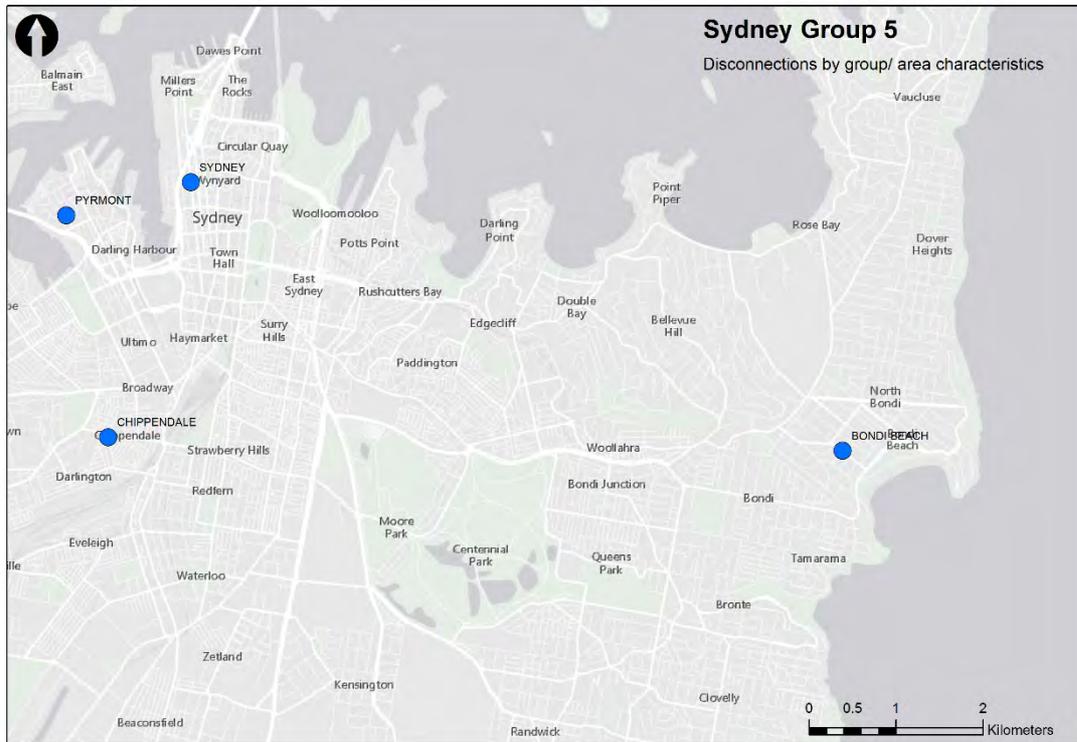
South Australia has two postcodes in this group. The first is Adelaide (5000) where the median age is low and 65% of households rent their home, and the second is the seaside suburb of Glenelg East where the median age is higher but housing stress amongst tenants is still relatively high (albeit less than in Adelaide).

Map 49 Group 5 postcodes in Adelaide



We have included four Sydney postcodes in this group: Sydney (2000), Chippendale (2008), Pyrmont (2009) and Bondi Beach (2026). They are all postcodes with a low median age and approximately 55%-65% of households rent their home.

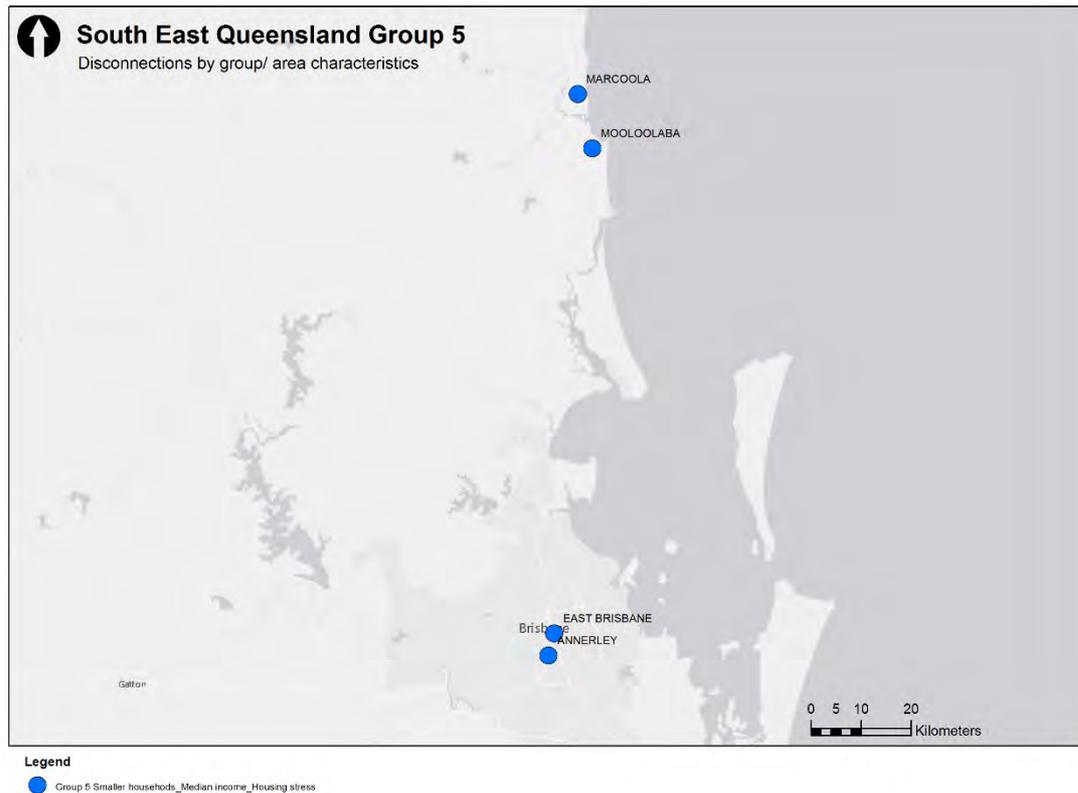
Map 50 Group 5 postcodes in Sydney



Legend
● Group 5 Smaller households_Median income_Housing stress

In South East Queensland we have included two inner city postcodes as well as two postcodes on the Sunshine Coast. The inner city postcodes of East Brisbane (4169) and Annerley (4103) have a lower median age and over 50% of households rent their homes. The Sunshine Coast postcodes of Marcoola (4564) and Mooloolaba (4557) have a higher median age but similar level of housing stress amongst tenants to the inner city postcodes. They also have relatively high housing stress amongst homebuyers.

Map 51 Group 5 postcodes in South East Queensland



Group 6, small households with low to median income with lower housing costs but greater transport costs, includes mostly postcodes of rural and regional towns and is the largest of the smaller household groups (38 postcodes). Housing costs (rent in particular) are relatively low (median rent of \$160 per week) but the median weekly household income is also only \$812. The median age is 41 and as the proportion of couples where both do not work is high, it indicates that high proportions are retirees on the aged pension.

All of the Victorian postcodes in this group have a higher proportion of sole parents than the state's average. This is also the case for all NSW postcodes except (Cootamundra, Cowra and Forbes) and three postcodes in South Australian (Berri, Barmera and Port Augusta West). The combination of high proportions of pensioners and sole parents in the community may indicate high out-migration rates by other groups or, alternatively, high out-migration by other groups and high in-migration by pensioners. The Kempsey Shire, for example, have had a positive net migration based on 2011 census data, but the age group with the highest net migration was persons aged 55 to 64 years.³⁷ While retirees may have lower transport

³⁷ See www.profile.id.com.au/kempsey/migration-by-age

costs than people travelling to work, the low incomes in these postcodes mean that expenses such as car registration and petrol will significantly impact on the overall household budget.

We also note that some of these rural towns may also have complex social and economic issues that impact on energy hardship and disconnection rates. Ceduna in South Australia and Walgett in NSW, for example, have significant aboriginal communities which are documented to have a higher degree of disadvantage.³⁸ Ceduna is also the first trial site for the Federal Government’s controversial income management program that issues cashless cards that quarantine 80% of a person’s benefit payments and cannot be used to purchase alcohol or for gambling.³⁹ As it is beyond the scope of this project to examine all factors of social and economic disadvantage that can result in a higher number of people being disconnected, we caution against placing total emphasis on the income and expenditure indicators presented in this report to understand causes for electricity disconnections in specific rural communities.

Map 52 Group 6 postcodes and their relative disconnection numbers

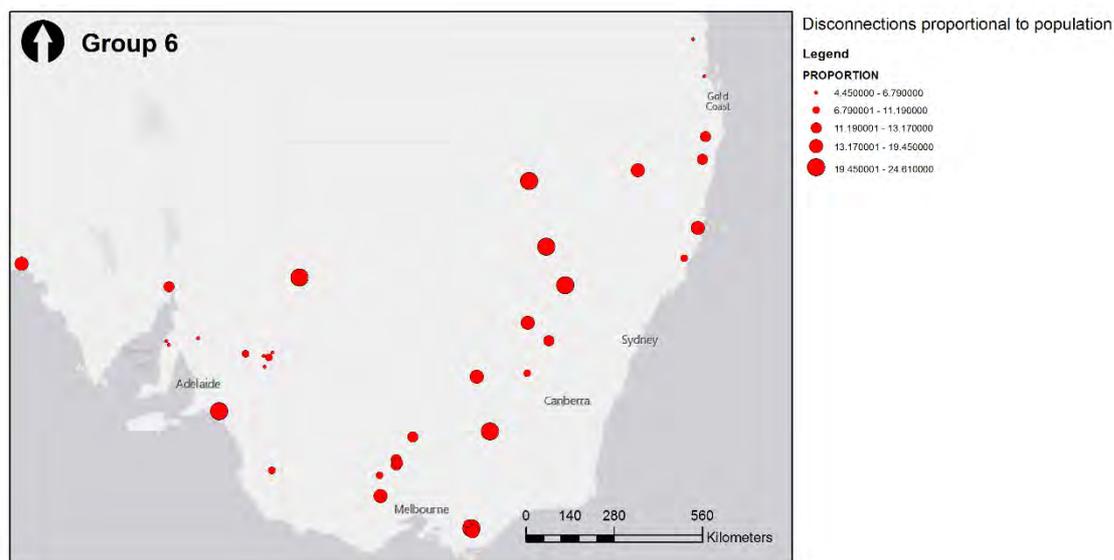


Table 31 below ranks all group 6 postcodes according to their disconnection rates (1 being the highest).

³⁸ See, for example, the Government’s *Closing the Gap* 2016 report available at <http://closingthegap.dpmc.gov.au/>

³⁹ See, for example, ABC NEWS, *Ceduna’s cashless welfare card trial experiences teething problems*, Natalie Whiting, 4 April 2016 at <http://www.abc.net.au/news/2016-04-04/ceduna's-welfare-card-trial-switched-on/7295864>

Table 31 Group 6 postcodes ranked from highest to lowest disconnection rates (proportional to population)

Rank	Postcode	Name	State
1	2880	BROKEN HILL	NSW
2	2832	WALGETT	NSW
3	5259	NARRUNG	SA
4	2641	LAVINGTON	NSW
5	2820	WELLINGTON	NSW
6	3840	MORWELL	Vic
7	2827	CURBAN	NSW
8	2700	NARRANDERA	NSW
9	2440	SOUTH KEMPSEY	NSW
10	3842	CHURCHILL	Vic
11	2871	FORBES	NSW
12	3355	WENDOUREE	Vic
13	2360	INVERELL	NSW
14	5690	CEDUNA	SA
15	2470	CASINO	NSW
16	2794	COWRA	NSW
17	3564	ECHUCA	Vic
18	2460	LAWRENCE	NSW
19	5700	PORT AUGUSTA WEST	SA
20	3556	EAGLEHAWK	Vic
21	3555	KANGAROO FLAT	Vic
22	3550	BENDIGO	Vic
23	2590	COOTAMUNDRA	NSW
24	3825	MOE	Vic
25	3465	MARYBOROUGH	Vic
26	2430	TAREE	NSW
27	3356	SEBASTOPOL	Vic
28	5343	BERRI	SA
29	5271	NARACOORTE	SA
30	5330	WAIKERIE	SA
31	4570	TUCHEKOI	Qld
32	5345	BARMERA	SA
33	5333	LOXTON	SA
34	5341	RENMARK	SA
35	5556	WALLAROO	SA
36	4034	ZILLMERE	Qld
37	5453	CLARE	SA
38	5554	KADINA	SA

Victoria has 10 postcodes in this group. Moe (3825), Morwell (3840) and Churchill (3842) in the La Trobe Valley, Wendouree (3355), Sebastopol (3356), Maryborough (3465), Kangaroo Flat (3555) and Bendigo (3550) in the Goldfields region, and Echuca (3564) on the Murray River.

All of these Victorian postcodes have a higher proportion of sole parents as well as couple families where both are not working compared to the Victorian average. They are also postcodes where a high proportion of households have a weekly income of less than \$600. In Maryborough, for example, 43% of households have an income that is less than \$600 (compared to 24% in Victoria as a whole).

Map 53 Group 6 postcodes in Victoria

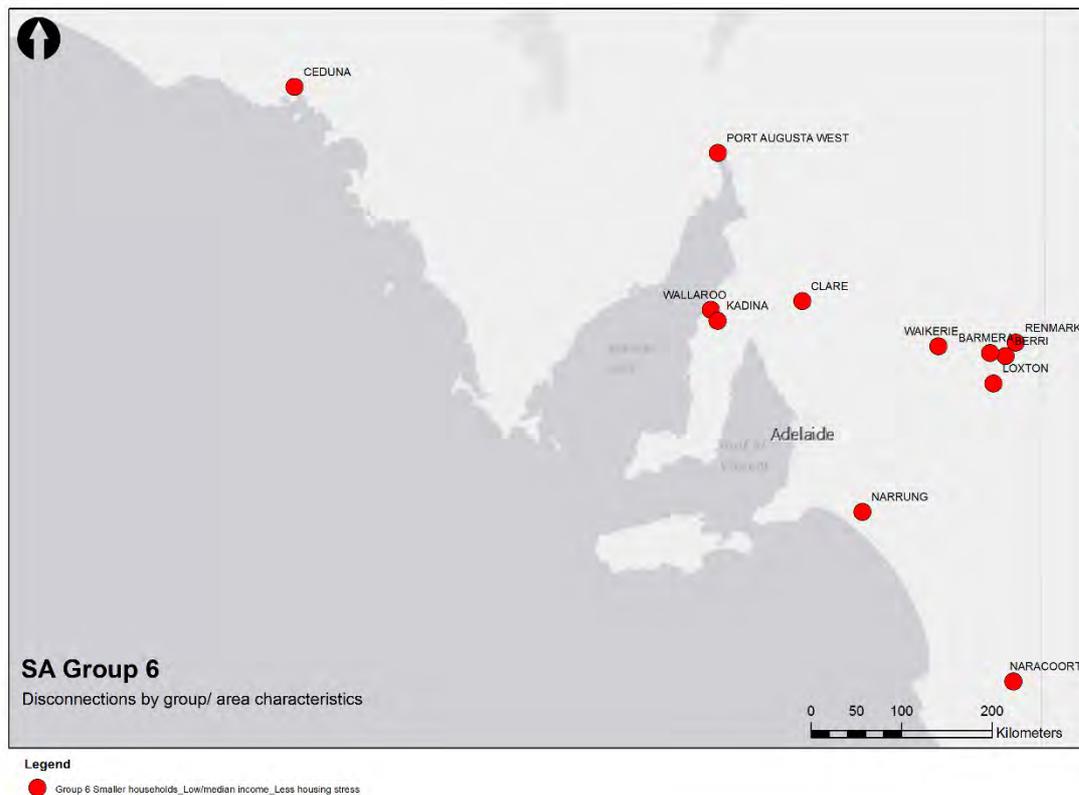


Legend
 ● Group 6 Smaller households_Low/median income_Less housing stress

Twelve of the group 6 postcodes are in South Australia. These are the remote towns of Ceduna (5690) and Port Augusta West (5700) on the Eyre Peninsula, the two old “copper towns” of Wallaroo (5556) and Kadina (5554) on the western side of the York Peninsula, Clare (5453) in the Clare Valley, Waikerie (5330), Barmera (5345), Berri (5343) and Loxton (5333) in the Riverland region, Narrung (5259) on the Narrung Peninsula, and Naracoorte (5271) in the Limestone Coast region near the Victorian border.

The median age in some of these postcodes is significantly higher than the South Australian median. In Wallaroo, for example, the median age is 50. Wallaroo, Kadina, Renmark, Barmera, Berri, Narrung and Waikerie also have a high proportion of couple families where both partners are not working. There are also a high proportion of households renting their homes in some of these postcodes. In Ceduna, Port Augusta West and Berri approximately 40% of household rent their homes. In Narrung, where the median rent is only \$80 per week, 33% of households rent their homes.

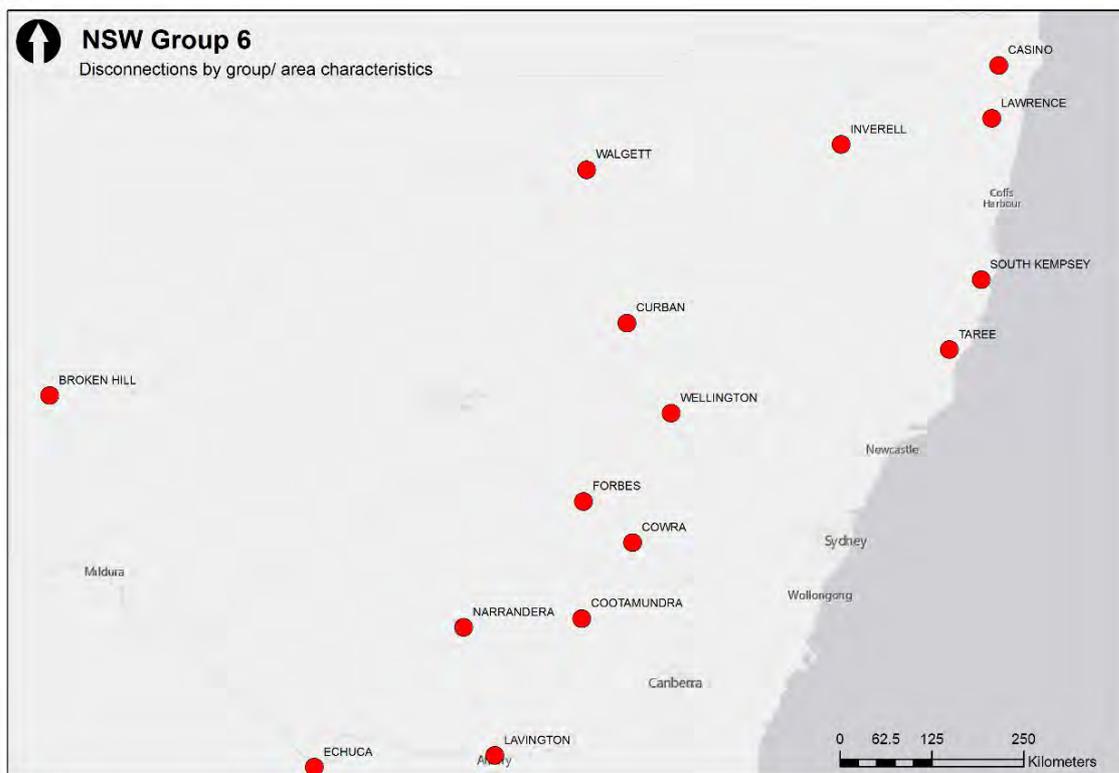
Map 54 Group 6 postcodes in South Australia



In NSW fourteen postcodes have been categorized as group 6 types. These are Lavington (2641) in north Albury, the outback town of Broken Hill (2880), Narrandera (2700) and Cootamundra (2590) in the Riverina, Cowra (2794) and Forbes (2871) in central NSW, Wellington (2820) and Curban (2827) on the Western Plains, Walgett (2832) and Inverell (2360) in northern NSW, and Casino (2470), Lawrence (2460), South Kempsey (2440) and Taree (2430) on the North Coast.

With the exception of Walgett and Lavington, the median age is higher than 40 years in all of the NSW postcodes in this group. All postcodes except Cootamundra, Cowra and Forbes also have a higher proportion of sole parents compared to the NSW average. Only two of the postcodes, Walgett and Lavington, have a higher proportion of households renting than the state's average.

Map 55 Group 6 postcodes in NSW



Legend
 ● Group 6 Smaller households_Low/median income_Less housing stress

Only two postcodes in the more densely populated South East Queensland have been categorised as group 6 postcodes. The first one is Tuchekoi (4570) on the edge of the Noosa hinterland. The second postcode is Zillmere (4034) in Brisbane's northern suburbs. Housing stress in Zillmere is relatively low but the postcode could have been classified as group 3 as well. Gatton (group 3) and Zillmere have similar socio economic indicators but as the median age is higher in Zillmere than it is in Gatton, Zillmere has been classified as group 6 while Gatton is in group 3. Again, we stress that the group classifications are indicative only and that some postcodes could potentially be assessed to belong to a different group. The main purpose of the group classifications is to create a framework that allows us to discuss key characteristics of postcodes with high disconnection numbers.

Map 56 Group 6 postcodes in South East Queensland



4.4 Short term or transitional financial stress vs. ongoing financial hardship

Within the framework of the six groups discussed above it is clear that energy hardship and disconnections can be a transitional issue for some customers while it is a long term issue for others. Students with high rental costs, for example, may not experience energy affordability issues once their studies are completed. Low income families or small households in housing stress due to rental costs, on the other hand, are likely to have an ongoing problem with energy hardship and potential disconnections. In the middle of this continuum are families and small households experiencing housing stress due to high mortgage repayments. They will continue to face the financial pressures for some time, but as the mortgage gets paid down the pressure is likely to ease.

The postcodes that have the highest disconnection rates may also change somewhat over time. Some areas will become gentrified, some communities may face major labour market changes and the cost of housing can go up or down and thus become suitable for different household types. That said, the analysis shows that there are clear and major differences between areas that have high disconnection rates and areas that do not, and this information can be used to alleviate the impact on energy hardship and to reduce disconnection rates in areas at risk.

In summary, all four jurisdictions have high disconnection postcodes consisting of the six household groups but there are differences in terms of which groups are over represented in the states' 'top 50' postcodes. In NSW, and to some extent South Australia, low-income households in rural and regional areas experience high levels of disconnection. In Victoria and South East Queensland the 'top 50' are over represented by suburban households facing housing stress. Again, this does not mean that suburban households experiencing housing stress in NSW are not at high risk of disconnection, it simply means that rural and regional disadvantage is more prevalent in NSW compared to (the smaller) state/area of Victoria and South East Queensland. There are also more elderly people in high disconnection postcodes in South Australia and South East Queensland. In Victoria, on the other hand, high disconnection postcodes tend to have younger residents.

5. Conclusion

While this study shows that communities with a high degree of social disadvantage are more likely to have high disconnection numbers, it also highlights that there are households at high risk of experiencing disconnection in areas with a high level of social advantage.

In regards to Group 1 (larger households with low income and a high degree of housing stress) only 2 out of the 41 postcodes were classified as areas of social advantage by the Jesuit Social Services and Catholic Social Services' Dropping off the edge (DOTE) 2015 study.⁴⁰ Similarly, only 2 out of the 38 postcodes classified as Group 6 (smaller households with low to median income and low housing stress) are areas of social advantage. In relation to larger (Group 2) and smaller (Group 5) households with median income and a high degree of housing stress, however, a large proportion of the postcodes with high disconnection numbers are regarded as socially advantaged areas.

Table 32 below shows the total number of postcodes for each of the groups as well as the number of postcodes in each group that are classified as advantaged or disadvantaged by the DOTE study.

Table 32 Number of socially disadvantaged and advantaged postcodes (as per DOTE study classifications) for each group

Group	Total # postcodes	# disadvantaged postcodes	# advantaged postcodes
Group 1	41	39	2
Group 2	39	28	11
Group 3	33	27	6
Group 4	31	24	7
Group 5	18	2	16
Group 6	38	36	2
Total	200	156	44

Furthermore, as the DOTE study uses four categories to classify an areas degree of disadvantage/advantage (most disadvantaged, disadvantaged, advantaged and most advantaged) we note that only 9 out of our 'Top 200' postcodes are areas classified as *most advantaged* and that 5 of those occur in Group 5 (inner city postcodes with a younger population and high rents). For the socially disadvantaged postcodes, on the other hand, the most disadvantaged classification was prevalent. In Group 1, 31 postcodes are areas classified as having *most disadvantage* and in Group 6, 33 postcodes are.

While the aim would always be that no households get disconnected from electricity due to an inability to pay, we acknowledge that assistance and measures to reduce the number of

⁴⁰ Jesuit Social Services and Catholic Social Services, Dropping off the edge (DOTE) 2015, available at www.dote.org.au

disconnections occurring need to be targeted in order to reach households most at risk, as well as those most at risk of on-going financial hardship and multiple disconnections.

Our recommendations are thus directed at energy policy makers and energy regulators at both state and Commonwealth level, as well as social policy measures that address the underlying poverty that is a major cause of disconnection.

Recommendations

1. Recommendations directed at state governments

1.1 Concession arrangements

The governments in South Australian, NSW and Queensland should introduce percentage based electricity concessions. This will provide proportional support based on the electricity costs faced by consumers.

With the increasing take up of solar, batteries and other energy management technologies a move to percentage-based concessions is crucial to ensure that concessions are based on the actual bill paid.

The Queensland Government should extend eligibility for energy concessions to Health Care Card (HCC) holders.

1.2 Relief schemes

The Victorian Government should simplify the application and approval process of the Utility Relief Grant (URG) scheme. The scheme currently has a slow and burdensome application process and improving this process is crucial to lower disconnection rates in Victoria.

The NSW Government should immediately review its Energy Accounts Payment Assistance (EAPA) scheme. Relying on delivery of EAPA vouchers through community welfare agencies limits the scheme's coverage and more assistance in rural and regional NSW is clearly needed to reduce disconnection numbers in these communities.

1.3 State operated energy savings programs

The governments in South Australian, NSW, Victoria and Queensland should target their energy efficiency programs to areas that need assistance with energy bills. These programs should in part focus on postcodes with larger households (i.e. high consumption families) and high disconnection numbers.

1.4 Energy efficiency standards

State governments should develop and require minimum energy efficiency standards for all public and private rental properties.

1.5 State government funded and/or delivered education programs

The governments in South Australian, NSW, Victoria and Queensland should ensure that education programs adequately inform households about concession arrangements, access to energy retailer hardship programs, relief schemes and other relevant support measures.

This is particularly important in areas with a high proportion of smart meters as remote disconnections clearly impact on disconnection completion rates and the frequency with which households experience multiple disconnections.

Education programs should also target disadvantaged communities to enable households to actively and confidently participate in the energy retail market (including being able to shop around for a better deal).

2. Recommendations directed at the Commonwealth Government

2.1 Income security

Energy policy and regulatory measures alone cannot prevent households from being disconnected. Increased social security payments are necessary to help households out of poverty. A large proportion of the postcodes with high disconnection numbers are areas with younger households, including young couple families and sole parents. We urge the Government to increase income support payments such as Newstart and the Youth Allowance.

2.2 Energy efficiency and renewable energy policies

The Commonwealth Government should use their energy efficiency and renewable energy policies to assist communities with high disconnection numbers reduce their energy costs.

2.3 Carbon emission reduction policies

In developing policies to reduce carbon emissions the Commonwealth Government should assess the impact these policies will have on households in areas with high disconnection numbers, and develop appropriate compensation measures as required.

3. Recommendations directed at regulators with responsibilities in the energy retail market

3.1 Monitoring and reporting

Energy regulators should collect information and report on customer numbers disconnected multiple times by the same retailer.

3.2 Improvements to the National Energy Customer Framework (NECF)

The NECF should be amended to ensure that retailers must offer payment arrangements to all households rather than just those the retailer has assessed to be in financial hardship.

3.3 Disadvantaged customers in the 'new' energy market

The market led roll out of smart meters will increase the completion rate of disconnections and result in more customers being more frequently disconnected. In order to provide retailers, as well as meter data service providers, with a strong incentive to follow due processes prior to disconnecting customers, the NECF should be amended to include a Wrongful Disconnection Payment that market participants, found not to have followed the required processes, are obliged pay the affected customer.

4. Recommendations directed at energy retailers and local governments

4.1 Develop local outreach programs

These programs should be developed to reach households in areas with a high level of multiple disconnections. Retailers and/or local councils should initiate outreach programs to effectively reach and assist these communities ensuring they are aware of available support.