Rural and Regional Energy Issues

A Qualitative Survey of Rural and Regional Councils in New South Wales and Queensland: January 2012

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Disclaimer:

The information in this report is of a general nature. It is not intended to be relied upon for the making of specific financial decisions.

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Executive Summary

Rural and regional energy supply can present challenges arising from the remoteness of some consumers and diseconomies of scale. As a critical input to economic activity, poor electricity supply in rural and regional areas could affect business activity and economic development. Rural and regional consumers may also experience poorer communication services and thus poorer contact with providers.

To learn more about the nature of rural and regional energy supply issues, Engineroom Infrastructure Consulting received a grant from the Consumer Advocacy Panel (the Panel) to conduct a qualitative assessment of the energy supply issues facing consumers in rural and regional districts of New South Wales and Queensland. The research for this report was undertaken by Luke Berry of Engineroom Infrastructure Consulting and David Prins of Etrog Consulting.

Our methodology was to interview a selection of twelve Councils from diverse rural and regional areas. We considered that Councils could broadly reflect on their communities' views, including both residential and business consumers.

We interviewed Councils about the main aspects of energy supply, with a particular focus on electricity supply. We asked about price and competition, reliability, quality of supply, the speed of new connections, the strength of community relationships established by electricity distribution networks, environmental concerns, local generation, access to land, visual amenity, undergrounding, tree clearing, safety, and access to distributed or bottled gas. These were also the issues that Councils indicated were of concern to them, as documented in this report.

Our findings are as follows:

Price: Price is a significant issue for consumers. Consumers were concerned about the current level of electricity prices, and the possibility of significant future price rises.

Competition: Competition among electricity retailers is perceived to be weak to moderate in rural and regional areas of New South Wales, with competition being stronger in major regional centres. In Queensland, there is no retail competition in rural and regional areas outside south east and central coastal Queensland. Network pricing and service quality are not affected by retail competition. However, the lack of retail competition means that there is less downward pressure on the retail prices that are seen by consumers, or upward pressure on retail service quality.

Reliability: Regional centres are generally considered to have good reliability, though they can be more vulnerable than urban areas to extended outages, as a result of less interconnection and redundancy. In part, this perception of good reliability may have been driven by the fact that long-term rural users have received lower reliability than urban users, and have therefore formed lower and more easily met expectations. As more urban users move to rural areas for work or lifestyle reasons, dissatisfaction with existing reliability levels may increase.

Reliability is perceived to be significantly more of a problem in rural areas outside regional townships. Distributors have devoted significant resources to improving reliability in problem areas. Distributors could improve communication about the expected time to restore power after major events, particularly in Queensland.

The price and reliability of electricity supply are particularly important where there is limited choice of alternative fuels, such as gas or wood, available.

Quality of supply: Quality of supply is generally good in rural and regional areas, though some Councils told us about occasional spikes that cause damage to appliances, particularly outside regional centres. There are specific locations where Councils know that there are problems, particularly more remote locations.

New connections: Councils were aware of many instances of significant delays across both NSW and Queensland in connecting new houses or commercial sites to the network. Distributor charges for major new works were seen to be excessive in some cases, and distributor policies for recouping charges from subsequent users using the same assets were not always perceived to work well. Competition in the provision of new connection assets was often reported to be weak, and distributors were reported not to be flexible in negotiations**.**

Community relationships: Distributors generally have a good reputation in the community and have established significant ties through sponsorships.

Community engagement: Councils considered there was often a one-way flow of planning information from distributors to Councils and communities, and that the distributors were generally not proactive in seeking Council or community input to distribution planning and decision making. Some Councils stated that they would like to have more interaction on planning issues with the distributors, and found that distributors were not flexible in negotiations.

Environmental matters: Solar panels (otherwise known as solar photovoltaic panels or solar PV) have had high take-up in some but not all areas. Demand in NSW has fallen back as subsidies have been removed and the feed-in tariffs have become less attractive.

Some consumers may require more education to buy green products. Councils and communities are very interested in environmental matters and need more information about the full range of green generation and supply products available to them.

Local generation: Local generation possibilities (other than solar panels) are not being considered in most rural and regional areas. Only four of the twelve Councils we met could identify that they had considered local generation opportunities apart from solar panels.

Vegetation management: There have been historical community concerns regarding what was considered to be excessive lopping of trees for vegetation management. Generally, these concerns have been addressed through improved communications with the distributor and distributor clarification of requirements. Distributors are now generally seen to be doing a good job with vegetation management.

Undergrounding of power lines: Undergrounding of power lines increases visual amenity and reliability, but is more costly to install and augment. Councils often require undergrounding of power lines for new developments. Due to the cost, undergrounding is otherwise not generally provided.

Safety: Very few safety issues were raised, suggesting that safety was not a significant concern among Councils.

Land access: Distributors access rural land to construct and maintain distribution networks. Councils were not aware of problems with access such as damage to crops or disturbance to cattle.

Gas distribution: Gas is delivered through reticulation systems (distributed gas) or through LPG bottles (bottled gas). Some Councils without access to distributed gas would like to obtain access to it as it can be cheaper than bottled gas where customers consume significant volumes. However, most Councils considered that their lack of access reflected the high cost of laying a reticulation system.

Bottled gas supply: Where there is no distributed gas network, bottled gas is used extensively. Bottled gas is less convenient than mains gas, and is generally more expensive for usage above a low level. The bottled gas delivery service was reported to be good, with no significant issues. In some areas, the bottled gas service is competitive.

As our scope did not extend to interviewing urban users, it is difficult for us to determine the extent to which these issues are specific to rural and regional areas, or are also issues in urban areas.

We can identify certain themes from our research, and it may well be the case that these themes are more pressing in rural and regional areas than they are in urban areas. Certainly, the lack of resources for new connections significantly impacted on the rate of development in rural and regional areas. Reliability and quality of supply tends to be weaker than in urban areas, but is generally within users' expectations. Distributors were seen to be working hard to improve reliability, particularly in poorer performing areas.

There was little retail electricity competition in many parts of rural and regional Queensland.[1]

There was a sense that rural and regional communities needed better education about green products and that opportunities for local generation may be under-explored because of lack of information.

[1] We understand this is because the Queensland Government imposes a uniform state-wide tariff which is below the cost of supply in most rural and regional areas of Queensland.

Introduction

There has been little systematic analysis across the National Electricity Market (NEM) of rural and regional consumer issues, by class of consumers, or by region. In conjunction with Etrog Consulting, Engineroom Infrastructure Consulting proposed a qualitative interview project to the Consumer Advocacy Panel to investigate the nature of rural and regional energy consumer issues.

The objectives of this project were to:

- Produce an outline of rural and regional consumers' issues;
- Enhance the capacity of rural and regional as well as national consumer advocates to represent the interests of rural and regional consumers in policy and regulatory decisions; and
- Engage rural and regional consumer organisations in the debate about energy supply issues, and alert them to information and advocacy networks that could facilitate their greater involvement.

The intention was for the project to examine the broad context for supply of electricity to rural and regional consumers, and to cover issues such as:

- Distribution service quality levels, including reliability and quality of supply, and whether electricity supply affected opportunities for regional economic development;
- Relative targeting of cost versus reliability and quality of supply;
- Policy on new connections, including cost sharing and competition in provision of new connections;
- Tariff policies;
- Hardship policies;
- Infrastructure provision to support local employment opportunities; and
- Planning, visual amenity, vegetation clearance.

Methodology

For the purposes of the research, rural and regional areas were taken to be areas in NSW and Queensland, outside the Greater Sydney and Newcastle areas in New South Wales, and outside Brisbane, Ipswich, the Gold Coast, the Sunshine Coast and Townsville in Queensland. Regional areas were taken to be larger towns and cities of around 50,000 or more, while rural areas were considered to be smaller towns and country areas.

The project conducted qualitative research through interviews with twelve Local Government Councils located in rural and regional areas. This number was seen to be a reasonable sample size to gain a sense of the commonality of issues, and their prioritisation, and to provide a broad and reasonably representative geographic cross-section of views.

Councils were approached because they:

- Provide leadership for the community;
- Have knowledge of energy as a user, and have knowledge of community energy supply needs through their community representation roles;

- Are familiar with the range of energy supply issues through their infrastructure provision role;
- Are very aware of their local community needs;
- Provide a good central point for dissemination of advocacy information;
- Are representative of the community; and
- Are relatively accessible.

The twelve Councils were selected to provide a good mix of:

- Rural and regional areas;
- Coastal and inland areas;
- Industries including manufacturing, agriculture, tourism, and mining;
- Areas with strong and moderate economic growth; and
- Wealthy and poor areas.

We interviewed representatives from each Council to obtain information about:

- Community concerns about energy supply; and
- A sense of the prioritisation of those concerns.

The list of Councils that we met is at Table 1.

Table 1: Councils surveyed

Council	State	Date
Clarence Valley Council	NSW	8 April 2011
Goulburn Mulwaree Council	NSW	21 February 2011
Griffith City Council	NSW	8 December 2010
Lismore City Council	NSW	13 December 2010
Shoalhaven City Council	NSW	29 November 2010
Tamworth Regional Council	NSW	3 November 2010
Bundaberg Regional Council	Qld	8 December 2010
Cairns Regional Council	Qld	2 March 2011
Maranoa Regional Council	Qld	14 December 2010
Mount Isa City Council	Qld	7 December 2010
Western Downs Regional Council	Qld	8 December 2010
Whitsunday Regional Council	Qld	10 December 2010

Prior to the interviews, we contacted Councils and explained the purpose of our research. We provided a written summary of the objectives of the research, and a list of potential areas and issues for discussion. We also provided written information on the Consumer Advocacy Panel and community groups involved in advocacy around energy issues in NSW and Queensland (for a copy of the material see Appendix 1). We organised a time for a meeting with Council representatives, and requested attendance by Council staff from a range of areas.

At each Council meeting, we met with between one and five representatives of the Local Councils, comprising a total of 36 people across the twelve Councils.[2] The representatives came from a range of backgrounds, encompassing Councillors and staff representatives from community development, economic development, energy procurement, and infrastructure provision areas of Local Governments.

The focus of the interviews was predominantly on electricity issues, in order to keep the range of issues within manageable limits, and because electricity issues are common to all Councils. Besides electricity issues, we have also asked about access to and supply issues around distributed gas and bottled LPG.

The interviews were conducted in a semi-structured format. Where possible, generalisations were tested by asking interviewees to describe specific needs or events.

The interviews touched on issues raised by the Council representatives, including the following range of issues (without limiting what interviewees wanted to nominate), including:

- Cost of supply, the extent of competition, and the continuing existence and level of Community Service Obligations (CSOs);
- Reliability, total time off supply, and time to restore power;
- Quality of supply;
- Cost of new connections, rights to new connections, and competition in provision of new dedicated connection assets;
- Access and input to decision-making;
- Local employment in energy supply / depot opening or closure;
- General economic development – requirement for energy at an affordable price;
- Emissions trading and climate change policy – costs, uncertainty, environmental benefits, access to income from offsets under a possible Carbon Pollution Reduction Scheme (CPRS) or similar scheme;
- Planning, visual amenity, tree clearing, and undergrounding;
- Local generation possibilities and feed-in tariffs;
- Safety issues;
- Access to distributed gas or bottled LPG services; and
- Pre-payment requirements and meters.

Interviewees were asked to describe any relationships between issues of concern. Interviews also discussed the advocacy resources available to Councils and community groups in relation to energy supply issues.

We provided draft minutes of the meetings to attendees for their comment, and incorporated comments provided by them in the final version of the minutes of each meeting.

In addition to meeting with Councils, we met with Ergon Energy and Country Energy. Ergon Energy is the manager of the electricity distribution network for all areas of Queensland outside the

[2] We met with one representative in only one case.

urbanised south-east corner, and is the retailer of electricity to those customers in its area that do not enter into a market contract for their electricity supply. All the Queensland councils we interviewed were in the Ergon Energy area. Country Energy was the combined electricity distributor and local retailer for the majority of rural and regional areas in NSW at the time that we started our research.[3] However, one of the Councils we interviewed in NSW (Shoalhaven City Council) was in the Integral Energy area.

Table 2 summarises our meetings with parties other than Councils.

Table 2: Non-Council meetings

Organisation	State	Date
Ergon Energy	Qld	23 July 2010
Country Energy	NSW	17 December 2010
AgForce	Qld	3 August 2010

On 1 March 2011, during the course of this project, the three former combined retailer-distributors in NSW restructured into separate retailers and distributors. The retailers were sold by the NSW Government along with the brand names Country Energy, Integral Energy and EnergyAustralia. The retail businesses of Country Energy and Integral Energy were both sold to Origin Energy, while the retail business of EnergyAustralia was sold to TRUenergy. The previously associated distributors were retained in State Government ownership and were renamed Essential Energy, Endeavour Energy and Ausgrid respectively. In this report, we generally use the retailer name to refer to the retailer, and the distributor name to refer to the distributor. In some cases, the context requires us to refer to the previous combined retailer-distributor, in which case we make that clear in the text. This is one of those cases – our meeting with Country Energy was in its capacity as combined retailer-distributor before the restructuring occurred.

We also met with AgForce before meeting any Council, due to their knowledge and involvement in rural energy supply issues. AgForce is a peak organisation based in Queensland representing rural producers. It aims to "ensure the long term growth, viability, competitiveness and profitability of broad acre industries of cattle, grain, sheep and wool in Queensland".[4] The interview was conducted with a property manager, who spoke from the perspective of being both an AgForce representative and a property manager on a property about one hour's drive from Townsville.

Maps of the relevant Council areas in New South Wales and Queensland are included in Appendix 2 and Appendix 3 of this report respectively. Maps of the relevant electricity distribution areas are included in Appendix 4.

Qualitative Approach

The primary research method was qualitative research. Qualitative research involves an investigation in which the researcher attempts to determine a larger picture by examining the issues in a holistic way or by examining components of that picture within their context. The qualitative

[3] The Country Energy (now Essential Energy) distribution network also extends into a small part of Queensland.

[4] AgForce website www.AgForceqld.org.au/index.php?tgtPage=about

method investigates the *why* and *how* of decision making, not just *what*, *where*, *when*. It relies primarily on interviews and discussions rather than on a quantitative or numbers-based approach such as a survey.

The qualitative research methodology was chosen because in qualitative research, a hypothesis is not needed to begin research. By contrast, quantitative research requires a hypothesis for testing. The qualitative approach imposes fewer restriction or assumptions at the start of the research. This was appropriate in this case as this research was aimed at identifying the suite of priorities relevant to rural and regional energy users, without any initial starting point or pre-conceived views about the key issues.

The qualitative methodology permitted Councils to define the issues, and permitted more in-depth and holistic investigation.

Like any form of research, qualitative research has certain drawbacks. These drawbacks must be taken into account in order to maximise the value of the qualitative research.

One drawback is that qualitative research can sometimes focus too closely on individual results, and fail to make connections to larger situations or possible causes of the results. Another way of describing this drawback is that the study group may not be representative of the wider community. A second drawback is the possibility of researcher subjectivity in the interpretation of results. A third possible drawback is that the study findings may not be replicable and rigorous, that is, it may not be possible to repeat the findings via similar research.

Our approach to address these shortcomings was to:

- Address possible bias in the selection of the sample group by:
  - Interviewing Councils as they were seen as more representative of the community than some other potential groups that could have been surveyed; and
  - Interviewing a broad range of rural and regional Councils covering different geographic areas, energy demand uses, and demographics.
- Reduce researcher bias by asking questions from a range of viewpoints and seeking to avoid asking value-laden questions.
- Address the ability to replicate the study and the rigour of the study by setting out clearly in this report the research methodology and the parties approached. Further qualitative and quantitative research could validate the research findings.

Structure of the Report

The structure of the rest of this report is a series of chapters covering the major issues discussed with Councils. Each chapter commences with a summary of the views of Councils and AgForce. The chapters then set out each individual Council's views. Chapters conclude with the views of the electricity distributors on these issues. The views of the electricity distributors are not included in the summary at the commencement of the chapters, to ensure that these summaries represent the views expressed by Councils and AgForce only.

Councils' views are presented in alphabetical order, with the NSW Councils first and the Queensland Councils second in each chapter.

Chapter 1: Price, Competition and Economic Development

We investigated Councils' perceptions around the price of electricity, the extent of retail competition, and the extent to which electricity supply issues impacted on economic development in rural and regional areas.

Our major findings are:

- Relative wealth and lifestyle factors in each region help determine price-sensitivity and the strength of demand. Some customers remain uninterested in conserving electricity or the cost of electricity.
- Factors such as transient populations, renting, and older style housing tend to reduce users' incentives to bring down energy costs through energy conservation or efficiency measures.
- Most users are concerned about current prices, and more particularly about the trend of prices in the short to medium term.
- One Council considered that reliability and supply issues affected economic growth. This Council also noted that improving reliability might not remove hurdles to economic growth unless it was done in conjunction with improvements in other infrastructure services such as communications and transport infrastructure. Other Councils pointed to other infrastructure areas such as water or broadband as higher priorities for infrastructure improvement than electricity supply.
- The ambulance levy, which is levied on each electricity bill in Queensland, tends to fall disproportionately on rural users, as they have multiple meters and therefore multiple bills. However, the levy was removed in July 2011 – after we had concluded our discussions with Councils.
- There is no realistic prospect of retail competition in most rural and regional areas of Queensland.
- There is weak to moderate retail competition for residential customers in rural towns in NSW. The trend is to greater retail competition over time. Some consumers are still unaware of their ability to choose their electricity retailer, while others have been reluctant to change retailer because of strong brand loyalty to Country Energy, or because they fear worse service from the distributor if they change retailer.[5] There is moderate competition for business customers, with Councils forming buyer groups to tender their supply arrangements.
- Queensland users may not be aware of off-peak tariffs as a way to save on electricity use for appliances that can be cut off from supply for part of the day. Off-peak tariffs are substantially cheaper than the general use tariff.
- There is varying but generally strong interest in energy efficiency. To roll out energy efficiency initiatives will require more effort from retailers, distributors, and others.

[5] Comments regarding brand loyalty to Country Energy and fear of worse service from the distributor on change of retailer were made before the distributor was rebranded to Essential Energy. Due to the timing of our research, we have not been able to judge whether or to what extent this rebranding and the sale of the retail arm have changed customers' perception of the local retailer and of its relationship to the distribution business.

- Customers are generally reluctant to accept that there is a trade-off between price and reliability.
- Estimated billing is common in some rural areas due to the cost of attending the meter to read actual usage. Estimated billing is less than ideal as customers may not know the true cost of their use for an extended period.
- No issues were identified around the use of pre-payment meters.

Clarence (NSW)

The highest priority issue is perceived to be the cost of energy – for both residential and business use.

Council has managed its electricity costs by tendering its requirements with other councils as part of a joint buying group. This has helped to reduce costs such as streetlights, which fell after the last tender. Council is now working with Essential Energy to update streetlights to be more energy efficient to make further savings in energy costs.

There is some emerging retail competition. Integral Energy has door-knocked residents offering prices that are 4 per cent lower than the local retailer (Country Energy). However, there has not been much television or other media advertising of electricity supply. The local population is traditional and conservative. Everyone has family members and other people who they know who work for the local distribution network business: this has fostered brand loyalty. Now that the old Country Energy retail business has been sold and the distribution business has been rebranded to Essential Energy, the loyalty to the Country Energy retail business may wane.

There was a big rush to install solar panels in the area before the NSW government cut the value of the feed-in tariff (the tariff paid to users with solar panels that feed electricity back into the grid). Considering the installation of solar panels made people more aware of the cost of electricity and other aspects of electricity supply, such as changing to a Time of Use (TOU) tariff, rather than just accepting the existing tariff arrangements.

There is a real focus within the Council to be more energy efficient. There is an energy framework to reduce cost and for Council to take a leadership role in sustainability. For example, in relation to a Council sewerage scheme that is a large user of electricity, part of the design requirement was to consider the scope for improvements in efficiency.

Issues around electricity supply are not known to be causing limitations on economic development.

Goulburn (NSW)

The price of electricity is perceived to be local customers' biggest energy issue by far. Reliability of electricity supply and quality of supply are in a distant second and third place. Customers feel unable to influence and are resigned to price increases. People talk of "company greed" when prices increase. Local media play on energy price increases, with claims that rises may result in families being unable to afford food.

Customers raised concerns about electricity prices when it was mooted that prices might go up by 60 per cent over a few years.

Some ratepayers contact councillors directly about energy cost issues. One councillor actively sought direct contact through the local newspaper, to get ratepayers' feedback, so he could take items up with the appropriate parties.

Country Energy was the local electricity retailer and distributor at the time.[6] ActewAGL and Origin Energy have been active in telemarketing to residential electricity customers in the area.

Council area is one hundred kilometres from Canberra; there are TV advertisements from ActewAGL (based in Canberra), so customers will be aware of competition. Many customers misunderstand and fear that they will get worse service from Country Energy as a distributor if they are not Country Energy retail customers. For example, they fear they might get lower priority for service restoration if there were an outage.

Comparison websites have also advertised locally.

Electricity supply, reliability and quality issues are not seen to be hindering local investment or development. The major local infrastructure issue for economic development is certainty of water supply rather than electricity – for residential, commercial and industrial use. Broadband is also important for economic development.

There are very few pre-payment meters in the area. There are vouchers given out by charity groups to customers experiencing hardship. Country Energy is required by the State Government to help those in financial difficulties.

Council has 110 customer accounts with annual usage below 160 MWh. There have been some approaches to Council to join a local council buying group for an energy tender for these smaller sites. Council did not participate, because many of their sites were at the time on obsolete tariffs below market price, and Council did not want to forego that advantage. Those tariffs have now increased, but Council has not yet re-investigated whether competitive electricity supply would now be economic for these smaller sites.

Council went out to tender on eight customer sites with annual usage above 160 MWh.

Electricity reliability and quality issues are not seen to be hindering local investment or development. The major local infrastructure issue for economic development is certainty of water supply rather than electricity – for residential, commercial and industrial use. Broadband is also important for economic development.

Griffith (NSW)

Council has spoken to local businesses about energy supply issues. The highest priority issue is cost.

Griffith City has several large users of energy. These include food and beverage operators, the agricultural sector including the largest prune growing area in Australia (which use power for pumps, packing sheds and dehydrators), and Council with a new $26 million reclamation plant.

[6] In March 2011, the retail arm of Country Energy was sold under the Country Energy brand, while the distribution arm was rebranded as Essential Energy.

There have been increasing reports of energy theft in the Griffith region and increasing reports of customers who are unable to meet the cost of their electricity bills and are compromising in other areas (health, groceries, and other bills). Charities have given vouchers to needy residential consumers.

Industries are exploring alternative energies, however critical mass and money is a major inhibitor for investment in this area.

There is a lack of retail competition in this Council area, although some smaller players are coming in over time.

Lismore (NSW)

The area has a more aged population than Sydney. These customers depend on air conditioning in summer for their health.

Most residential and small business customers in the area are supplied by Country Energy. Other retailers do serve the area. Council has contracts with various retailers. Some contracts Council negotiated itself; others were negotiated through local government procurement.

Council's own energy cost increases – recent and expected – far exceed Council's ability to increase revenue. Council will have to reduce services instead.

Ratepayers' view is that power is expensive. This is currently a major issue in the area.

There is a planning effect. The current energy intensive model of housing is committing future generations to pay ever increasing prices for future cooling and heating. Council is looking to work with developers for more energy efficient designs. There is an opportunity in development control plans. Work is being undertaken on scenarios where developers think beyond existing brick and tile structures. Council is influencing rather than mandating, as its ability to mandate particular energy efficient designs is limited.

Shoalhaven (NSW)

Council has 640 sites that use electricity, with about 30 to 40 sites classified as large user sites (i.e. above 160 MW per year). Council tenders for electricity supply through local government procurement. There has been competition to supply the Council.

One of the NSW retailers won the large sites, while a national retailer won the contract for the small sites. The NSW retailer probably won the contract for the large sites based on its knowledge and expertise with larger sites.

Council want to move to electronic billing to manage these 640 accounts. However, retailers to date have been unable to move to electronic billing. This contrasts with telecommunication providers that are much more capable in this area.

Integral Energy was the incumbent distributor and retailer prior to full retail contestability.[7] Following contestability, all of the major industrial users were understood to have switched retailer. It is understood that these users have not switched back. These industrial users have multiple sites across Australia and may have tendered their national requirements. Council has not heard complaints from these large users about their retailer.

At the business level, AGL and TRUenergy have been active in competing with Integral Energy, with AGL trying to bundle gas (bottled or reticulated) with electricity, and marketing this to medium sized customers. There has been some activity at the residential level, through mail-outs and limited door to door sales activity.

Tamworth (NSW)

Tamworth Regional Council does not employ a specialist energy officer. For its own energy procurement, it has engaged the services of a specialist energy management consultant who was formerly an electrical engineer with long experience working for local and regional energy suppliers. The Council went to tender for its electricity supply two years ago, as part of a group tender involving seven or eight councils. Each council then negotiated its own contract. Tamworth Council is now in their second year of a three-year contract.

Residential customers use electricity mostly for heating in winter (this past winter was particularly cold and wet), and for cooling in summer. Natural gas has recently become available, and rising electricity prices are providing incentives to install gas heating rather than to heat using reverse cycle air conditioning.

People generally attribute responsibility for electricity price increases to the State Government. The general view is that the State Government controls the price; it is not within the control of the local distributor or retailer. The State Government is considered not to have maintained the infrastructure to a high standard in the past, and therefore higher prices are being seen now as investment occurs.

The local retailer is Country Energy. It is likely that until recently there were not large margins available to competitors to compete against the regulated retail price charged by Country Energy, so retail competition is only just developing the area. Much of the population is not aware that there is competition for electricity supply.

Country Energy has good brand loyalty as the local retailer, which may be difficult to disturb. People do not distinguish between retail and distribution arms of Country Energy, so the distribution business brand value helps the retail business as well.

[7] In March 2011, the retail arm of Integral Energy was sold under the Integral Energy brand, while the distribution arm was rebranded as Endeavour Energy.

Marketing from rival retailers has commenced in Tamworth, with some doorknockers considered to be too pushy and aggressive for the local area. It was suggested that in regional areas people are mistrustful of "in your face" marketing with direct telephone calls and doorknocking. People prefer a softer community-based approach, perhaps with community meetings and through local news media. However, it was recognised that rising bills might make people more amenable to showing an interest in marketing and in switching retailer.

A previous retailer, Jackgreen had some success marketing green retail energy in the local area. However, in December 2009, Jackgreen went out of business, leaving their customers back with retailer Country Energy on standard non-green products. This suggests that there may be an opportunity for an energy retailer to enter the market with a green energy product.

There are no known issues of businesses that would like to locate or expand in the area but are put off by energy supply issues. By contrast, the food processing sector is active in the region and has indicated that it is considering issues in regard to the ongoing supply and quality of water in the area over their planning range of the next 20-30 years. For this industry sector, access to water is the higher priority issue, not energy.

There is also a regional development growth strategy with the objective of encouraging people to relocate from cities to country towns. Seven growth centres in regional NSW have jointly created a marketing initiative to promote city living in regional areas. There is no known feedback that energy issues or concerns are affecting the success of this program.

Bundaberg (Qld)

Council referred to material about the high disconnection rates in Queensland. The Council area has some of the highest rates of social problems in Queensland.

There is no retail competition in the supply of electricity in the area.

Elsewhere in the State, Tariff 33 could be used to support air conditioning, with the supply de-energised only for an hour or two at a time. In Bundaberg, however, the time off is generally in the evening for six hours at a time, and as a result Tariff 33 is not suitable for air conditioning.

Cairns (Qld)

A single standing offer tariff applies to residential general and off-peak use across Queensland, but people's perception is that electricity is more expensive in the local Cairns area because it comes from central Queensland and therefore there are extra costs in delivery.

There is no choice of electricity retailer in the area. Ergon Energy is the sole retailer; there is no competitive electricity retailer advertising locally.

Cairns City Council considered that poor reliability of electricity supply has made it more difficult to attract businesses to the area. The supply of acceptable quality electricity and communications and internet services were considered to be equally important. Improvements in electricity supply would need to be matched by improvements in communications before economic development would be promoted. More broadly, transport infrastructure and other forms of infrastructure would also be important to promoting economic development.

Maranoa (Qld)

There is community concern on price increases. There is community perception of significant price rises to date, and more are expected in future.

There is no retail competition in rural areas of Queensland.

Businesses are interested in rewards-based tariffs which include demand management aspects. They have been introduced by Ergon Energy in other areas for businesses, hospitals, and other such non-residential premises.

Mount Isa (Qld)

The small population base uses large amounts of electricity – higher on average than elsewhere in Australia. The average age in the Mount Isa area is about 30, which is lower than the national average. It is an isolated and transient community, rural and remote, with employment being focused on the local mining industry. Home is the entertainment centre. The population are "early adopters" with plasma TVs, home cinema, sound systems, pools, and perhaps three to four full-size fridges. There is high usage of appliances such as dishwashers, and washing machines – due to mining activities. The climate is hot and arid, with very large air conditioning usage. Every third or fourth house a swimming pool; there are fans on outdoor decks.

Many houses were built around 1957. They have not been insulated or rewired. As a result, they are not energy efficient. There are some longer term people in the community. However, most mining workers leave after a five year term. They do not invest in their properties – they take what they get – they use an electric or gas stove, and electric or gas water heating that is based on whatever is there when they move in. They do not change fuels – because their presence is transient, and they cannot justify the costs of change. People do not generally spend money on their homes. There is also therefore lack of insulation in many homes.

Most people generally also stay on the electricity tariff they are on when they move in; they have no information on others, and do not investigate other options. There is no retail competition; Ergon Energy is the sole electricity retailer.

The mines operate 24 hours a day, seven days a week. Much of the population is working in the mines on shift work. This means that electricity has to be available at all hours of the day. For example, when they are on night shift, the workers need air conditioning to help them sleep during the day time. There is no particularly good time for an interruptible load tariff.

There is a tight property market – people take what they can get. They do not choose property based on the fuel being used or the energy efficiency of the property.

Saver programs from Ergon Energy have attempted to achieve greater energy efficiency and lower electricity usage in the residential market, including allowing consumers to claim back the $50 they pay for changing light bulbs to compact fluorescent and installing water efficient showerheads under the Queensland Government's ClimateSmart Home Service program.[8] However, to date, the Ergon Energy program has done little to address the shortage of power in the area.

The cost of electricity has increased, but it is recognised that power bills are higher because of high use as discussed above. The average salary is one-third higher than the State average, due to higher salaries paid to mine workers, so they can more easily afford to pay for their high consumption. However, non-miners within the Council area are struggling, for example those who work in supermarkets and other shops.

There is higher cost of living in the area, including the cost of accommodation. Due to the remoteness of the area, all construction work and materials are more costly. There is generally 60 per cent on-cost to get materials to the area. There is also a tradesman drought as the tradesmen are drawn to work for the mines. Finding an electrician to serve residential and small business can be quite difficult.

People generally want to see lower energy costs and higher supply capacity.

Western Downs (Qld)

Electricity was perceived by the Council to be very expensive – when compared to Melbourne and Sydney. Bills seem to be high for usage levels. Some users pay very high bills but are still not seeking to economise to save money or to help protect the environment.

Schemes exist to change to more energy efficient light bulbs to save money. Customers are interested, but the programs are not well promoted.

Some customers experience issues with estimated bills as their meters are behind locked gates. Estimated bills are sent when the retailer (or the distributor on the retailer's behalf) estimates a bill from historical usage rather than reading the meter.

Ergon Energy is also the only electricity retailer; there is no retail competition. Council would like to see retail competition to provide choice.

Whitsunday (Qld)

Cost of electricity is an issue, and there is no retail competition in the area.

There is work underway to increase electricity supply to provide for new industry. There is a concern about the effects of new development on existing electricity consumers – specifically that new development could have a negative impact on supply to existing consumers. Fifteen years ago, this much development was not anticipated. There has been some Ergon Energy network augmentation, but it is unclear whether it is sufficient.

[8] For more information on this program, see www.climatesmarthome.com/what_you_get.html

Billions of dollars worth of further development is also waiting to happen; this development is currently delayed by the global financial crisis. The development will be long term – for the next 100 years.

AgForce (Qld)

AgForce was concerned about the ambulance levy which was levied at the time of the interview on each electricity bill in Queensland. This is a major rural issue because often one property has many meters and therefore many bills, and is unable to aggregate the meters to a single bill. This means the levy is charged multiple times for the same property, unlike metro areas where generally all usage is on one bill.[9]

In remote areas, Ergon Energy requires customers to read the meter themselves on a quarterly basis and to report the readings for all the meters in order to generate customer bills. Ergon Energy only reads the meter every year or so.

Customers are not aware of the option to move to the two off-peak tariffs (tariff 33 and tariff 31), which are substantially cheaper than general use tariffs.[10] These tariffs are suitable for various uses including cold room, freezers, swimming pools and water pumps. If customers connect to off-peak tariffs, they might have to modify their behaviour to a small extent such as not frequently opening cold room doors during the hours when the power is off.

Ergon Energy is the sole retailer in rural areas of Queensland where there is no real prospect of retail competition. Prices are affordable at present, but agricultural customers are particularly concerned about future price trends at a time when the price that can be realised for agricultural outputs is not rising.

Estimated billing is quite common. In some cases, Ergon Energy will take a meter reading from the customer.

Country Energy (NSW)

These comments were made by Country Energy when it was still the distributor and retailer within rural NSW.

[9] Subsequent to our discussions with Councils, the Premier of Queensland announced the abolition of the ambulance levy on electricity bills from 1 July 2011.

[10] Tariff 11 is the general use tariff in Queensland and is 22.759 c/kWh plus a fixed service charge of $8.756 per metering point. Tariff 33 is the controlled supply economy tariff and is 13.673 c/kWh. Tariff 33 is available for a minimum of 18 hours per day (but it was reported to us that in some places it is often provided for around 22 hours per day). Tariff 31 is the night rate super economy tariff and is 9.284 c/kWh. Tariff 31 is available for a minimum of eight hours a day (but in some places significantly longer). There are no fixed service charges associated with Tariffs 33 and 31, and there is a relatively low minimum monthly billing amount – $6.094 – on each of these Tariffs 33 and 31. Rates are correct as of 1 July 2011, and are inclusive of GST.

Country Support is a hardship program for short and long term cases. For example, customers can pay for electricity once per year if the crop comes in once per year. Customers can take a payment break. There are a huge number of payment plans, including weekly, fortnightly, and monthly.

Country Energy gives tariff advice, and can install time-of-use metering. *Energy Answers* is a program for energy advice. Country Energy works with welfare organisations to provide customer rebates. Country Energy advises financial counsellors what is available to customers struggling to pay electricity bills.

There is always a trade-off between price and reliability. Work to increase reliability adds to price. The prices that customers pay are driven by regulatory processes rather than set commercially by retailers.

Customers like Country Energy being their retailer and distributor. It makes them "sticky". Many customers currently see the network and retailer as being indistinguishable. There is lack of understanding of choice, so customers stick with the company they know, which is Country Energy. This brand loyalty is stronger and more prevalent in rural areas than in the city.

On the other hand, customers do switch for lower prices. There are pockets in the local network area with active competition, with retailers offering for example a 7 per cent discount. It is expected that there will be more competition when the retailer and network separate, and with different branding following the completion of the NSW electricity retail business sales process.

Cost is also a customer issue. Customers are coming to expect far more service for what they pay, as prices increase.

Ergon Energy (Qld)

It is not clear that cost pressures and hardship are a rural issue. Most customers in hardship live along the coast. Inland, there is more close knit community support. There are some very remote aboriginal communities where Ergon Energy is doing a lot to assist the communities.

Ergon Energy's hardship program is aiming to move from being primarily reactive to more proactive. It will include stronger community engagement over time. Ergon Energy is trying to encourage customers who may be experiencing financial difficulties to come to Ergon Energy as early as possible, so that Ergon Energy can assist before they have substantial problems paying a bill. Ergon Energy can refer customers to financial counselling, and can provide information on government assistance programs and on energy usage.

Chapter 2: Reliability of Supply, and Information on Outages

We asked Councils about how they saw reliability of supply in their local region. Reliability of supply is concerned with the number and length of planned and unplanned interruptions to energy supply rather than the quality of electricity supply.[11] Quality of electricity supply refers to whether supply is a constant sinusoidal wave at 240 volts and 50 hertz. Quality of supply issues are discussed in Chapter 3 below.

Our general findings are:

- There are significant greater challenges in maintaining good reliability in areas where demand is growing strongly (e.g. Mount Isa).
- There are significant variations in reliability between larger towns (where reliability is generally good) and small towns or broad-acre areas (where reliability may be only fair).
- Generally there are fewer electricity lines and less interconnection and redundancy in rural areas compared to urban areas. This can mean that where there are underlying problems with infrastructure in rural areas (e.g. because the infrastructure is supplying demand in an area at or beyond its design rating or is ageing), these problems can persist in the form of reduced reliability for extended periods until the infrastructure is upgraded.
- Businesses that are highly reliant on power often have backup supply. This reduces the impact of poor reliability but at a significant cost to the customer.
- Impressions of reliability can be quite subjective. For example, they can be strongly influenced by whether or not there was an unplanned outage recently.
- Impressions of reliability are also driven by customer expectations. Long-term rural residents generally have lower expectations concerning reliability than residents who have moved more recently from urban areas where reliability was better.
- Major events such as cyclones, floods, or bushfires can result in very long periods without power. Customers are concerned about the lengths of such outages, communications regarding what is happening, and apparent anomalies such as when one area may be reconnected quite quickly but an adjacent area has a much longer wait for reconnection, with no apparent reason for the disparity.
- The distribution businesses of Essential Energy (NSW) and Ergon Energy (Qld) have been proactive in targeting and improving reliability in problem areas. They have devoted considerable resources to improving reliability. They have a significant suite of possible technical solutions to improve reliability.
- Essential Energy is generally good at providing notice of planned outages and of the time to restore unplanned outages. Ergon Energy is not seen to be performing as well in these two areas.

[11] Unplanned outages are often caused by natural events such as storms or flooding, though they may also be caused by unforeseen equipment failure. By comparison, planned outages are outages to enable construction or maintenance on the network.

Clarence (NSW)

Reliability of electricity in the area is quite good. The area is susceptible to thunderstorms. Most of the electricity lines are overhead. Essential Energy has recognised the need to upgrade the network and has taken action to improve the network and the reliability of supply. There have been some localised reliability issues – for example Iluka on the coast had one incoming unreliable line. Essential Energy addressed that by looping supply with Yamba. Yamba had similar issues on a more minor scale.

The area has an increasing population, and hence needs to upgrade its infrastructure accordingly. According to ABS, average growth rate in the area has been 1.1 to 1.4 per cent per year over the last few years. This equates to 500 to 800 new residents per year. The local population is spread out across 44 towns and villages. Small town reliability is on a par with Grafton, which is the main town in the area, apart from a few localised issues such as in Iluka.

Goulburn (NSW)

Essential Energy has publicised local infrastructure improvements. People read about these improvements, but do not necessarily pay attention to such positive news about infrastructure improvements. People generally focus more on bad news.

Interruptions in the electricity supply in the City of Goulburn have been due to ageing infrastructure and major weather events. Reliability has probably not changed significantly in the last few years in the City of Goulburn itself. In the City area, reliability of the electricity supply is perceived to be good.

In one particular area, a 33kV ring-feed was very reliable, but the supply is now on the 11kV network due to network reconfiguration. There have been three blackouts in this area in the last eight to nine months, whereas this area used to go for years without even a flicker.

In the Council area outside Goulburn, there is a normal rural radial network. Essential Energy is known to have been installing automatic reclosing rather than manual reclosing.[12] Therefore, minutes off supply should have improved, but people may not have noticed. People want high reliability and low cost. It is thought that reliability has improved over the last four years or so outside Goulburn, and the reliability was maintained over the last few months, irrespective of strong weather events and flooding.

[12] Reclosers attempt to close circuits and restore power following a momentary disruption. For example, if a tree branch falls across a line and short-circuits a line, the circuit will open and supply will cease. If the branch falls off the line, then a recloser can successfully restore power while if the branch remains on the line, the reclosing attempt will fail. Automatic reclosers do not require human intervention. They generally attempt to close circuits and restore power once or twice before leaving the circuit open if the interruption remains.

Griffith (NSW)

Council considered that reliability is generally reasonable. Essential Energy provides good notification of planned outages, and provides a good response to unplanned outages, e.g. storms. There are relatively few unplanned outages. Good information is available on the phone when there is an unplanned outage – telling the call whether the fault has been reported previously, where the issue is, and the time to resolve. There have been no recent outages.

Many businesses need constant power 24 hours a day seven days a week. Essential Energy has worked hard to improve supply.

Essential Energy as the distributor appears committed to improving infrastructure and updating and enlarging substations to meet the demand of local users.

Lismore (NSW)

Essential Energy is working on upgrading local infrastructure. In town, there is reasonable reliability, and Council is hopeful that reliability will improve further. In more rural areas, there is poorer reliability. Upgrades are currently being undertaken to make up for previous under-investment – not just to meet growing energy needs. Improvements in reliability from recent upgrades have been noticed within the community. In relation to unplanned outages, there are concerns over the length of the outages as well as their frequency of occurrence: interruptions can often last for around five hours and sometimes up to nine hours.

Essential Energy has engaged in public consultation on upgrades.

As far as Council is aware, there has never been an issue with businesses saying they will not come to the area because of perceived deficiencies in the reliability of the local electricity supply.

A local telecommunications provider in Lismore has historically had issues with reliability of supply, and has addressed these issues by installing its own backup supply. Other businesses that are reliant on energy in the area generally have their own backup – even in Lismore town itself. For example, Council has a generator on its own building – largely because the building serves as a local emergency management centre.

Shoalhaven (NSW)

Reliability is a major issue, as Council and industry have major user sites located at the end of rural lines with no backup supply interconnection. Natural disasters such as bushfires can burn power poles leaving sites without power for an extended period. For example, a major bushfire five years ago burnt for 25 days and destroyed 2,500 power poles and 200 homes across 4,500 square kilometres. Council lost supply for up to 10 days to its sewerage farms, and used generators on low loaders to recommence supply. Council has since spent a large amount of money buying mobile generators to provide short-term supply in the event of such interruptions.

Endeavour Energy has worked to improve some industrial load on rural feeders to the same reliability and quality level as urban centres. This has been done at no extra cost to the customers concerned.

Endeavour Energy is seeking to change to concrete poles over time in response to bushfire events. It has stepped up its inspection and testing program and is installing remote telemetry to monitor assets and locate faults more quickly. This has reduced the time taken to restore power.

Remote sites often have only one feeder. Council has installed back-up generation at key sites, which is much cheaper than a second feeder. In any case, a second feeder may be interrupted by an event such as a bushfire or wind storm.

In 2005, 200MW was shed in Shoalhaven without any warning. Transgrid as the State transmission provider provided some compensation to affected parties. Costs were significant as industrial processes rely on good supply. An SMS system has now been developed to give notice where possible of major interruptions.

Tamworth (NSW)

The city of Tamworth enjoys good reliability of supply, and when there is an outage power it is generally restored quite quickly. Outside the city, there are more supply interruptions, particularly during storms, which are quite prevalent in the area. In some areas, it was reported that supply can be lost a few times a week.

Though many use electricity for winter heating, wood fires and gas are also used for heating. However, in the summer, all customers use electricity for air conditioning; there is no alternative, and as a result the system struggles to cope.

When there are outages, the distributor, Essential Energy, has a recorded message on its call centre service, which generally makes it fairly clear what is happening, and when supply is likely to be restored.

Essential Energy as the distributor is also seen to be good at identifying where problems may arise in future, and upgrading the infrastructure to avoid future outages. It uses upgrades to create good publicity and good interest stories – involving the local press and television. Its communication and PR are seen to be excellent.

Bundaberg (Qld)

A major new substation has been installed. Reliability is generally good.

Cairns (Qld)

The recent Cyclone Yasi had a massive effect on electricity supply over a huge area.

Most of electricity supply to the Council area comes from central Queensland, so the area is reliant on other regions to get its power supply. The area is prone to up to eight cyclones each season. Cyclones are expected; they are not rare. In the aftermath of Cyclone Yasi, some suburbs regained power within a day or two. Some inner city suburbs were without power for three days; some suburbs were without power for up to two weeks, and this was not even where the cyclone hit. Some of these suburbs were not so remote – only 45 minutes drive from Cairns city centre. The power outage proved very difficult for residents and businesses. It caused a burden on Council to provide ice, food and water. This is besides the massive effort for the Council due to cyclone effects

that are not related to electricity supply. For example, the cyclone flooded the Esplanade which then had to be cleaned up, and there were trees down, building inspections, and so on. If a town or suburb is without electricity for ten days, it virtually shuts down.

Some residents and businesses have their own generators. There are a lot of local home-based businesses. Even if they have their own generators, they can be expensive to run for long periods of time. It is difficult to put a dollar value on the business lost and the inconvenience and extra costs borne by residents due to loss of electricity supply.

After the cyclone, the power supply was down for too long; restoration was not quick enough for the economic needs of residents and businesses. Generally when there is no cyclone, reliability is good, though some remote areas seem to have more frequent problems. In remote areas, almost every house has a generator. Reliability in the Cairns central business area is generally good even during thunderstorms and mini-cyclones.

Poor reliability of electricity supply makes it harder to attract businesses to the area. Access to broadband is similarly important for economic development.

There are also more general infrastructure issues. When there is a flood down south, no trucks get through, and therefore no food. The army has to fly supplies in; the locals want a flood-proof road.

Maranoa (Qld)

The highest priority issue that emerged from Council's community engagement for its community development plan was the frequency and duration of outages – particularly in rural areas.

Council spoke with Ergon Energy prior to our meeting with the Council. From Ergon Energy's perspective, storms and floods have impacted, causing more and longer outages.

There are significant cold rooms in rural areas, and electricity is needed to keep them cold. Some residents had to hook up their own generators to keep fridges going during outages. Many property owners have backup generators, but not sufficient to run a business at full capacity. Pumping of water also requires electricity, and backup generators are not sufficient for that.

Some local businesses have not been notified or at least were not aware of planned outages. For example, there have been outages from 10am to 3pm that have hit café lunchtime trade – the most inconvenient time for an outage.

There have been changes in usage such as new air conditioners which have put more pressure on the electricity infrastructure.

Anecdotally, reliability is generally getting better. However, some electricity lines seem to have habitual outages.

Businesses are also increasingly relying on electricity for communications and e-commerce, so outages hit them harder than before.

The Ergon Energy network management plan says that outages are trending up, but response levels are improving. Both response time and rectification time have improved.

Weather events with low probability of occurrence seem to be happening more frequently. Weather patterns are changing, and extreme events are becoming more commonplace. This has implications for the design rating of the distribution network.

The Council community development plan shows that rural customers want increased reliability and quality of supply.

Mount Isa (Qld)

Reliability has improved in recent years. The power used to go off when it rained, but it has been very reliable over the last around seven years. Ergon Energy is known to be investing in new network infrastructure. A major cause of outages is vehicle accidents with power poles.

Ergon Energy keeps extensive records on planned outages.

Western Downs (Qld)

In urban areas, there are few blackouts. Reliability is good, with no major reliability issues. Reliability has much improved in recent years. Previously, there were problems during hot summers. Western Downs has not had extreme summers or winters for some years; this may have helped.

The State transmission entity, Powerlink, has four major transmission projects to cover the new generation projects that are being developed in the area. This has also helped the reliability of local supply.

Whitsunday (Qld)

Following Cyclone Louis last year, there was no power for six days in one densely populated residential area. There was no communication from Ergon Energy during the restoration works, and residents had no idea why it took so long, or how long it would take to get power restored – until it actually was restored. Other areas had power restored next day. Ergon Energy's work to restore power after the cyclone was in general excellent, but there was poor communication. Fixed and mobile phone systems went down in the cyclone, so phones could not be relied on for communication. It is suggested that Ergon Energy could use radio or council offices to provide better information in these cases. One impact of lack of information is that residents cannot make informed decisions. If they knew the power would be out for six days, they could decide whether to move into a hotel, rather than sit at home waiting by candlelight. But without that information they cannot make that decision.

There are also unexplained outages on clear days. Food sometimes has to be thrown out; the local supermarket cannot get insurance for power outages. Insurance costs have in any event risen after previous claims. There are reliability issues throughout the region: in urban, semi-rural, rural and remote areas.

Heavy rain is commonplace. The infrastructure is believed to be at an age where it needs to be replaced. Some poles are visibly at an angle in wet ground.

The region needs secure, reliable continuous electricity supply. Some rural customers have their own back-up generation; however this is not generally the case in town.

There is an ageing population in the region. Energy is required to maintain life: to keep cool, and for medicine storage – many medicines need to be kept cool. Some residents require electricity for oxygen machines. Extended outages can be life-critical. Local hospitals have backup generation, but do not have sufficient facilities to care for the home-based residents who are without electricity in a case of extended outage.

AgForce (Qld)

The AgForce representative is located one hour's drive from Townsville. Ergon Energy response to outages is excellent. Power is supplied by SWER. Power was cut off one Sunday night in a storm; Ergon did not come out that night and so it was not until Monday morning 8.30am that power was restored. In the past, they would have come out Sunday night to restore power.

Country Energy (NSW)

Rural customers are increasingly reliant on electricity. They are not as tolerant of interruptions as previously. In the past, they may not have complained if power was off for one to two days. Nowadays, more equipment relies on electricity.

In particular, customers are becoming intolerant of the frequency and length of *planned* interruptions. Total *unplanned* time off supply is not perceived to be such an issue: customers can see why it is dangerous to reconnect too early, such as when there is flooding.

Ergon Energy (Qld)

Ergon Energy's SWER system is one of the most reliable in the world. Nonetheless, there is a commitment to improve SWER lines as what was considered "remote" in the past is now not considered as remote. Despite Ergon Energy's efforts, it must be recognised that some SWER systems stretch as long as the distance between Brisbane and Sydney, with well under 100 customers on them. Customers on such a line cannot expect the same level of service offered elsewhere as there are unavoidable issues with exposure and maintenance. Ergon Energy has an objective to improve performance of these lines, through change of technology. Ergon Energy is improving reliability through new technology. Ergon Energy is rolling out this technology to the most problematic sites and is looking at other technology solutions.

The customer landscape is changing. Commercial rural properties are dropping in number. There is a move to bigger properties with less predictable power requirements.

There are issues with lifestyle choices versus affordability. Queensland has moved from a winter peak to a summer peaking with the widespread adoption of residential air-conditioning. Ergon Energy has had initiatives in far North Queensland to encourage a reduction in total energy use and peak usage.

Collectively, reliability and quality of supply (discussed in Chapter 3 below) are by far the biggest issues of concern to users, roughly twice as big an issue as the next biggest issue. Concerns

encompass outage duration, frequency, notification, and voltage fluctuation. Outage frequency is the highest sub-issue of concern, then outage notification, then outage duration.

Ergon Energy has invested in a range of other technical solutions. It has a proactive monitoring program, and uses standby generation when it cannot get in to repair its network for any reason, for example due to ongoing flooding.

Chapter 3: Quality of Supply

For an alternating current (AC) system of power such as is supplied in Australia, quality of electricity supply refers to whether supply is a constant sinusoidal (sine) wave at 240 volts and 50 hertz. Fifty hertz means that the current is alternating 50 times per second. Quality of supply issues include any variations from this ideal, such as variations above or below 240 volts ('brown-outs' and 'surges'), variations from 50 hertz, and variations from a constant sine wave pattern of supply. Any of these types of variations can cause problems for particular types of appliances.

Reliability issues comprising the number and length of interruptions to energy supply were discussed in Chapter 2 above.

Our general findings regarding quality of supply are:

- There are some problems with quality of supply in some but not all rural areas. In some areas there are reported instances of equipment being damaged by poor quality of supply. Some customers use their own power supply equipment to prevent damage to sensitive equipment such as computers.
- Some outages may be caused by relays being tripped due to voltage and frequency variations.
- Issues with quality of supply are more common on single wire earth lines (SWER) than on three phase lines. SWER lines are more common in rural areas outside larger towns while three phase power is more common in larger towns.
- Some rural and regional industrial and business customers are starting to request three-phase supply. This may become more of an issue in the future as more appliances depend on three phase power (e.g. air-conditioners).
- Some inverters on solar panels installations switch off when there are voltage fluctuations above around 250 volts. This can cause the owners of the solar panel systems to lose revenue from foregone generation, often unknowingly.

Clarence (NSW)

Some areas have had surges. Generally, the quality of supply in the area is good.

Goulburn (NSW)

There are no large customers in the area who affect their neighbours' supply by increasing or decreasing use.

Voltage fluctuations between 220 volts and 260 volts have been measured. Customers may not always know of such voltage and other fluctuations. In some areas outside the city, fluctuations of this size have been known to trip relays and cause outages.

One particular issue is that solar panel inverters from Germany are only rated at 250 volts. When generating, the inverters can turn off if the voltage is over 250 volts. This is a problem throughout NSW.

Some customers run computers off uninterrupted power system to address supply quality reasons.

Griffith (NSW)

There have been some reports of brownouts; however, these are few and far between.

Three phase power is the main requirement for many of our larger industries and is not freely available everywhere. Most big clubs in town areas have three phase supply, though outside town areas users are supplied by single-phase SWER lines.

Lismore (NSW)

Quality of supply is generally good; there are some occasional flickers.

Tamworth (NSW)

There are generally no problems with quality of supply in the city of Tamworth. There have been instances of quality of supply issues in smaller towns outside Tamworth, in particular power surges which have caused appliances including televisions to be damaged beyond repair.

Bundaberg (Qld)

A major new substation in Bundaberg has been installed and reliability is generally good. Lights sometimes dim when air conditioners are turned on in the coastal region outside Bundaberg. Burnett Heads and other coastal areas have had some capacity issues.

Cairns (Qld)

There are no known issues with the quality of the electricity supply in the Cairns area.

Maranoa (Qld)

The number two issue that came through in community engagement for the Council's community development plan (after reliability) was surges and associated damage to appliances.

Council has no information on Ergon Energy's response to damage to these issues.

Western Downs (Qld)

There are some issues with the quality of supply on single wire earth return (SWER) lines in rural areas. In addition, some industrial and business consumers want but cannot get three-phase supply in rural areas. Council is about to embark on a study looking at the feasibility of extending the availability of three-phase power more broadly and the extent of demand among residential users for extended three-phase power. The study will use State Government mapping software to look at where use is located and what is needed from an economic development and planning point of view, and to determine what electricity and gas supply is required as industrial land development opens up.

There are some issues with quality of supply in rural areas. For example, fridges have been known to last only three months due to poor supply quality.

AgForce (Qld)

The AgForce representative is located one hour's drive from Townsville. Quality of supply is excellent. Power quality is not a problem.

Country Energy (NSW)

Quality of supply is an issue on SWER lines where an increase in use by one user may affect use by other users. People resent the idea that usage elsewhere on a SWER line can affect their supply.

With increased technology and electronic equipment, momentary outages have come to be more increasingly significant to users. Some appliances from overseas are not tolerant to trips in supply that are commonplace in Australian rural areas. Some appliances have computer chips with no protection to voltage changes. Supply quality is improving, but with the uptake of computers and other sensitive electronic equipment, customers' requirements for good quality of supply are growing faster than these improvements.

Ergon Energy (Qld)

Ergon Energy is improving power quality and reliability through the use of new technology. Ergon Energy is rolling out this technology to the most problematic sites first and is looking at further technology solutions for the future.

Collectively, quality and reliability of supply is by far the biggest issue of concern to users, roughly twice as big an issue as the next biggest issue. Within the quality of supply category, the most significant area of concern was voltage fluctuation.

Chapter 4: New Connections and Augmentations

New connections involve linking a customer to the network for the first time, and augmentations refer to expanding an existing connection. Issues around new connections and augmentations involve the lead times to connect, the costs involved, and the extent of competition in the provision of new connections and augmentations.

We found that:

- There is a strong perception among Councils in both NSW and Queensland that the lead time for new connections and augmentations is far too long. It is common for completed new developments to be without power for a considerable period. The delays are perceived to be getting longer. This is impacting significantly on new economic development
- In addition, the cost of new connection and augmentation is perceived to be too high, which is also impacting on new development
- Distributors are considered to be inflexible in the terms for payment and in sharing risks in relation to unallocated capacity within new transformers and other connection equipment.
- Distributors determine the size of new connection assets, and customers feel that they cannot influence this decision. Distributors may be over-sizing new connection assets to cover future growth and reduce their own costs. Distributors were not considered flexible in negotiations.
- There is little competition in the supply of new connection and augmentation construction services.
- There is dissatisfaction with the policy for sharing the costs of a new connection or augmentation with subsequent users. These policies are not seen to be working.
- In relation to major new customer connections and augmentations, distributors do not always work closely with Councils and others to ensure timely provision. This can also extend lead-times.
- There is little information to customers about alternatives to new connections and augmentations, such as local generation which may range from diesel powered to solar panels.

Clarence (NSW)

Council is not aware of any significant issues with new connections taking longer than expected or with the costs of new connections.

Goulburn (NSW)

New connections to the Essential Energy electricity distribution network take a long time and are expensive. Council has had irrigation, water treatment plant upgrades, and other infrastructure, all ready to be commissioned, and simply waiting for connection. There are only a few local contractors available to do the work. Essential Energy no longer offers to undertake customers' construction works – at any price – they barely have the staff to cover their own capital works. Even a relatively small (say $14,000) job to remove poles can take three to four months.

There is one Goulburn contractor available to do high voltage connections. There is one contractor available from the Canberra / Queanbeyan area. There is one contractor for overhead poles and wires. These limited resources lead to long lead times. These lead times are experienced even for small works in the vicinity of $50,000 to $70,000.

Distributor charges for connection are significant. More contractors in area would get the job completed faster even if costs did not decrease significantly. Things happen much more slowly in a regional area than in a capital city. People want to move out from the city to regional areas and are frustrated by the time it takes to get works completed.

The time delays are not a new phenomenon, though they have worsened somewhat. Since the 1970s, six to twelve months lag between construction and rural power connection was common. Now a 12 months delay is considered "quick".

Griffith (NSW)

From time to time, Council invites businesses to present their plans to Council. Country Energy presented on the upgrades they are doing. There is a lot they are working on – catching up after less investment in previous years.

There has been a rapid increase in the electricity needs of local businesses within the area. Essential Energy has generally reacted well to meeting business' new power needs in town. Council is not aware of out-of-town issues.

There is some anecdotal information on delays in new connections.

Alternative energy contractors are called on to complete new connections works as Essential Energy distribution staff are busy with maintaining and upgrading their network and systems. Local companies have provided a very good service for new and existing business wishing to move or expand.

Lismore (NSW)

Experience has shown that customers get better prices and service from competitors to Essential Energy when seeking to connect. There used to be two competitors to Essential Energy; one has left the market, leaving only one competitor to Essential Energy. There are concerns at the reduction in competition.

There are issues with lead times. For example, Council knew it needed sub-station upgrade for its new Sports and Aquatics Centre. Council thought it had allowed enough lead time – six months. But Essential Energy left it to "just in time" – and then they had to get a sub-station that was meant for somewhere else. There are other instances of new buildings all ready except for electricity supply. The area is growing, and the entire infrastructure is at capacity. Therefore, all significant new developments require a sub-station upgrade.

There was one instance where it was claimed that Essential Energy attempted to charge $10,000 to turn off supply and reconnect during painting of some premises, but this was negotiated down.

The average cost of pole replacement or movement is now $10,000 to $12,000, and up to $16,000 if the pole is attached to a substation. In addition, there can be substantial lead-times to have this work performed – six to nine months is a fair estimate of the expected lead-time.

There has been substantial increase in the cost of new supply of a pole and for pole moving: from $3,500 to $16,000. Pole moving is often required as part of road improvement or road widening schemes.

Customers have to pay the full cost of new a sub-station even if they are not using full capacity, provided they are using at least half of the capacity. The customers may get some money back if and when someone else comes in and takes capacity from the asset. There is concern that the private customer is the banker for a capacity upgrade. Essential Energy decides what capacity to install; the customer cannot influence the building of a larger sub-station even where its requirements would be less than half total capacity.

Rural residential properties may face large charges for new connections.

Shoalhaven (NSW)

There is full contestability in provision of new connection assets. Endeavour Energy as the local distributor has withdrawn from this work. Council maintains a list of constructors for new connection assets, including for subdivisions.

Endeavour Energy expects major users to fund the whole of a new augmentation, without any capital contribution from subsequent connecting users. It also expects all of this cost to be paid upfront rather than over time. This contrasts with, for example, the approach by Council in providing water and sewerage services, where Council apportions some of the upfront capital works costs to anticipated subsequent users. Endeavour Energy seems unwilling to take any risk in relation to load for new assets.

Endeavour Energy does not work very closely with Council for planning purposes. It therefore has difficulties meeting requests that are out-of-the-ordinary. This can result in significant delays in connecting new industrial load. For example, in 2010 one plant seeking a major new supply contract will not be able to obtain more than half of its requirement until July 2012 due to the need to upgrade a 33 kV line to the industrial estate where it is located. A second plant seeking significant new power for use for short periods has not been able to obtain supply.

Tamworth (NSW)

For residential customers, electricity connections are generally organised by builders or developers. These end-users may not see itemised bills for electricity connections. The cost was therefore not known for it to be an issue to the end-user. Council generally requires undergrounding of cables from the pole to the residence for sub-divisions as a condition for development consent. Some new developments are required to have full undergrounding with no poles. Thus much of the cost for new residential developments may arise through this Council requirement.

Bundaberg (Qld)

Ergon Energy has quoted twelve months lead time for infrastructure enhancement for new developments. A new building development within the Bundaberg Local Government Area was commissioned a year ago, but is still restricted to one tenant until a new transformer is installed.

The regional inland population is set to double in the next 20 years, plus some growth in coastal areas. There is a need for increased electricity capacity and infrastructure. Growth plans and expansion generally may be hindered by availability of electricity.

Response time for construction work is not always timely. For example, to move a power pole or transformer can take up to two years. Ergon Energy is helpful, but apparently under-resourced for this type of work. The issue may be lack of a residential service level against which they have to perform.

Cairns (Qld)

There can be long lead times for new connections – these lead times are considered to be unacceptable. A few years ago, Ergon Energy was so far behind that there were people in completed houses in Edmonton without electricity.

Maranoa (Qld)

From discussions with the community, it came through very clearly that the cost of new connections and the time taken for new connections outside the town area were major issues for residents and businesses.

Mount Isa (Qld)

The electricity network in Mount Isa is not connected to the national grid. CS Energy Mica Creek is the only generator on the Mount Isa network. There is substantial need for more energy in the Mount Isa area, and Council reported that attempts to get more generation capacity in the area had not yet been successful. This is a significant issue constraining the local economy and employment. There is significant ongoing pressure from industry for more power. Mount Isa is a major growth area. A recent bank study reported that this region was a key factor in helping the country out of financial crisis. This is therefore a national issue, not just a regional issue.

Xstrata has now also built its own power station. Before it did that, it tried to persuade Ergon Energy to build its own power station, without success. Xstrata already had a mine power station for backup. Building the second power station, fuelled by gas, was perceived as a last resort, after negotiations with Ergon Energy failed to deliver an additional generator from Ergon Energy.

There are up to 32,000 people in the Mount Isa area. One standalone power station would cover the needs of that population, but the substantial demand for power arises from mining. There are a dozen mines around the area, with very substantial power requirements.

The focus was said now to be on the Copper String project to develop a power line from a location to the south west of Townsville to Mount Isa, to connect Mount Isa to the grid. Xstrata is a founding member of Copper String project.[13]

Council reported that there were difficulties to get electricity supply for its last residential development. It took two years, and it was unclear why delays occurred. There is concern that similar issues may arise with future residential developments.

Western Downs (Qld)

The time taken for new connections was considered to be too long.

Whitsunday (Qld)

Council provided two examples of issues of problems with new connections:

- For a recent development, it took six months to get a new connection. The builder was operating off his own generator during that period, at high cost.
- For a new duplex, there was enough power supplied for one side but not the other.

AgForce (Qld)

The cost of new connections is exorbitant. This cost has put the property off creating tourist facilities. This is a disincentive to diversification. The likely cost for 350 metres of new line for a residential connection on the property would be $8,000. If the new business failed, the electricity connection cost would still need to be paid.

The time to obtain a quote for a new connection is very significant: this is an area where Ergon Energy could improve.

The cost of network reinforcement for new supplies is also very significant. On-site generation is the only real way to mitigate this cost. Diesel generators are not cost-effective, though solar-powered pumps tend to be more cost-effective and of adequate reliability. There is insufficient community information on alternatives to new connection. This information may be advertised in daily newspapers, but rural areas often do not get newspapers delivered.

[13] As our research was being written up, AGL and APA announced on 6 October 2011 that they are to develop a new 242 MW gas fired power station at Mount Isa. See www.agl.com.au/about/ASXandMedia/Pages/AGLandAPAtodevelopnewMtIsagasfiredpowerstation.aspx

A further announcement was made by the Minister for Energy and Water Utilities on 23 December 2011 that Ergon Energy had entered into a Power Purchase Agreement with the new power station and "to secure the energy supply for its North-West Queensland customers" and "provide security of supply for existing customers and ensure future supply into the growing region". See http://statements.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=78312

Country Energy (NSW)

Country Energy has a policy to share the costs of a new connection in circumstances where the customer is only using part of the new connection. If the asset will be used by more than one customer, costs are shared. Backbone high voltage costs are borne by Country Energy. If a dedicated asset is used, the customer has to pay. There is a reimbursement scheme if another customer comes on and also uses the asset. The rules regarding capital contributions have been agreed with IPART, and are available on the IPART and Country Energy websites.

Country Energy encourages competition in connections.

When Country Energy gives a timeframe for a new connection, it quotes the longest case scenario of timeline. The commonest type of new connection now is for solar panels. There are no known complaints on timescales.

As discussed in Chapter 6 below, the NSW State Government's 60 cent per kWh feed-in tariff (which has since been curtailed) caused an uptake of solar panels and required installation of gross meters rather than net meters. A lack of access to gross meters caused a backlog for connection of new solar panels for Country Energy and most other distributors.

Ergon Energy (Qld)

The costs of new connections can be high. It is not economic to connect some very remote rural properties to SWER systems, for example North West of Mount Isa it costs $1m per customer to connect them to the SWER system.

Ergon Energy runs generators in some areas as an alternative to connection.

New property construction must take account of cost of connecting to energy supply, and the time it takes to make the connection.

Staged payments are charged for some new connections.

On large projects, Ergon Energy customer managers work one-on-one with the customer. They work with councils on large projects, residential developments, strategic planning and designated growth areas.

Large customers such as shopping centres and building developers have an avenue to approach the Mines and Energy Agency within the Queensland Department of Employment, Economic Development and Innovation with issues and concerns around new connections.

There is some competition in the provision of supply of new connections in some areas; but competition is largely absent in most of Ergon Energy's service area.

Chapter 5: Community Relationships with Electricity Distributors

In discussing community relationships with the local electricity distribution business we covered topics that included Council and community involvement with electricity distribution planning and decision-making and consultation in general, local employment, and other aspects of community involvement such as electricity distribution business sponsorship of local shows and events.

Our general findings are:

- Distributors generally have a good reputation in the community and have established significant ties through sponsorships.
- There was often a one-way flow of information from distributors to Councils and communities, and it was perceived that the distributors generally did not proactively seek Council or community input to distribution planning and decision making. Some Councils stated that they would like to have more such interaction with the distributors. With regard to wider community involvement in planning and decision making, the distribution businesses were thought to be doing a good job, and there was limited community interest in further involvement.
- Several Councils in New South Wales mentioned the strength of the Country Energy brand, the role of Country Energy as a local employer, and how that strengthened both the distribution and the retail arm of the business. As discussed above, since our meetings there has been restructuring of the NSW electricity supply industry, resulting in the sale of the retail arm of Country Energy under the Country Energy label and the rebranding of the distribution arm of Country Energy as Essential Energy. It remains to be seen how this affects the view of the distribution arm with the public.
- In Queensland, Ergon Energy's retail brand is not a particular issue. Ergon does not need to rely on its retail brand to compete since it only offers retail services in areas of the State where the standing offer tariff is below the cost of supply.

Clarence (NSW)

At the time of the interview, Country Energy still operated as both the distributor and retailer so Council's remarks were made on that basis.

Council had just constructed an off-stream storage dam and liaised with Country Energy. It also works with Country Energy on streetlights. Council communicates with Country Energy on an 'as needs' basis.

In relation to the opening of a new sporting ground, Country Energy and its personnel donated time and equipment outside business hours.

There is a high level of interaction between Country Energy and the community. Involvement includes sponsoring an art prize through a local gallery, and sponsorship of local sport.

There is a lot of local brand goodwill with Country Energy.

There is a major Country Energy depot and a training facility in Grafton. Country Energy also has a large office presence in the town. There is also a depot in Maclean. Country Energy's field staff are mobile, rather than being fixed to a depot. Design engineers in Grafton design sub-stations; there is a large office there.

Goulburn (NSW)

At the time of the interview, Country Energy still operated as both the distributor and retailer so Council's remarks were made on that basis.

Country Energy sponsors the Goulburn Show, Candles by Candlelight, and a local football team.

There has been no recent community meeting for Country Energy to give information to the community or seek input from the community.

Council sought information from Country Energy on new streetlight technology. The response had to come from "experts" in Port Macquarie rather than from local staff, and the response was that it will take two to three years for a decision. There is not a good history of Council influence on Country Energy.

The local population view is generally that it's Country Energy's business to manage infrastructure provision, and they expect Country Energy to do it without much involvement from them.

Country Energy has kept works depots and retail shopfronts to pay bills in major towns. It has closed some retail outlets for appliance sales in smaller towns. Country Energy's advertising slogan is "We live here too": we are part of the community. This is mostly seen through Country Energy's employment of local apprentices. Maintaining local employment forms part of the Country Energy's public relations.

Griffith (NSW)

There is a local Essential Energy depot in Griffith which is considered to be service-focused.

Council has a good relationship with Essential Energy and meets regularly with representatives to seek updates and to assist them with their future plans.

Lismore (NSW)

At the time of the interview, Country Energy still operated as both the distributor and retailer so Council's remarks were made on that basis.

Generally communications between Council and Country Energy are good. There is some Country Energy sponsorship of community events. Country Energy's slogan is: "We live here too".

Country Energy has a depot and major sub-station in South Lismore.

Tamworth (NSW)

At the time of the interview, Country Energy still operated as both the distributor and retailer so Council's remarks were made on that basis. Country Energy was considered to have good local credibility. It sponsored local community events and sports and provided training for many of the local electricians. When they show members of their workforce on television advertisements, they are people who the viewers recognise from their local community.

The local regional manager of Country Energy generally briefs the mayor and council on any significant electricity supply issues, upgrades, etc. There is good communication from Country Energy in regard to infrastructure planning. This is seen to be a one-way flow of information from Country Energy. Country Energy does not engage in consultation to get people's input into its decision making, and council is unaware of how if at all Country Energy gathers community input. When council holds community forums or budget meetings very few people turn up, and the same attitude might be expected in relation to any stakeholder sessions held by Country Energy about infrastructure provision. Council's view was that people only attend such events if they are directly connected to the issue and have a specific problem. Therefore, community forums on energy issues may also not be valuable. People outside the city may be more involved and therefore more open to attending such a forum.

Bundaberg (Qld)

Ergon Energy sponsors a range of community events, with a budget for funding local community groups. These initiatives come from Ergon Energy Head Office.

Ergon Energy is not known to pro-actively communicate with the community and seek community engagement. Council would value such community engagement and communication.

Cairns (Qld)

Council Planning and Infrastructure Services have good relations with Ergon Energy. They interact with Ergon Energy on a daily basis regarding planning and works. However, Ergon Energy does not hold community meetings.

Local people do know who Ergon Energy is. Even if people do not generally have a good view of electricity supply, they do not think badly of Ergon Energy as a result.

Ergon Energy engages in community sponsorship. Last year, Ergon Energy was not as active as in previous years.

Ergon Energy has local depots and staff. The new Ergon Energy site in Edmonton will be the base for around 450 staff, though some will only visit periodically as they are field-based.

Maranoa (Qld)

Ergon Energy has one major depot in Roma.

There is no particular Council engagement with Ergon Energy. The view was expressed that it would be good to interact with Ergon Energy on the Council community development plan.

Ergon Energy sponsors some community events and activities, but generally has a low profile in the community.

Western Downs (Qld)

Ergon Energy and Powerlink have explained their respective future plans to Council; this has been very useful for Council. The community does not hear much about these plans, though there has been some promotion of major projects.

There is a short lead time for outage notification. There is no general information from the networks on planned work.

Ergon Energy has sponsored some community functions in Toowoomba (i.e. the Spring Festival) but not in the Western Downs area.

Ergon Energy has a depot in town with 40 employees based in Dalby.

Whitsunday (Qld)

Ergon Energy has local depots.

Ergon Energy does not generally make contact with Council or councillors.

AgForce (Qld)

Stakeholders' access and input to decision making is limited by the extent of stakeholders' own motivation, interest, and time. Stakeholders generally will have to travel to town to participate in discussions with Ergon Energy – as the distances are significant stakeholders need to have a strong interest in the issue. Recently, Ergon Energy wanted producers to attend a one hour meeting half-an-hour away in travel time. They paid producers $100 to attend, which was a drawcard.

Ergon Energy does not employ as many personnel locally as it used to.

Essential Energy (NSW)

Essential Energy has a depot in most areas, but some depot closures are not well-received. Local residents perceive that there may not be sufficient local staff to deal with outage and other events.

Communications with community are undertaken in eight regions. "We live here too" is Essential Energy's theme. Essential Energy has Community Communication Managers and has set up Community Advisory Boards. There is a Rural Advisory Board in each of the eight regions. Essential Energy is perceived to be very connected with the local community. For example, energy advisory forums are held even in nursing homes, and Essential Energy participates in exhibitions, expositions, and field days.

Communications with councils and businesses are undertaken at corporate level rather than regional level.

Chapter 6: Environmental Matters

Our discussions with Councils on environmental matters covered emissions trading, climate change policy, solar feed-in schemes, and other renewable energy technologies.

Our major findings are:

- Solar panels have had high take-up in some but not all areas. The rate of take-up has fallen as subsidies have been removed, and the feed-in tariffs have been reduced or abolished. The process of considering whether to install solar panels has made some consumers more aware of the cost of electricity and other aspects of electricity supply.
- Factors such as transient populations, renting, and older style housing tend to drive up energy costs. In some cases, these factors reduce interest in or the take-up of energy saving measures such as solar panels or building insulation.
- Councils and some consumers are interested in green products. Most Councils consider themselves as environmentally conscious and see taking an initiative in regard to climate change and support for renewable energy as being part of their leadership role in the community.
- Councils have looked in particular at their energy consumption for streetlights to try to become more energy efficiency, and save money.
- Some consumers may require more education to buy green products. Councils and communities are seeking more information about the full range of green generation and supply products available to them.

Clarence (NSW)

There was a big rush to install solar panels in the Council area before the NSW government cut the value of the feed-in tariff. Just looking into whether to install solar panels made people more aware of the cost of electricity and other aspects of electricity supply, such as changing to a Time of Use (TOU) tariff, rather than just using the meter and associated tariff from when the property was built.

Council is a large user of electricity. Council purchases now include ten per cent green energy, though this costs more than electricity that has no certified green power component.

Council has a responsibility to address its own contribution to climate change and to take a leadership role in the community. The community itself is somewhat conservative, although this is changing as people relocate from metropolitan areas. Some residents are fairly sceptical about whether there is man-made climate change. The community is aware of the issue to a range of degrees, and of the concept of 'think globally, act locally'.

The cane industry typically burn before cutting cane. They have now constructed a co-generation plant, although but it has not turned out to be profitable. Coal seam gas offers lower emissions than coal when burnt to generate electricity but this has to be measured against local angst over drilling.

Increased uptake of solar panels for electricity generation and water heating may be driven by increased cost of coal generated electricity, perhaps through a carbon price.

There is reduced take-up of solar panels since the NSW feed-in tariff reduced; demand dropped right off. State Government may need to relook and to think more long-term, perhaps increasing subsidies.

There is a perception that electricity retailers do not have incentives to encourage customers to reduce consumption and that they would prefer to sell more electricity.

There are restrictions on new electric hot water systems. To meet the NSW Building Sustainability Index (BASIX) targets,[14] property-owners are required to install a solar hot water system or a heat pump or a similar efficient system.

Goulburn (NSW)

Interest in solar panels is beginning to increase in the area. This is perceived to be motivated by the increasing price of electricity. There is an installation scheme with no up-front payment which was attractive to some residents before the recent reduction in the State feed-in tariff.

Council set a target for a 30 per cent carbon emissions reduction; however, this has been hindered by cancellation of federal funding of Council's partner for public education.

There is a Goulburn group that wants to put 1,000 solar panels on local roofs. They are working with Council to achieve this; they want Goulburn to be the green capital of the Tablelands.

The community is not generally engaged on climate change. Interest in solar panels may be motivated by the feed-in tariff rather than due to genuine concerns about climate change. The area is far enough from the coast not to be affected by rising sea levels.

There is awareness of carbon prices having the capacity to influence electricity prices.

Council has sought information from Country Energy on new streetlight technology which would reduce carbon emissions.

Lismore (NSW)

In the Northern Rivers Area, there is a fairly strong sustainability brand. Solar generation in the area is in its earliest stages of development. Council has installed panels on the roofs of its buildings.

Council is concerned at the State Government's reduction in the amount of the feed-in tariff. Council wants to understand what the reduction will do to their local industry and to future installations.

[14] Introduced by the NSW Government, BASIX, the Building Sustainability Index, ensures homes are designed to use less potable water and be responsible for fewer greenhouse gas emissions by setting energy and water reduction targets for house and units. BASIX is one of the most robust sustainable planning measures in Australia, delivering equitable and effective water and greenhouse gas reductions across NSW. For more information see www.basix.nsw.gov.au/information/about.jsp.

Bundaberg (Qld)

LED products use much less electricity than existing light bulbs. Council is interested in obtaining Federal Government funding for LED lighting for Council buildings and streetlights. Council is interested in general in funding for low energy public lighting. Ergon Energy currently replaces like with like; it does not change existing non-LED lights to LED even though they use much less electricity.

Council also queried whether all streetlights have to be on all night. Council has not identified how best to engage with Ergon Energy to achieve a reduction in the brightness of the streetlights at some times during the night while meeting requirements around Australian Standards, risk mitigation and public expectations.

In relation to solar panels, the time taken to connect panels to the grid can be an issue that discourages some consumers from installing them.

Council is interested in having more local government investment in renewable electricity generation. This may be facilitated through subsidies and simplifying application Council and other approval processes. A recent private residential application for a wind turbine required a full-scale planning application to Council. Council is not yet familiar with the issues to be considered in an application of this nature, and may need further fine-tuning of its processes to manage such applications expediently. Consistent standards across different local government areas would be advantageous.

Residential customers installing solar panels have faced high fees from Ergon Energy for changing existing meters. This discourages take-up of solar panels.

There has been low take-up of the Queensland Government's ClimateSmart Home Service program, which provides more energy efficient light bulbs and an energy monitor for a subsidised price of $50.

Griffith (NSW)

There is lack of information on how to generate renewable energy – both regulatory information and supplier information. Consumers cannot easily sell back surplus generation from a system bigger than 10 kW. This is a major inhibitor as Griffith is home to many large industries wishing to be proactive, but with few incentives to do so. The limit of the feed-in tariff is 10 kW; above that level the customer has to negotiate directly with the distributor and retailers, and there is no clear path or information available on how to do this. It is up to the distributors and retailers how they wish to respond to users installing systems above 10 kW.

Shoalhaven (NSW)

Council is looking at energy saving and retrofitting, partly from environmental motivations.[15]

[15] Retrofitting involves modifying existing appliances and buildings to be more energy efficient, for example by installing insulation.

Tamworth (NSW)

People with older properties are interested in increasing the energy efficiency of their properties through measures such as installing insulation. There is also a perceived need for education on energy efficiency, including basic education on closing doors and windows to retain heat. Older people still maintain traditional practices that are not necessarily taking into account the efficient use of energy. Country Energy does some promotion of energy efficiency, such as providing free energy efficient light bulbs.

Some consumers chose to take a green energy supply from Jackgreen. As discussed above, Jackgreen has since gone out of business, which may have discouraged some from switching retailers in the future.

There is a lot of local interest in solar panels. Many panels have been installed, and rising costs of electricity are expected to drive further interest in solar panels to enable people to generate their own electricity, as well as using solar energy to meet on-site heating requirements. Feed-in tariffs are easy to access, and they are popular. The installers look after the paperwork for rebates on the installation cost.

Even with rebates, there are perceived to be high upfront costs for solar panels, so that the more affluent can afford to install panels while less affluent users are deterred.

There was a feeling that some impartial advice on solar panels might be useful. It is difficult for each individual to research what is best for them. Advisory services on energy choices would be helpful. Two or three private companies are offering solar panel installation. Larger electricians are also entering the market. Some people are putting wind turbines in their back yard. Country Energy is not itself offering to install solar panels.

Tree planting as a means of greenhouse gas abatement is common in the area.

Small and large residential consumers have become interested in water saving and conservation. Tanks are being installed for rainwater storage. There are Council, State and Federal Government rebate schemes, and people are getting money back from all the schemes for same installation. Average water consumption per head is certainly lower than ten years ago.

Cairns (Qld)

The Cairns region seeks to be sustainable and green friendly. “Tropical expertise” looks at building design to fit the region. There is a culture of delivering services in an eco-friendly manner.

NQ Solar works all over the region. There are lots of solar panel installations. The local universities are active in climate change research. There is a big push for restoring natural habitats, and other environmental matters.

Maranoa (Qld)

The Council community development plan shows that customers want to explore opportunities for alternative power sources for generation.

There are a lot of small scale solar panel installations in the area. There are just over 1,000 installations out of 3,500 households in Roma. This was due to a particularly attractive State Government incentive by postcode which covered Roma. Customers paid only $500 for panels and connection, plus an ongoing fee. There would have been even more take-up if the incentive had been better promoted; some only found out about the scheme on the day the offer closed.

The Council community development plan shows that people are interested and want more information on what they can contribute to sustainability: power, water use, and waste disposal.

Residents are not aware of the Queensland Government's ClimateSmart Home Service program, which provides more energy efficient light bulbs and an energy monitor for a subsidised price of $50. There have been some TV ads about this scheme but not recently. There is not much promotion of energy efficiency activities.

Mount Isa (Qld)

Large scale solar generation needs to be near an electricity transmission line to be economic. It also requires access to large tracts of flat land, which tend to be priced at a premium over other land.

Solar panels on roofs are not considered to be economic for the transient population in the Mount Isa region. Even if people own their houses and rent them out, they will not see the benefit themselves if they install solar panels in the rental houses.

It was thought that some residents had spent a lot on solar panel connection and saved very little.

Western Downs (Qld)

There has been very low uptake of residential solar panels. There are no local solar panel providers in town. Anecdotally there have been some bad experiences; changes in Government programmes have led to word of mouth negative comments that may have discouraged people from installing solar panels.

Whitsunday (Qld)

Council is very keen to see more green energy being used.

AgForce (Qld)

There has been no promotion of energy efficiency in rural areas. A lot of education and public awareness is missing and would be advantageous. The interviewee hosts training, and find that the children that come for training are wasteful with energy and water.

The interviewee spent $17,000 on solar panels "because it seemed like the right thing to do", though she is not convinced that the investment was fully economic.

Electric water heating is costly.

The interviewee has not seen any local promotion of energy efficiency programs such as home energy monitors. The interviewee is not aware of energy audits being offered.

The cost of network reinforcement for new supply can be very significant. On-site generation is the only real way to avoid that cost. Diesel generators are not cost-effective. They have three very large solar pumps on their property. North Queensland has 250 sunny days per year, and should use more solar energy. They used to have a backup diesel generator, but it is no longer needed as the solar panels provide adequate reliability. There is inadequate community information on generation alternatives. Residents do not get a daily newspaper in rural areas, so are not aware if there is newspaper advertising of such options.

Ergon Energy (Qld)

Ergon Energy is engaging with renewable energy through the Solar Cities program at Townsville and Magnetic Island.

Essential Energy (NSW)

The State Government's 60 cent per kWh feed-in tariff (which has since been reduced) caused mass uptake of solar panels and required installation of gross meters rather than net meters. When the scheme started, Essential Energy did not even have a source for gross meters within Australia. There was therefore a backlog for connection of new solar panels for Essential Energy and most other distributors.

Chapter 7: Local Generation Possibilities

This Chapter discusses local generation possibilities, other than solar panels which were discussed in Chapter 6 above.

Our major findings are:

- Local generation possibilities (other than solar panels) are not being considered in most rural and regional areas. Only four of the twelve Councils we met had any information to contribute regarding local generation opportunities (other than solar panels).
- One Council has local coal seam gas which may be a major new source of energy for the area.
- One Council reported local businesses looking at bio-energy as an alternative generation source and finding it complex to arrange connection to the grid.
- One Council reported new technology generation: solar parks, wind farms, geothermal, and coal seam gas, which will start to come online in the next few months. There are issues regarding whether the local community will benefit from lower prices as a result.
- One Council reported initiatives for local generation that may help improve local security of supply.

Clarence (NSW)

A new local coal seam gas find could be a major new source of energy to the area, which could change energy supply and pricing considerably. This could contribute to attracting more major energy users to the region and generate income from sales of gas to other regions.

Griffith (NSW)

Some businesses have been looking at bio-energy as an alternative generation source. It is not easy for them to organise this. A 20-50 MW bio-energy generator may be feasible, but there is lack of clarity around regulation. In addition, a transmission agreement would be required which would be complex to arrange. The process is perceived to be more complicated than necessary. It is still early days in this process. It seems not to be easy to adjust Essential Energy's thinking – the organisation does not appear to want to change to adapt to businesses' new circumstances as micro-generators as well as consumers. The rationale is to use waste products in various businesses to generate electricity, instead of disposing of them. There may be environmental benefits, and the businesses see electricity generation as a means to make a new product in their business, backed by a financial business case. Having on-site generation would also help with security of supply.

Western Downs (Qld)

The area will have new technology generation: solar parks, wind farms, geothermal, and coal seam gas, starting to come online in the next few months. But the area is not getting local cheaper electricity or gas supply, and this is a cause of resentment for the local community.

There has been opposition from landowners to these developments. The area is rich in coal and gas, and is good for solar generation, and wind generation to some extent. There has been some disturbance to agriculture from these developments.

Cairns (Qld)

There has been talk of a wind farm on the Tablelands to provide local generation to help local security of supply. The project is seeking a federal subsidy to improve its business case. Local gas-fired generation is also a possibility. There is a local push for a more green economy.

Chapter 8: Visual Amenity and Undergrounding of Cables, Tree Clearing and Land Access

This Chapter discusses physical issues with vegetation management by distributors, land access by distributors, visual amenity, and undergrounding of power lines. If distributors cannot easily gain access to land and property to read meters, they may also issue estimated electricity bills and this issue is also considered in this Chapter.

Our major findings are:

- There have been issues with community concern regarding what was considered to be over-aggressive lopping of trees for vegetation management. Generally improved communications with the distributor and distributor clarification of requirements has improved the situation and now distributors are generally seen to be doing a good job with vegetation management.
- Councils often require undergrounding of power lines for new estate developments. Undergrounding of power lines improves visual amenity and may improve reliability in some cases, but is more costly to install and augment. Due to these cost concerns, there is otherwise generally no incentive to underground power lines except where it is required, though it was reported that Endeavour Energy would prefer to underground new lines.
- In some rural areas of Queensland where it would be costly for the distributor to attend the property to read the meter, estimated bills are more common. In some cases, customers are required to read their own meters. The practice of estimating bills can cause problems as the customer may be paying too much or too little and not being kept informed about the true cost of electricity.
- We did not hear of any significant issues with land access by distributors disturbing cattle or causing damage to crops.
- There have been some issues with the amount of compensation paid for easements and the size of required easements.

Clarence (NSW)

There are generally no issues with vegetation and tree clearance. Some years ago in Grafton, an old town with fruit trees, tree clearing caused concern. Essential Energy has since explained better its requirements for vegetation management, which has reduced these concerns. There are occasional local issues with outages due to vegetation.

In Grafton, some main streets have undergone refurbishment, with new footpaths and undergrounding. Essential Energy worked closely with Council and made significant contribution to the project.

There are no known issues reported in the local media in relation to property damage caused by local distributors. Council would expect local media coverage if there were an issue.

Goulburn (NSW)

For new residential developments, there is a Council requirement for undergrounding of electricity cables.

Tree clearance is accepted as necessary. There is no particular concern about the way Essential Energy goes about tree clearing. Essential Energy publicises the need to clear vegetation to avoid bushfires and maintain reliability.

Tree clearing around main lines is performed by Essential Energy or its contractors, with no great adverse public problems. There are no visual amenity issues with respect to poles; some residents do not like wind farms.

There are no particular issues with land access by distributors.

Griffith (NSW)

Some consumers are concerned about tree lopping by distributors.

Lismore (NSW)

There have been some difficult negotiations between Council and a distributor over easements.

There is not perceived to be an issue in regard to estimated bills due to lack of actual meter reads.

Essential Energy is perceived to be heavy handed on tree pruning, resulting in community concern. Council is in dispute with Essential Energy regarding street trees, while still appreciating that Essential Energy has its own requirements. There have been some examples of consultation with council and community around vegetation management, in particular in relation to some old gum trees in school grounds.

Essential Energy is not keen on undergrounding of cables due to the cost.

Shoalhaven (NSW)

Vegetation management is not a major issue. Endeavour Energy prefers to underground new lines, but undergrounding is 50 per cent more expensive than overhead lines and is harder to augment in the future. As a result, Endeavour Energy has agreed with Council to install overhead lines to some industrial subdivisions, though generally commercial subdivisions and all residential subdivisions are connected by underground lines.

Tamworth (NSW)

As a condition for development consent, Council generally requires undergrounding of cables from the pole to the residence for sub-divisions. Some new developments are required to have full undergrounding with no above ground poles.

There is not perceived to be an issue in regard to estimated bills due to lack of actual meter reads.

Essential Energy started clearing vegetation around powerlines about five to ten years ago, having neglected this for some years earlier. This caused some issues with local people at the time, but generally those community issues have abated.

Sometimes the results of clearing around powerlines are not elegant: distributors may cut a "V" out of a tree. Essential Energy has done some tree replanting.

Bundaberg (Qld)

Above ground electricity lines are not best practice from a point of view of visual amenity. Council recognises this is not an issue for all users.

There have been no major issues with vegetation management. There is some community dislike of vegetation management for powerlines. Undergrounding would address this, but may not be justified on a cost basis.

Cairns (Qld)

Council would prefer underground cables for reasons of reliability. There are a lot of trees in the area that cause power supply problems with overhead wires, and in addition above ground lines are more vulnerable to cyclones and other major weather events.

For new estates, the electricity supply wires are required to be put underground.

In existing areas with overhead lines where a large development is proposed, Council usually requires the undergrounding of cables along the street frontage once the line exits an above ground pole.

Council was not aware of any adverse comments or negative media coverage about tree clearing around lines.

Maranoa (Qld)

No known issues were identified in relation to vegetation management or damage to properties by distributors.

Mount Isa (Qld)

Dogs in yards sometimes prevent access for electricity meter reading, resulting in the retailers issuing estimated bills. Estimated bills do not generally raise concerns.

Ergon Energy is good with pruning around lines. There are no issues with their work in this regard.

Western Downs (Qld)

Some meters are behind locked gates, so estimated bills can be an issue.

Land access is not a substantial issue as Ergon Energy keeps to its easements and brings in helicopters for certain tasks. There is little impact on the community from their line maintenance.

Whitsunday (Qld)

New residential sub-divisions are supplied by underground lines. Council is interested in more undergrounding – particularly if extreme weather events become more frequent. Undergrounding is advocated more to increase reliability rather than to improve visual amenity.

Overground lines go through forests and state parks. Some residents have expressed concerns about over-enthusiastic clearing by distributors. However, the area is tropical and vegetation regrows quickly, and some outages may be caused because vegetation is not cleared enough.

AgForce (Qld)

There is concern over new lines going through paddocks. With the proposed Copper String line from Townsville to Mount Isa, an easement 120 metres wide is planned, whereas previously it has been 60 metres. Consultation is just starting.

Vegetation management is not an issue for Council.

No issues have been experienced with land access or cattle disturbance. Ergon Energy gives adequate notice prior to entering land, and sends personnel who cause no problems. Ergon Energy has complied with requests to bring wash-down certificates to ensure pests are not brought in.

Country Energy (NSW)

Customers do not appreciate the need for site visit to change meters, read meters, fix supply, etc. They compare it with cable TV and telephone systems where billing and contract changes are handled remotely with no onsite meter requirements.

If it is too wet to read meters, Country Energy offers customers the option of reading meters themselves to avoid estimated bills.

If dogs or other site access issues mean that meters cannot be read, the estimate is based on the previous read. But Country Energy does not know the particular usage circumstances, so the customer may get a wrong estimate: too high or too low. When the bill later comes with an actual read, the customer may have forgotten they used heating or air conditioning perhaps up to six months earlier. Country Energy helps customers pay off their account.

Essential Energy employs arborists for vegetation management. It spends $70 to 80 million per year on managing vegetation under its 195,000 km of lines. It seeks to educate customers, for example not to plant and grow an ornamental tree up through mains lines.

Ninety per cent of new urban lines are underground.

There have been studies of costs of undergrounding: the cost is generally more than people are prepared to pay. It remains to be seen to what extent the Victorian Bushfires Royal Commission's recommendations for undergrounding power lines will be implemented.

Green coloured poles are used in rural areas to reduce issues around visual amenity. Usually, uncovered conductor blends with the surroundings. Poles are more widely placed with longer spans.

Chapter 9: Safety Issues

Electricity and gas pose inherent safety issues and are regulated under State and Territory laws.

In discussions with Councils, very few safety issues were identified.

Clarence (NSW)

One person was fatally electrocuted in back yard through plumber error. There are no other known issues with safety in electricity or gas supply.

Goulburn (NSW)

There has been a fire in a transformer, and an explosion in a low voltage box near the main street in the city. There is no particular issue in the public domain of trucks driving into powerlines or low loads bringing down power lines. There is no significant public issue in electrical safety in the area.

Griffith (NSW)

There are no particular safety issues.

Lismore (NSW)

No safety issues are known.

Shoalhaven (NSW)

Safety is not a significant issue. During windstorms, live lines can sometimes be down for a significant period of time before being isolated because of damage to communications equipment. In some areas, there are few communications towers, meaning less backup in the case of damage to existing towers, and, surviving towers can be overloaded with calls.

Cairns (Qld)

People are aware of power line safety, how to prepare for cyclones, and what to do when a cyclone hits.

Council cyclone packs go out at the start of every wet season. They can be accessed in hard copy from Council, and on the Council website.

Maranoa (Qld)

No safety issues came up in the Council community development plan. Ergon Energy has said it is replacing air-break switches by 2013 in live line work for safety reasons.

Western Downs (Qld)

There are no specific known safety issues with local supply. There was an injury on a major program.

Country Energy (NSW)

Safety is a priority, and customer safety statistics are good. There has been some contact with crop dusters to educate them to work safely without interfering with power lines.

The "Look up and Live" campaign is working through the regions to ensure people are aware of dangers. Essential Energy is also educating people on safe equipment use.

There are few concerns with live wires down. Usually when they are reported, Essential Energy has already cut off supply and made lines safe and simply not yet removed the line. Reports of live lines down are given very high priority for safety reasons.

Chapter 10: Distributed and Bottled LPG Gas Services

We asked Councils about the availability of distributed and bottled gas services in their region. Distributed gas refers to gas distributed through a fixed underground distribution network while bottled gas refers to LPG gas bottles connected directly to a property.

Our major findings are:

- There is some distributed gas in regional areas where the area is traversed by a gas transmission pipeline. There are no major issues with the distributed gas service where a distribution network exists, but it can be difficult to get information on tariffs and how to get connected. There is little incentive for distributors to extend the distributed gas network due to its low profitability.
- Some Councils without access to distributed gas would like to obtain access to distributed gas due to its perceived lower cost compared to bottled gas. However, other Councils considered that their lack of access was a matter of commercial reality given weak demand.
- Where there is no distributed gas network, bottled gas is used extensively. Bottled gas is less convenient than distributed gas and more expensive. The bottled gas service was reported to be good with no significant issues. In some areas, there is competition among providers in the supply of bottled gas.

Clarence (NSW)

There is bottled gas supply, but not distributed gas. There are two companies supplying bottled gas locally – Elgas and one other. The user telephones the bottled gas company, and they come next day to fill the bottle. There are no known issues with the service.

Goulburn (NSW)

Council had a gas business – it was taken over by ActewAGL. There is gas distribution in Goulburn. There is bottled gas for rural areas. Local businesses use gas for heating. There used to be heat banks powered by off-peak electricity. Gas has taken over at the expense of electricity for space and water heating. There is a lot of gas water heating and space heating in new houses. Council spends $20,000 pa on gas.

There are no known problems getting gas connection. Gas connection is though restricted to town customers. Unlike the electricity network that can be extended over long distances (for a cost), there is no such provision for significant extension of the gas network. Connections are only available within very close proximity of the existing network.

The gas supplier is even harder to talk to than Country Energy. There is no local representation. It is very difficult to get information on tariffs or tariff projections, or information for bills. Country Energy has a good website to get information and to download invoices. ActewAGL has nothing like that for gas.

Lismore (NSW)

There is some reticulated gas in the area. Council used to run the gas business. Three customers are on reticulated supply in town: two hospitals and KFC. Everyone else is on bottled gas.

Bottled gas is less convenient than distributed gas, but the supplier generally delivers promptly – three times a week in the area. A customer phones the supplier and leaves a message. Generally there is no problem with this procedure, but sometimes the message gets missed.

There may be some reticulated gas rolled out at Casino in future. There is still at the stage of feasibility study. There is some community backlash on coal seam gas.

Griffith (NSW)

Distributed gas supply exists but is limited. It is at capacity for the largest consumers outside the township – wineries, etc. Some villages do not have distributed gas and rely on bottled gas which is more expensive and less convenient than distributed gas.

Lack of distributed gas supply outside the township is an issue. For example, a meat supplier just purchased new premises and is seeking gas supply.

Shoalhaven (NSW)

The reticulated gas network is relatively small. The industrial sector has substantially switched to gas from electricity, particularly for heating operations. This has saved on cost and also on truck movements as Manildra has stopped road-freighting coal for heating. New users, such as a new jail, have selected gas for cooking and heating. It is not clear, however, that any electricity assets have been stranded as there has been significant growth in energy demand overall.

Bundaberg (Qld)

There is no reticulated gas in the area for residential customers. They have access to bottled gas only. Reticulated gas is only available in the area for industrial users; residential areas are not connected.

Cairns (Qld)

There are one or two retailers of bottled gas in the area.

The bottled gas retailer comes to the house and replaces bottles. Origin Energy is one of the retailers that do that. There is no distributed gas.

Maranoa (Qld)

There is gas distribution infrastructure which is owned and managed by Council. The costs of upgrading or extending the distribution network are very high. As a result, Council cannot fund expansion of the infrastructure at the rate it would like.

The gas distribution infrastructure was installed in ad hoc approach. There is no apparent rationale as to which streets are or are not reticulated.

The gas infrastructure is run as a business, but it is not profitable. Council tried to sell the business 12 months ago. There was no external interest in management of the gas business or in buying it.

There is no known issue with reliability of the gas supply. The issues are more about getting the right connection points and outlets.

Mount Isa (Qld)

Bottled gas is used for cooking and heating. It does not have a high market share and is not well marketed. Residents are slow to change from electric to gas appliance which reduces to rate of take-up of gas.

With many working on shift work, it can be too much bother to organise to change bottles, etc. Many people have dogs in their yard, including for security reasons, and this can prevent the gas company staff from coming into the yard to change cylinders.

There is no infrastructure for a distributed gas network in the area.

Tamworth (NSW)

Natural gas was rolled out in the city of Tamworth five years ago as an alternative to using bottled gas. Outside the city there is no distributed gas. Gas connections in the city are considered to be affordable. Anecdotal recollection was that a charge for one property had been $75 including some piping costs along the road. Another possibility mentioned was a charge of $500.

Country Energy is the only retail supplier of natural gas in the area. They provide a full service from connection to supply as part of their retailer services.

There is extensive usage of bottled gas: it is generally provided next day following a phone call. The supply company brings a truck with a long hose that connects directly with the bottle. Country Energy supplies bottled gas, and there are also some other local suppliers that compete with Country Energy in provision of bottled gas.

One of the barriers to switching to natural gas is the need to switch appliances from bottled gas. It was also thought that the gas distribution infrastructure might only be affordable if a group of neighbours all wanted to be connected at the same time, and that perhaps connection of just one customer in the street might not be economic.

Western Downs (Qld)

Council looks after gas throughout the region. Council commissioned the gas network, and runs it as a business as well as a community service. Distributed gas is reasonably accessible to most households. Gas is very cheap in the region, especially compared to electricity.

Information on the availability of gas can be hard to find. When an interviewee moved to the area, and worked for the Council, she did not know to contact the Council regarding gas supply.

Whitsunday (Qld)

Bottled gas is reasonably prevalent in the area. There is no distributed gas.

AgForce (Qld)

Access to bottled gas is more or less universal.

Country Energy (NSW)

Country Energy sells bottled gas under the ELGAS brand. It bills quarterly on their electricity bill.

Country Energy also retails distributed natural gas.

Country Energy used to run a gas network in Wagga, but sold it to Envestra. Most of Country Energy's retail gas customers were on that Country Energy gas network. Country Energy retained the retail customers when the network business was sold.

There are few complaints about gas supply. Occasionally bottles arrive late.

On the distribution network, the fixed quarterly supply availability charge is an issue. Customers expect not to be charged if they do not use the gas – for example in summer if they use gas only for heating in winter but are charged the fixed supply availability charge in any event.

Reliability and quality of supply are not seen as issues.

Council sometimes ask Country Energy to promote access to the gas distribution network to encourage people and businesses to move to the local region. However, Country Energy has exited the gas networks business.

Chapter 11: Summary

Our research identified issues of concern to rural and regional users, and to some extent a prioritisation of these issues. As our scope did not extend to interviewing urban users, it is difficult for us to determine the extent to which these issues are specific to rural and regional areas, or are also issues in urban areas.

We can identify certain themes from our research, and it may well be the case that these themes are more pressing in rural and regional areas than they are in urban areas.

The discussion below about the views of users is based on the perceptions regarding residential and business users of the Councils that we interviewed.

Cost, competition, and economic impacts of energy availability

Users were generally concerned with the cost of electricity supply, but even more so with the future direction of electricity prices. Although users were uniformly concerned with the level of electricity prices, users in more wealthy areas did not appear to be responding to the higher prices by reducing use. Renters had weak incentives or ability to manage higher prices through home insulation, installation of solar panels, or other measures.

Despite users' concerns about electricity prices, they did not accept lower prices at the cost of lower reliability and quality of supply.

Retail competition is weak to moderate in NSW, with competition being stronger in larger regional towns. Residential users were still not fully aware of the ability to switch from an incumbent retailer. Some held concerns if they switched then they may suffer poorer reliability. In most regional areas of Queensland outside coastal central Queensland, there is no real prospect of retail competition.[16]

Users were strongly interested in energy efficiency measures but generally considered they could be better informed by distributors and retailers about what steps they could undertake to reduce energy use.

One Council considered poor reliability as a constraint on economic development, while another two were concerned that the slow rate of expansion of supply might hinder future energy-intensive projects. Most other Councils considered that in relation to economic development, electricity and gas supply issues were lower order issues, especially compared to provision of water or communications infrastructure services.

Reliability

Reliability is an issue of some concern in rural and regional areas. Reliability in rural and regional areas tends to be weaker than in urban areas because of the lack of interconnection and spare capacity. In line with this, reliability falls as users move further from major regional centres to more

[16] We understand that this is because the Queensland Government imposes a uniform State-wide tariff, which is below the cost of supply across most rural and regional areas in Queensland.

rural locations with reliability generally being acceptable in regional centres and somewhat satisfactory in rural locations.

Users have the impression that local distributors have devoted considerable resources to improving reliability, particularly in more poorly performing areas. The most significant issue for users were the very long times taken to restore power after major events such as bushfires or cyclones. Survey respondents in Queensland suggested that this can be better managed in the short term by better communication with affected parties about the expected time to restore power.

Typically, the issue with reliability for users is the gap between expectation and delivered outcome. Rural and regional users do not generally expect power to be as reliable as in urban areas (with the possible exception of tree-changers who have moved from urban areas with better average reliability). Given this, even at lower levels of reliability rural and regional users may not identify reliability as a priority. Some users, particularly businesses cater to expected reliability by installing back-up power supply systems.

Gas users supplied by gas distribution networks or by LPG gas bottles were satisfied with the reliability of supply.

Quality of supply

Some but not all rural areas have problems with quality of supply. There are some instances of equipment being damaged by poor quality of supply. Some customers use their own power supply equipment to prevent damage to sensitive equipment such as computers.

In general, the remoteness of areas seemed to trigger quality of supply issues, and some areas had known problems. Distributors have been addressing quality of supply issues.

New supply

Users identified new connections and augmentations to the distribution network as a significant issue.

They had various concerns. They considered the lead-time for new large connections was far too long. Anecdotal evidence was supplied of business users having to leave premises unoccupied for a significant period after the completion of construction because of the delay in connection of electricity.

Users were also concerned at the lack of competition in the supply of new connections, and the fact that distributors relied on contractors and had somewhat withdrawn from offering new connection services themselves. Users considered that distributors were sometimes inflexible in the new connection solutions that they offered, essentially offering solutions that involved over-building. Distributor policies for sharing some of these new connection costs with future users that use the same infrastructure were not considered to be adequate.

In the short term, users considered that lead-times could partly be brought down through better communication between distributors and councils or distributors and users.

Users also noted that distributors provided little information on alternatives to new connections (such as standalone diesel or solar supply).

Some users would like connection to the gas distribution network, although they generally realised this tended to be uneconomic unless they were located close to existing supply or were a very large user.

Community relationships with electricity distributors

Community relationships are more important in rural and regional areas than in urban areas. The distributors have largely risen to the challenge. They generally have a good reputation in the community and have established significant ties through sponsorships. The local distribution brands have strength that is not always seen in metropolitan areas.

It was felt that distributors tended to announce developments and other information, and it was perceived that the distributors generally did not proactively seek Council or community input to distribution planning and decision making. Some Councils stated that they would like to have more input and interaction with distributors. With regard to wider community involvement in planning and decision making, the distribution businesses were thought to be doing a reasonable job, and there was perceived to be limited community interest in further involvement.

Environmental matters

Solar panels have had high take-up in some but not all areas. The rate of take-up has fallen as subsidies have been removed and the feed-in tariffs have been reduced or abolished. The process of considering whether to install solar panels has made some consumers more aware of the cost of electricity and other aspects of electricity supply. This is also likely to be true in urban areas.

In rural and regional areas, factors such as transient populations, large rental populations, and older style housing have tended to drive up energy costs while reducing interest in or the take-up of energy saving measures such as solar panels or building insulation.

Councils and some consumers are interested in green products. Most Councils consider themselves as environmentally conscious and see taking an initiative in regard to climate change and support for renewable energy as being part of their leadership role in the community.

Consumers may require more education to buy green products.

Local generation possibilities

Local generation possibilities (other than solar panels) are not being considered in most rural and regional areas. Only four of the twelve Councils we met had any information to contribute regarding local generation opportunities (other than solar panels).

Some Council mentioned specific opportunities that may be unique to rural and regional areas such as local coal seam gas, bio-energy, solar parks, wind farms, and geothermal generation. In rural and remote communities where network connections to the major grid are weaker, local generation was seen by some Councils to help improve local security of supply.

Visual amenity and undergrounding of cables, tree clearing and land access

There has been some historical community concern regarding what was considered to be over-aggressive lopping of trees for vegetation management. Generally, improved communications with the distributor and distributor clarification of requirements has addressed these concerns, and now distributors are generally seen to be doing a good job with vegetation management.

Councils often require developers to underground power lines in new estate developments. Undergrounding of power lines improves visual amenity and may improve reliability in some cases, but is more costly to install and augment. Due to these cost concerns, there is generally no incentive to place power lines underground unless required by Councils, though it was reported that Endeavour Energy would prefer to underground new lines and Ergon Energy sometimes undergrounds power lines in cyclone-prone areas.

In some rural areas of Queensland, there are issues with estimated bills issued by retailers due to lack of access of meter for meter reading. In some cases, customers are required to read their own meters.

We did not hear reports from Councils of any significant issues with land access by distributors disturbing cattle or causing damage to crops.

There have been some issues with the amount of compensation paid for easements and the size of required easements.

Safety issues

In discussions with Councils, very few safety issues were identified. The few issues that were mentioned did not suggest the existence of any systemic problems with safety management.

Distributed and bottled LPG gas services

There is some distributed gas in regional areas that are traversed by a gas transmission pipeline. There are no major issues with the distributed gas service where a distribution network exists, except that it can be difficult to get information on tariffs and how to get connected. There is little incentive for distributors to extend the distributed gas network due to its low profitability in rural and regional areas.

Where there is no distributed gas network, bottled gas is used extensively. Bottled gas is less convenient than distributed gas, and is more expensive. The bottled gas service was reported to be good with no significant issues. In some areas, there is competition among providers in the supply of bottled gas. Some Councils without access to distributed gas would like to obtain access to distributed gas due to its perceived lower cost compared to bottled gas. However, other Councils considered that their lack of access was a matter of commercial reality, given weak demand.

Appendix 1: Briefing material sent to Councils

The Energy Needs of Rural and Regional Customers

Brief to Councils

Information on the purpose of the meeting

The Consumer Advocacy Panel wants to gain a better understanding of rural and regional energy consumer issues, while at the same time promoting the advocacy work that it and community groups undertake on behalf of energy consumers.

To help its understanding, the Panel accepted a proposal from Engineroom Infrastructure Consulting to interview six Councils within rural and regional areas in each of NSW and Queensland (twelve in total). (Other work is going on in other States in which Engineroom and Etrog Consulting are not involved.) The interviews are to obtain information about:

- The types of energy concerns that residential and business customers have within each local council area; and
- A sense of the prioritisation of those concerns.

Councils are being approached as they are seen to be in touch with and have an understanding of the energy issues facing the customers that live in their areas.

Each interview is really driven by the Council being interviewed. The interview may touch on any of a range of energy issues which are seen as important to local residents and businesses. Possible issues might include (without limitation):

- Cost of supply, the extent of competition, and the continuing existence and level of Community Service Obligations (CSOs);
- Reliability, total time off supply, and time to restore power;
- Cost of new connections, rights to new connections, and competition in provision of new dedicated connection assets;
- Quality of supply;
- Access and input to decision-making;
- Local employment in energy supply / depot closure;
- General economic development – requirement for energy at an affordable price;
- Planning, visual amenity, tree clearing, and undergrounding;
- Access to distributed gas or bottle LPG services;
- Emissions trading and climate change policy – costs, uncertainty, environmental benefits, access to income from offsets under a possible Carbon Pollution Reduction Scheme (CPRS) or similar scheme;
- Pre-payment requirements and meters; and
- Local generation possibilities and feed-in tariffs.

Background information on the Consumer Advocacy Panel

The Consumer Advocacy Panel provides funding for electricity and natural gas customer advocacy and research. It seeks to promote the interests of all consumers of electricity and natural gas – with a particular focus on small to medium consumers.

In 2008/09 the Panel's total revenue was $2,455,778. In 2008-09, the Panel received 55 applications for funding, of which 44 were approved (see figure 1). The approved grant recipients reflected a diverse range of entities.

Figure 1: Grants made by project type 2008-09

Grant Type	Grants Made	Funding Allocated
Advocacy projects		
• Electricity	17	$1,050,463
• Gas	9	$194,830
• Both	14	$1,128,526
Panel-initiated research	2	$50,000
Stakeholder-initiated research	2	$96,400
TOTAL	44	$2,520,219

Note: Includes some grants to commence after 2008-09.

The Panel provides funding to groups to build capacity to advocate on behalf of electricity and gas users which would otherwise not participate in energy policy and regulatory decisions.

Information on community groups involved in advocacy on energy issues

Several community groups are involved in advocacy on energy issues in Queensland and NSW.

In Queensland, the Queensland Council of Social Services (QCOSS) has been funded by the State Government in a multi-year project to advocate on behalf of energy consumers. Details of their work can be seen at www.qcoss.org.au/Article.aspx?type=policy&id=4941.

In NSW, the Public Interest Advocacy Centre conducts the "Energy + Water campaign" for the interests of residential users of electricity, gas and water utilities. For details of their work, see www.piac.asn.au/campaigns/energyandwater.

Notes on following Appendices

All the maps and other background information in the following Appendices were sourced from individual Councils and websites as shown, some of which led to http://profile.id.com.au.

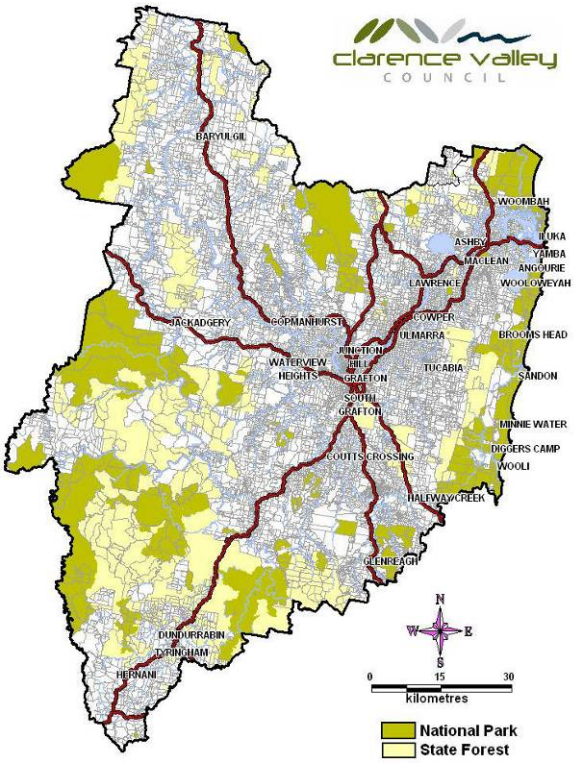
Some of the information on Queensland is from the Queensland Office of Economic and Statistical Research at http://statistics.oesr.qld.gov.au/qld-regional-profiles

Appendix 2: New South Wales Council Areas

Source: Wikipedia, http://en.wikipedia.org/wiki/File:New_South_Wales_Local_Government_Areas.svg

Clarence Valley Council, NSW

www.clarence.nsw.gov.au



The Governor of New South Wales proclaimed Clarence Valley Council (CVC) on 25 February 2004. This proclamation co-joined the former general purpose Council's of Copmanhurst, Grafton, Maclean and Pristine Waters and activities of North Coast Water and Clarence River County Council.

The Clarence Valley Council area is predominantly rural, with expanding residential areas and some industrial and commercial land uses. The Council comprises an area of 10,440 km^2, employs about 500 staff, operates 5 administration centres, 10 works depots and serves 52,054 residents and ratepayers living in 44 towns, villages and city environs.

CVC now represents an estimated 50% of the landmass of the northern rivers region. Council has a rate base of approximately 26,000 properties with a significant proportion of lands being non-rateable reserves and protected parks.

The Council area extends from the temperate New England Plateau to the rugged mountain scenery of the Gibraltar Ranges, through fertile rural lands and river plains to the spectacular Clarence Coast.

The climate is largely warm ranging from subtropical on the coast to temperate on the tablelands, with an annual rainfall of up to 1500mm in some centres. The Clarence Council area encompasses a diverse set of environmental features, cultures, traditions, communities and industries. This diversity represents a significant opportunity now and in the future for Council, the community and commercial enterprise.

The Clarence Valley is part of the vibrant Northern Rivers region of NSW. The Northern Rivers has become Australia's premier lifestyle region. The region's appeal and success is a result of its natural beauty, relaxed country charm, service delivery and business innovation. For the last 15 years the Northern Rivers region has recorded the fastest economic growth in the state.

Clarence Valley Council is approximately 300km from Brisbane and the growth centres of south-east Queensland and some 600km north of Sydney. Improvements to road networks, particularly to the north continue to offer positive economic benefit for local business and industry.

The Local Economy

The core of the micro economy is comprised of traditional industries which include:

- ***Sugar cane*** production: (45% of the northern rivers region sugar production is grown and harvested locally). There are more than 250 sugar cane farms in the area. This industry supports approximately 990 jobs and makes a contribution of $103 million to the local economy each year.
- ***Commercial fishing***: (a combination of wild caught ocean product and estuary. The Clarence is home to the second largest commercial fishery in NSW). The commercial fishing industry supports 370 jobs and generates an estimated $27 million each year.
- ***Beef cattle***, dairying and general farming
- ***Tourism*** (a growth industry with opportunity for future expansion. Yamba has developed as a tourism hot spot for the Northern Rivers region). The tourism sector supports more than 400 jobs and injects in excess of $190 million into the local economy.
- ***Timber production*** is a significant contributor to the regional economy.

There is a new economy developing in specialist areas which include: tourism support services, engineering, food processing, aquaculture, boat building, regional cuisine and education.

Retail development is a very significant economic contributor and is likely to be a sector that experiences considerable future growth. As at the 2001 census about 17% of the total Clarence workforce, were employed in retail activity. Grafton and Yamba are the areas most developed retail precincts. Many centres have experienced a rapid increase in demand for trade related skills, products and services to support the unprecedented growth in new build housing.

Transport

Four regional airports located at Grafton, Ballina, Lismore and Coffs Harbour service the Council area. Multiple daily services connect the Clarence Valley with Sydney and other destinations. The Port of Yamba is Australia's eastern most sea-port and is located at the mouth of the Clarence River. The Port serves the Northern Rivers region and beyond including: Grafton, Maclean, Ballina, Lismore, Casino, Coffs Harbour, Glen Innes, Armidale and Dorrigo.

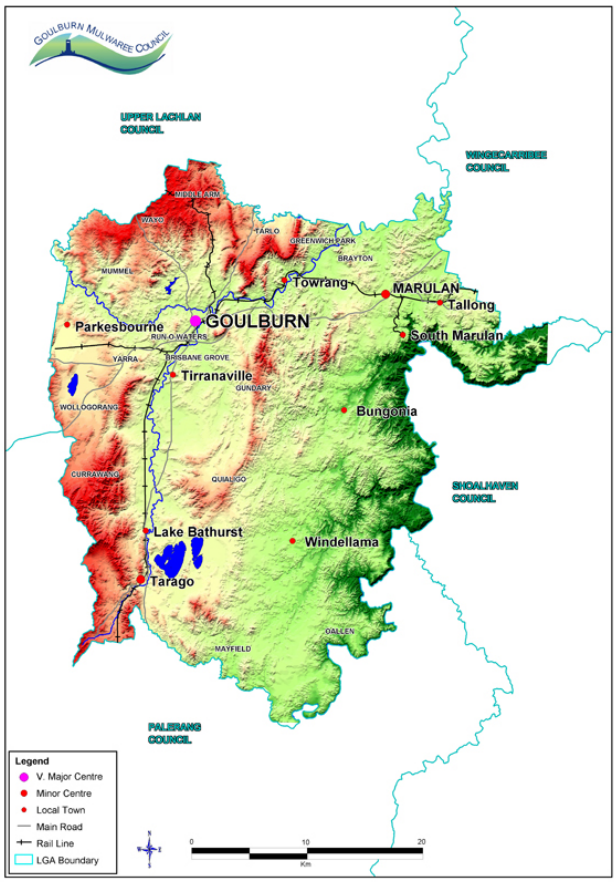
The Port of Yamba has Customs and Quarantine classification and has unrestricted port of first entry for overseas imports status.

The Pacific Highway is the key road transport network linking our community to that of south-east Queensland in the north and important distribution centres in the south. The Summerland Way is an inland drive alternative for visitors seeking country vistas and a more relaxed pace of life.

The area is also serviced by rail passenger operations. Services run between Sydney and Brisbane as part of the Country Link rail and coach network. Daily rail services arrive / depart Grafton with coach transfers to surrounding areas.

Goulburn Mulwaree Council, NSW

www.goulburn.nsw.gov.au



The Goulburn Mulwaree Council area is located in central New South Wales, about 200 kilometres south-west of Sydney and 95 kilometres north-east of Canberra. The Goulburn Mulwaree Council area is bounded by Upper Lachlan Shire in the north and west, Wingecarribee Shire and Shoalhaven City in the east, and the Palerang Council area in the south. The Council area's boundaries are Oxley Creek, and the Tarlo and Wollondilly Rivers in the north, Uringalla Creek and the Shoalhaven River in the east, and Boro Creek in the south.

The Goulburn Mulwaree Council area is predominantly rural, with a city in Goulburn and small villages at Bungonia, Lake Bathurst, Marulan, Tallong and Tarago. The Council area encompasses a total land of over 3,200 square kilometres. Land is used largely for agriculture, particularly sheep grazing, with some cattle grazing and boutique industries.

Key Statistics

Size: 3232 square kilometres

Population (2006): 27,277 (City of Goulburn 21,060, Rural area 6217)

Median Age (2001): 39 years

Employment: Top 5 Industries (by employment size-no. of people):

- Public Administration and Safety: 764
- Manufacturing: 717
- Construction: 666
- Transport, Postal and Warehousing: 650
- Retail Trade: 597

Community Strengths

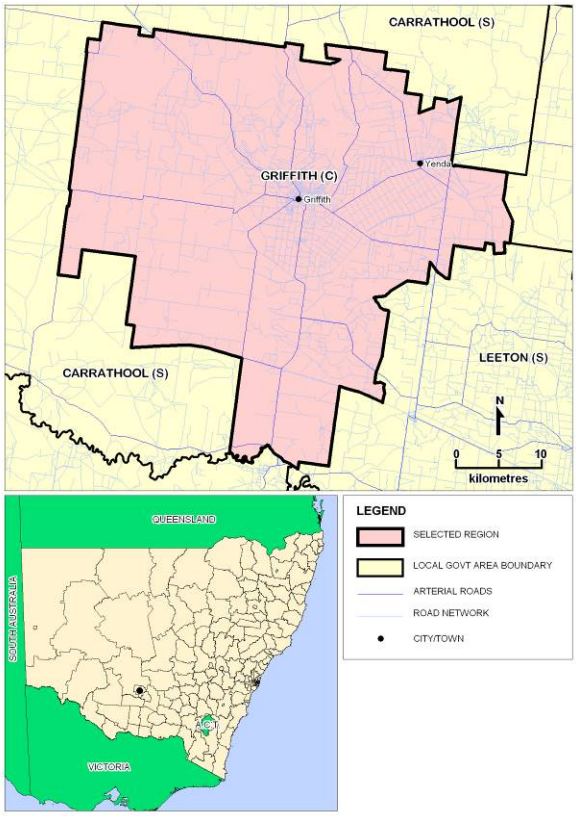
- Strategic Location
- Excellent transport Links
- A stable Workforce
- Available and affordable Land
- A supportive planning regime
- Heritage

Accessibility

- ***Air***: Goulburn Regional Airport 8km, Canberra Airport 90 km or 1 hour by road.
- ***Rail***: Located on the main southern Railway line. Regular Services Sydney-Canberra and Sydney / Melbourne. Sydney is 2 hrs 30 mins travel time.
- ***Road***: Located on Hume Highway 192 km south of Sydney (2hrs) and 95 km north of Canberra (1hr.)
- ***Sea***: Port Kembla (Wollongong) 140 km (1 hr and 30 min), Port Botany (Sydney) 190 km

Griffith City Council, NSW

www.griffith.nsw.gov.au



Griffith City is located in the Riverina Region of south-western New South Wales, about 450 kilometres north of Melbourne, and 570 kilometres west of Sydney. Griffith City is bounded by Carrathool Shire in the north, west and south-west, Narrandera Shire and Leeton Shire in the east, and Murrumbidgee Shire in the south.

Griffith City includes the townships and localities of Beelbangera, Benerembah (part), Bilbul, Griffith, Hanwood, Kooba, Lake Wyangan, Myall Park (part), Nericon, Tabbita (part), Tharbogang, Warburn, Warrawidgee (part), Whitton (part), Widgelli, Willbriggie (part), Yenda (part) and Yoogali.

Griffith City is a predominantly rural area, with rural-residential and residential areas in several townships and villages. Most of the population lives in the main urban area of Griffith, and the smaller villages of Beelbangera, Bilbul, Hanwood, Lake Wyangan, Nericon, Tharbogang, Widgelli, Yenda and Yoogali. The City encompasses a total land area of about 1,600 square kilometres. Rural land is used largely for agriculture, horticulture and viticulture, particularly rice, citrus fruit, canola, vegetable and grape growing, with some sheep and cattle grazing.

The original inhabitants of the Griffith area were the Wiradjuri Aboriginal people. European settlement dates from the 1820s, with land near the rivers used mainly for sheep grazing. Land became used for agriculture from the 1860s. Population was minimal until the early 1900s. Growth took place from 1912, due largely to the opening of the railway line and the establishment of the

Murrumbidgee Irrigation Area, which supplied water from the Murrumbidgee River for farming. The township of Griffith was established in 1916, with residential and industrial growth particularly during the 1920s. Expansion continued during the post-war years. Gradual growth took place during the 1980s and 1990s, with the population of the City increasing from about 20,000 in 1981 to nearly 24,000 in 2001. The population was then relatively stable between 2001 and 2006.

The Local Economy

The City of Griffith is a thriving agricultural and manufacturing hub in the Riverina Region of NSW. Griffith is a large exporter, exporting 27% of the state's gross export.

- Produces 75% of NSW wine grapes (which translates to exports well in-excess of $800 million dollars per year);
- Grows 90% of NSW citrus;
- Has a vegetable produce farm gate value of $89 million;
- Grows 90% of Australia's rice;
- Largest chicken meat producer in Australia; and
- Largest prune growing area in Australia.

Key Statistics

Size: 1600 square kilometres

Population (2006): 25,879

Median Age (2001): 35-49

Employment: Top 5 Industries (by employment size-no. of people):

- Manufacturing
- Retail Trade
- Agriculture
- Healthcare and Social Assistance
- Construction

Community Strengths

- Central location for goods distribution
- Good access to markets
- Regional centre for medical services

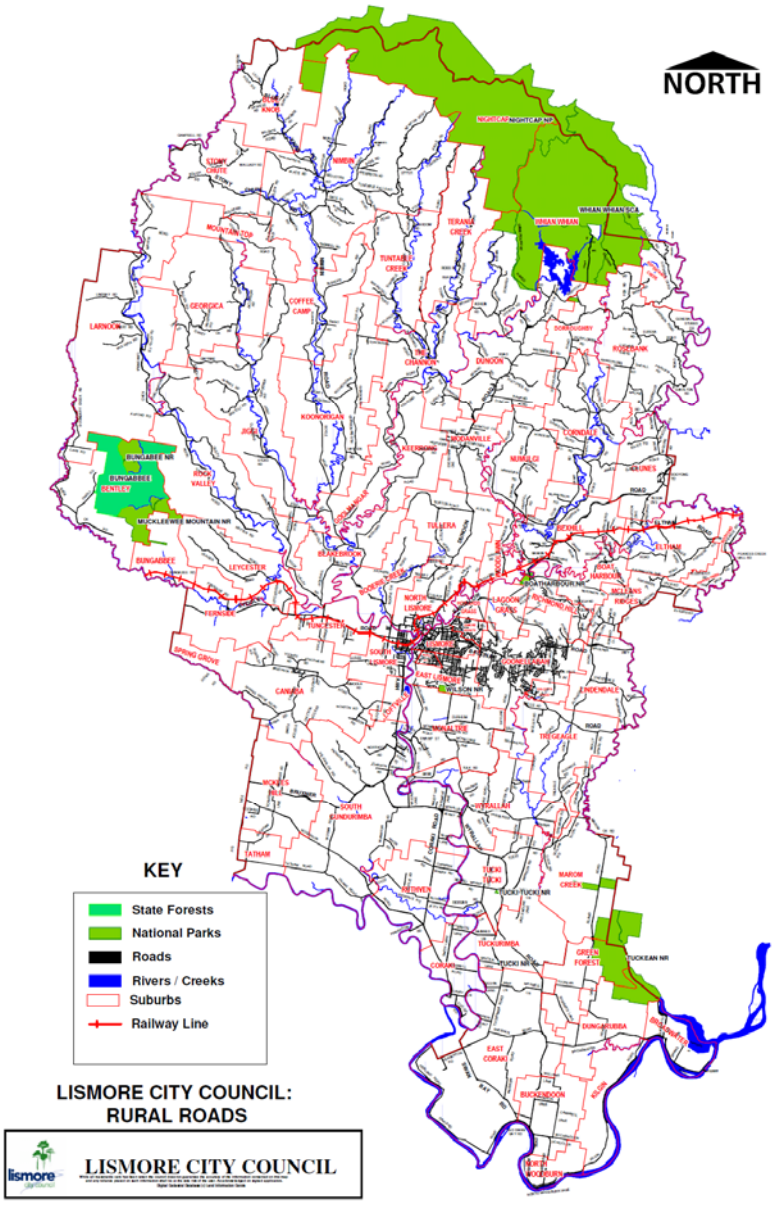
- Retail hub
- Access to higher education through TAFE and University pathways
- Multicultural Community
- Cultural & Art hub

Accessibility

- ***Air***: Griffith City Airport, Narrandera Airport, serviced by REX flights to Sydney and Melbourne.
- ***Rail***: One Sydney passenger service per week, daily freight service to Sydney or Melbourne.
- ***Road***: 450 km north of Melbourne, 570 km west of Sydney.

Lismore City Council, NSW

www.lismore.nsw.gov.au



Lismore is a mixed urban and rural community at the heart of the Northern Rivers. The city is situated on the Wilson River and covers an area of 1,290 square kilometres. As at the 2006 census, the Lismore population was 44,225.

Befitting a regional centre of its size, Lismore has excellent medical, professional and educational facilities. It is also a major centre for the arts, sport and cultural activities, as well as offering a high standard and wide variety of shopping and leisure opportunities. As the home of Southern Cross University's main campus, Lismore attracts residents and students from across Australia and overseas.

Population

The Lismore population at the 2006 census was 44,225. The population increased by 1.89% between the 2001 and 2006 censuses. 61.2% of the population live in the urban area, 34.6% in rural areas and 4.2% in surrounding villages.

Lismore's population is expected to continue to grow over the next 10 years. Future growth is likely to occur as a result of the widening of the coastal fringe and Lismore continuing to attract those seeking a rural lifestyle. Lismore is the regional employment centre of the Northern Rivers and some of the population growth is expected to come from people moving to the area for employment and business opportunities.

Age Structure

A higher proportion of people aged 15-29 live in Lismore than elsewhere on the North Coast. This can be attributed to the presence of key educational institutions, including Southern Cross University. People aged over 65 comprise 14% of the population. The greatest percentage increase in the population over the past 10 years has been among those aged 45 years and above.

Housing

84% of dwellings in Lismore are single detached dwellings. The average household size is 2.5 persons and has been declining over the past 10 years. Single-person households represent 25% of all households. This number has increased over the past 10 years and is predicted to continue to rise.

Employment

Employment opportunities within Lismore are wide and varied, with the top three employers being health care and social welfare, retail, and education and training. Lismore has a strong primary industry, construction and manufacturing sector, with 8.4% of the population employed in these industries.

Shoalhaven City Council, NSW

www.shoalhaven.nsw.gov.au

Shoalhaven City is located on the south coast of New South Wales, about 160 kilometres south of Sydney. Shoalhaven City is bounded by the Wingecarribee Shire and the Municipality of Kiama in the north, the Tasman Sea and Jervis Bay Territory in the east, the Eurobodalla Shire in the south and the Palerang and Goulburn Mulwaree Council areas in the west.

Shoalhaven City is a regional and growing residential and tourist area, it is the most visited LGA in NSW outside of Sydney. The City encompasses a total land area of about 4,561 square kilometres, including substantial areas of national park, state forest, bushland, beaches and lakes. Most of the population is concentrated along the coastal fringe, in major centres and numerous small settlements. The major centres are Nowra-Bomaderry, Milton-Ulladulla, Huskisson-Vincentia, St Georges Basin District, Culburra Beach and Sussex Inlet. Rural land is used mainly for dairy farming, beef cattle, nurseries, and a growing number of more intensive agricultural activities. The area has a strong light manufacturing industrial base including goods such as paper, starches, ethanol, cheese, boats, avionics, building products, surfboard, and surf-wear. The main sectors of employment within the Shoalhaven are Manufacturing, Government (including Defence), Retail and Tourism. These sectors are supported by Building and Construction, Community Services and Education.

Tamworth Regional Council, NSW

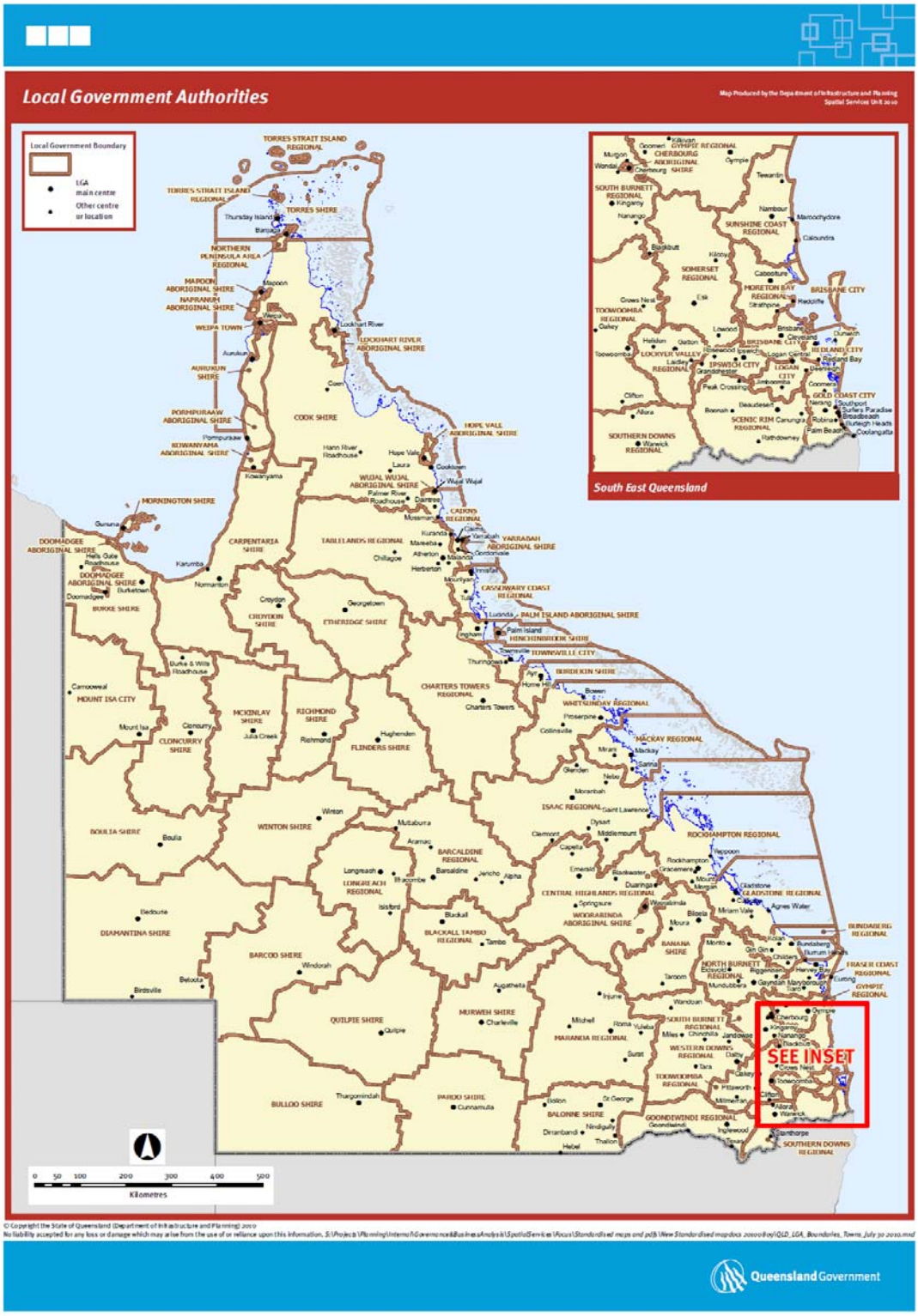
www.tamworth.nsw.gov.au

The Tamworth Regional Council area is located in the New England Region of New South Wales, about 410 kilometres north-west of Sydney. The Tamworth Regional Council area is bounded by Gwydir Shire in the north, Uralla Shire and the Walcha Council area in the east, Upper Hunter Shire in the south, and Liverpool Plains, Gunnedah and Narrabri Shires in the west.

The Tamworth Regional Council area includes the urban centre of Tamworth and the surrounding predominantly rural area. The Council area encompasses a total land area of over 9,600 square kilometres. Most of the rural area is used for sheep and cattle grazing, lucerne and wheat growing, and poultry farming. The majority of the population live in the urban centre of Tamworth. About one quarter of the population lives in the small townships of Barraba, Kootingal, Manilla and Nundle, the villages of Attunga, Bendemeer, Dungowan, Duri, Moonbi, Somerton, Woolbrook and Woolomin, and various rural localities. Tamworth has developed as a regional centre for north-western New South Wales and is well known for its annual Country Music Festival.

The original inhabitants of the Tamworth area were the Kamilaroi Aboriginal people. European settlement of the area dates from 1830 when squatters began to settle along the Peel River. In 1834 the Australian Agricultural Company was granted over 300,000 acres on the western side of the Peel River in Tamworth. Land was used mainly for sheep and cattle grazing and wheat farming. Growth was minimal until the 1850s and 1860s, spurred by the discovery of gold at Hanging Rock and Nundle, and the opening up of land. The population remained relatively stable during the 1990s, at nearly 52,000. Between 2001 and 2006 the population increased slightly to 53,600.

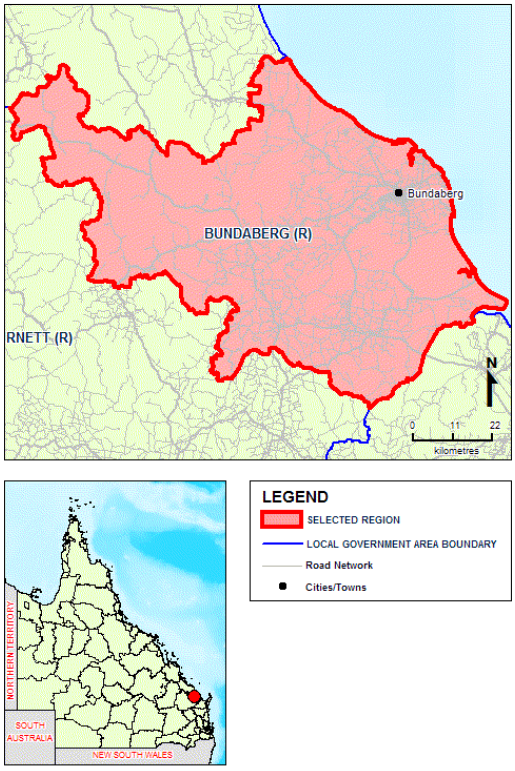
Appendix 3: Queensland Council Areas



Source: Queensland Department of Infrastructure and Local Planning, www.dlgp.qld.gov.au/resources/map/local_government_area_boundaries.pdf

Bundaberg Regional Council, Qld

www.bundaberg.qld.gov.au

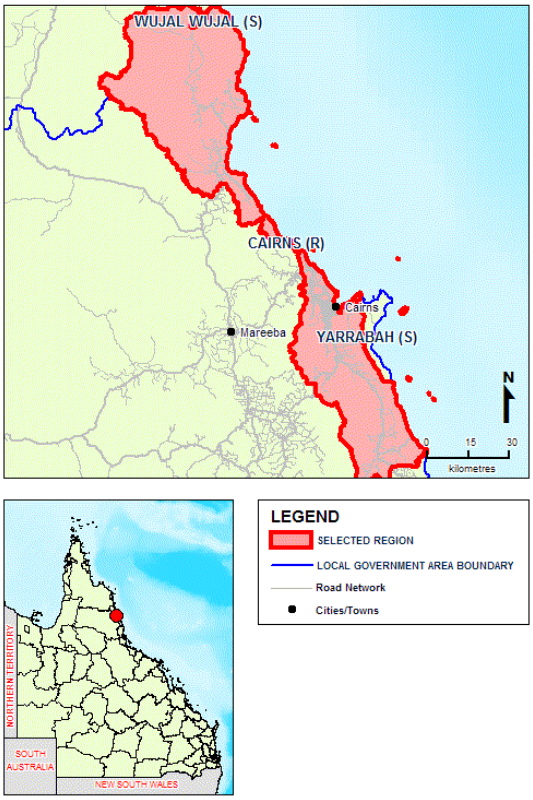


The local government area of Bundaberg Regional Council has a total area of 6,449.1 km^2, or 0.4 per cent of the total area of the state. As at 30 June 2010, the estimated resident population of Bundaberg Regional Council was 96,936 persons, or 2.1 per cent of the state's population. Bundaberg Regional Council's population in 2031 is projected to be 139,350 persons.

The Bundaberg region is located in the heart of a rich sugar and horticultural belt supported by a growing manufacturing sector. Bundaberg produces one fifth of Queensland's sugar crop and the city is surrounded by a green sea of rich sugar cane and many farms growing Australia's finest small crops. The city plays a significant role in global manufacture and industry, being home of 'the famous Aussie Spirit', Bundaberg Rum, leading drinks manufacturer Bundaberg Brewed Drinks, diversified agricultural corporation Bundaberg Sugar, and many others of international recognition.

Cairns Regional Council, Qld

www.cairns.qld.gov.au



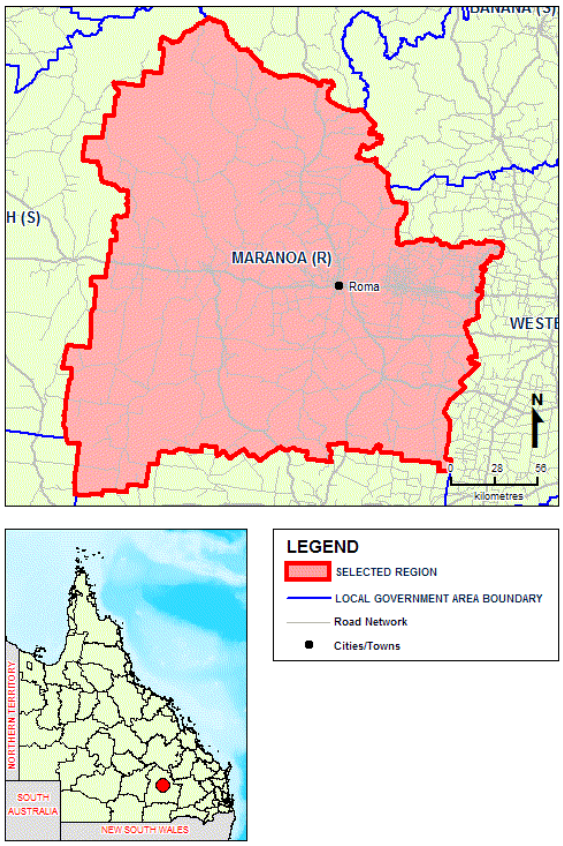
The Cairns Region is located in Far North Queensland, about 1,700 kilometres north of Brisbane, and 350 kilometres north of Townsville. The Cairns Region is bounded by the Cook Shire and the Wujal Wujal Aboriginal Shire in the north, the Coral Sea and the Yarrabah Aboriginal Shire in the east, the Cassowary Coast Region in the south, and the Tablelands Region in the west.

The Cairns Region includes significant areas of national park and state forest, rural areas and growing urban areas. The Region encompasses a total land area of over 4,100 square kilometres. The main urban centre is Cairns, with smaller urban areas in Babinda, Cooya Beach, Gordonvale, Mossman, Newell, Port Douglas and Wonga. Urban areas include residential, commercial, industrial, institutional, entertainment and tourist land uses. Rural land is used predominantly for sugar cane farming.

The local government area of Cairns Regional Council has a total area of 4,129.1 km^2, or 0.2 per cent of the total area of the state. As at 30 June 2010, the estimated resident population of Cairns Regional Council was 168,251 persons, or 3.7 per cent of the state's population. Cairns Regional Council's population in 2031 is projected to be 241,494 persons.

Maranoa Regional Council, Qld

www.maranoa.qld.gov.au



The Maranoa region is a dynamic and vibrant regional community situated approximately 480 kilometres west of Brisbane, in the South West of Queensland. From a proud history built around agriculture and mining, the region continues to grow and prosper today. The Maranoa region's abundant natural resource assets and diversified stable industry base has resulted in continued growth and development enabling the region to meet local and global economic challenges. With the coal seam gas extraction industry anticipating sustained growth for the next thirty to forty years, the Maranoa region's future is extremely positive.

The Maranoa region has a long established grazing industry and is the location of Australia's largest cattle selling complex. The facility achieved a record sale of 409 000 head of cattle in 2088, with a total value of over $237 million, and it is anticipated that new records will be reached with the expansion of an additional 60 yarding pens.

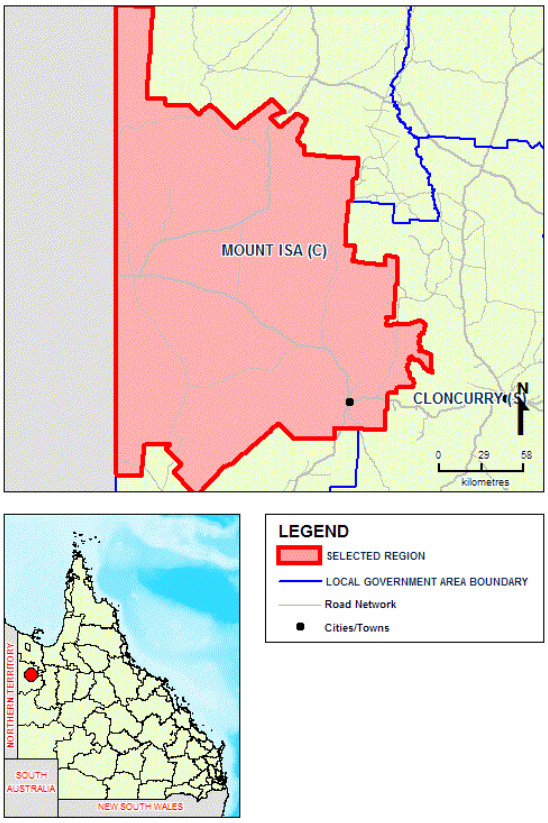
The region also has a sheep flock of approximately 150 000 for wool and fat lamb production. In addition to the grazing industry, grain and cereal cropping is also prominent in the region.

Currently, the Maranoa region is the scene of massive expansion in coal seam gas exploration and mining. Thousands of coal seam gas wells are to be drilled in the region over the next twenty years. Several major energy companies operate in the region.

The local government area of Maranoa Regional Council has a total area of 58,817.1 km^2, or 3.4 per cent of the total area of the state. As at 30 June 2010, the estimated resident population of Maranoa Regional Council was 13,369 persons, or 0.3 per cent of the state's population. Maranoa Regional Council's population in 2031 is projected to be 17,172 persons.

Mount Isa City Council, Qld

www.mountisa.qld.gov.au



The City of Mount Isa is located 1829 kilometres from Brisbane, the Queensland State Capital, and 883 kilometres from Townsville (the nearest major city).

Mount Isa City covers an area of over 43,310 square kilometres, making it geographically the second largest city in Australia to Kalgoorlie-Boulder, WA. With a population of approximately 23,500, Mount Isa is a major service centre for North West Queensland, and a thriving city, equipped to satisfy residential, business and industrial needs.

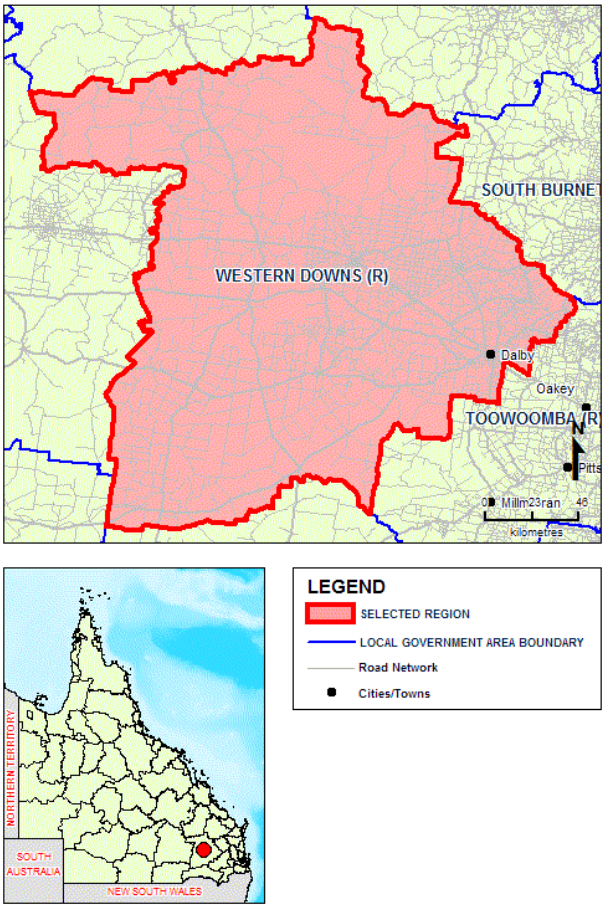
Located within the Mount Isa City boundary is the town of Camooweal – "The Western Gateway to Queensland". Camooweal is approximately 200 kilometres to the west of Mount Isa.

The Mount Isa Mine (owned by Swiss mining giant, Xstrata) is one of Australia's largest producers of copper ore.

Mount Isa has an average of 9.5 hours of sunshine a day, and only 50 wet days per year. There are two distinct seasons – the wet season from November to March and the dry season centred on June, July and August. Summer months are hot, with average minimums in the low 20s (degrees Celsius) and maximums in the high 30s. Most houses and businesses are air-conditioned. Winter is much more pleasant, with average daytime temperatures in the mid-20s and nights averaging a very comfortable 12 degrees. The lowest temperature ever recorded in Mount Isa was –2.9 degrees.

Western Downs Regional Council, Qld

www.wdrc.qld.gov.au



The local government area of Western Downs Regional Council has a total area of 38,004.7 km^2, or 2.2 per cent of the total area of the state. As at 30 June 2010, the estimated resident population of Western Downs Regional Council was 32,071 persons, or 0.7 per cent of the state's population. Western Downs Regional Council's population in 2031 is projected to be 40,397 persons.

The Western Downs Regional Council area is a hive of activity and growth through continued agriculture, manufacturing and resource diversification. In recent years, the Western Downs region has experienced an increase in population, reversing the trend of rural decline. Businesses in the region have begun to diversify from traditional markets in the agricultural sector into components, parts and services for the energy sector. Agriculture, forestry and fishing dominate the economy, representing 22.6% of the region's $1.3 billion gross domestic product (2006/07).

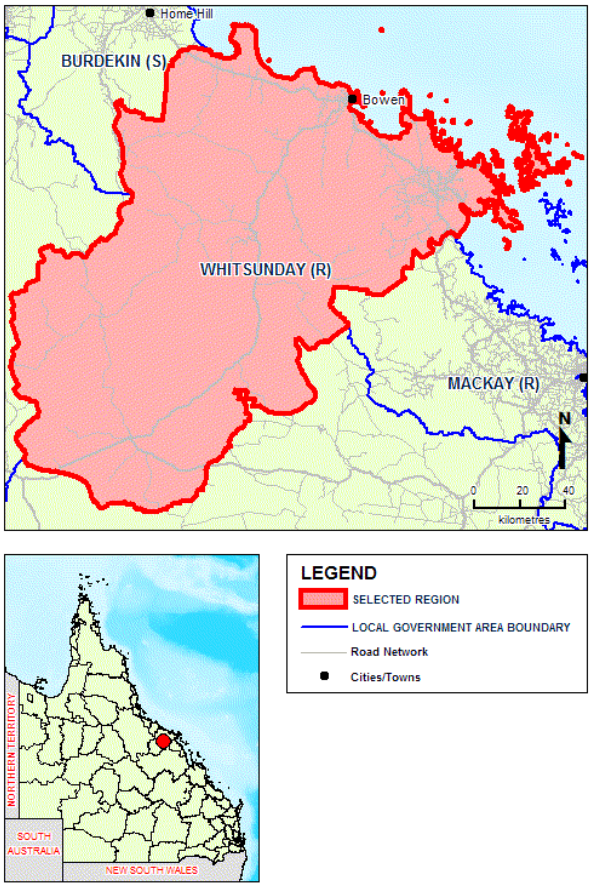
Strong growth and development is evident across the region in electricity, gas and water supply, up 30.3% to $41.7 million while professional services, transport and manufacturing also experienced greater than 15% annual growth. Almost 10% of Queensland's manufacturing gross domestic product is produced within the Western Downs region.

The energy resources sector, which comprises coal, coal seam gas, coal seam gas water, ethanol and power station development, has the potential to more than triple the gross regional product.

Within this growing economy, increased pressures on the labour market are reflected in low unemployment figures. The Western Downs region's unemployment rate for the June Quarter 2008 was 3.1%, well below Queensland (3.7%) and Australia (4.2%) averages. Employed persons make up over half (53.8%) of the population, increasing in line with projected population growth of 0.8% average annual change.

Whitsunday Regional Council, Qld

www.whitsundayrc.qld.gov.au



The Whitsunday Region is located in north Queensland, about 1,100 kilometres north of Brisbane and 600 kilometres south of Cairns. The Whitsunday Region is bounded by Burdekin Shire in the north, the Coral Sea in the east, the Mackay Region and the Isaac Region in the south, and the Charters Towers Region in the west.

The Whitsunday Region is a growing residential and tourist area, with substantial rural, rural residential, conservation and parkland areas, and pockets of commercial and industrial land use. The Region encompasses a total land area of nearly 24,000 square kilometres, including islands, coastal areas, inland areas, national parks, bushland, beaches and waterways. The Region includes the rural town of Proserpine, the mining town of Collinsville, the coastal towns of Airlie Beach, Bowen, Cannonvale and Shute Harbour, and resorts on several of the islands. The major industries are tourism, sugar cane growing, horticulture, grazing and fishing, with some mining.

The local government area of Whitsunday Regional Council has a total area of 23,871.2 km^2, or 1.4 per cent of the total area of the state. As at 30 June 2010, the estimated resident population of Whitsunday Regional Council was 34,765 persons, or 0.8 per cent of the state's population. Whitsunday Regional Council's population in 2031 is projected to be 55,451 persons.

The original inhabitants of the Whitsunday area were the Ngaro and Girundala Aboriginal people. European settlement dates from the 1860s, with land used mainly for timber getting, grazing and sugar cane growing. Gradual growth took place in the late 1800s. More substantial expansion occurred during the 1920s and 1930s, spurred by tourism, particularly on the islands and mainland areas closest to the islands. The most significant development took place from the 1970s, with rapid growth during the 1980s, aided by several islands becoming major tourist destinations. The population of the Region continued to increase from the 1990s, rising from about 30,000 in 1991 to nearly 36,000 in 2006.

Appendix 4: Electricity Distribution Areas

Essential Energy

www.essentialenergy.com.au

Five of the six Councils in New South Wales with which we met are located in the Essential Energy area

Essential Energy is a NSW Government-owned corporation, with responsibility for building, operating and maintaining Australia's largest electricity network – delivering essential network services to more than 800,000 homes and businesses across 95 per cent of NSW, parts of southern Queensland and northern Victoria.

Essential Energy's Operating Area

Endeavour Energy

www.endeavourenergy.com.au

One of the councils that we met in New South Wales (Shoalhaven City Council) is located in the Endeavour Energy area. A small part of the Goulburn Mulwaree Council area also falls within the Endeavour Energy area.

Endeavour Energy is responsible for the safe and reliable supply of electricity to 2.1 million people in households and businesses across Sydney's Greater West, Blue Mountains, Southern Highlands and the Illawarra.

With an estimated value of $3.3 billion, this network spans 24,500 square kilometres and is made up of over 170 major substations, 315,000 power poles and 28,000 smaller substations bound together by 33,000 kilometres of underground and overground cables.

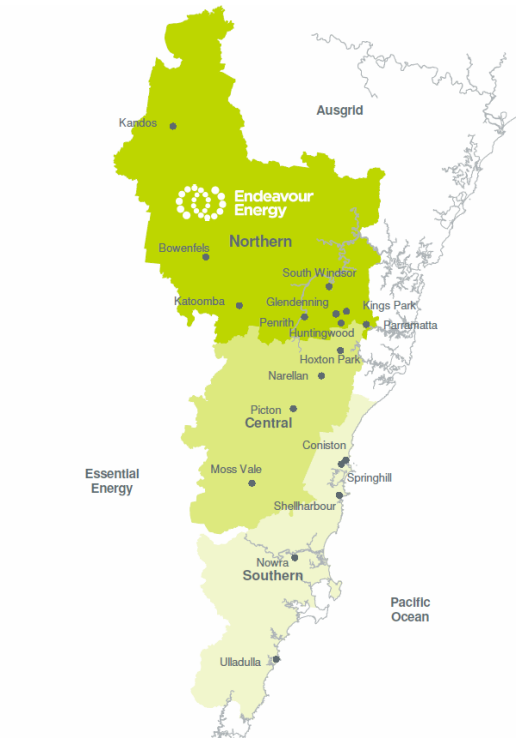
The Endeavour Energy network area

Our network area covers some of the fastest growing regions of Australia, including Sydney's Greater West, the Southern Highlands and the Illawarra.

Here are the Local Government Areas (LGAs) that are within our franchise area:

Bankstown *	Bathurst Regional *	Blacktown
Blue Mountains	Camden	Campbelltown
Fairfield	Goulburn Mulwaree *	Hawkesbury
Holroyd	Hornsby *	Kiama
Lithgow	Liverpool	Mid-Western Regional
Oberon	Parramatta	Penrith
Ryde	Shellharbour	Shoalhaven
The Hills Shire	Upper Lachlan Shire	Wingecarribee
Wollondilly	Wollongong	

* Majority of the LGA falls outside our franchise area



Ergon Energy

www.ergonenergy.com.au

All six Councils in Queensland with which we met are located in the Ergon Energy area.

Ergon Energy, as a Queensland Government Owned Corporation, operates as an electricity distributor, retailer and generator and services around 680,000 customers across its vast operating area of over one million square kilometres – 97% of the state of Queensland – from the expanding coastal and rural population centres to the remote communities of outback Queensland and the Torres Strait.

Ergon Energy has around 4,600 employees and a total asset base of $8.7 billion

Ergon Energy's electricity network consists of approximately 150,000 kilometres of powerlines and one million power poles, along with associated infrastructure such as major substations and power transformers. Ergon Energy also owns and operates 33 stand-alone power stations that provide supply to isolated communities across Queensland which are not connected to the main electricity grid. Since August 2007, Ergon Energy has owned and operated the Barcaldine gas-fired power station along with its associated infrastructure. The power station supplies power to the main grid.

Ergon Energy was formed in 1999, by the State Government, from the then six regional Queensland electricity distributors and their subsidiary retailer. Today the principal operating companies are Ergon Energy Corporation Limited, as the electricity distributor, and its subsidiary Ergon Energy Queensland Pty Ltd, a 'non-competing' electricity retailer.

As a government-owned 'non-competing' electricity retailer, Ergon Energy is unique in that it is only permitted to offer its customers the government set electricity tariffs (or notified prices) that apply to all non-market domestic, rural and business customers throughout Queensland.

Ergon Energy Service Region