Minimum Service Standards End of Year Projection Report

October - December 2010

Submitted to QCA by
Ergon Energy Corporation Limited

everything in our power

ERGON. ENERGY

Introduction

The Queensland Competition Authority's Warning Notice of 16 November 2010 requires Ergon Energy to provide the following additional information in addition to the quarterly service quality reporting that is provided accordance with clause 2.6.2 of the Electricity Industry Code:

(i) Year-to-date and forecast (seasonally adjusted) 2010-11 financial year estimates for each of the measures provided in Schedule 1 of the Electricity Industry Code;
(ii) A detailed explanation for any actual or estimated shortfalls against its 2010-11 MSS for each of the measures provided in Schedule 1 of the Electricity Industry Code;
(iii) The measures or actions that Ergon Energy has implemented (including expenditure levels) in the preceding quarter in order to ensure that it meets its 2010-11 MSS;
(iv) The measures or actions that Ergon Energy proposes to implement (including relevant expenditure) in the following quarter in order to ensure that it meets its 2010-11 MSS; and
(v) With the exception of the first quarter's reporting, a detailed explanation for any measures or actions (and/or expenditure) proposed under (iv) that Ergon Energy did not implement in the relevant quarter.

Ergon Energy submits this report which addresses these additional reporting requirements. Specifically:

- Reporting requirement (i) is addressed in Figure 1 on page 5 and for each feeder category in detail in sections 4 through to 9 of this report;
- Reporting requirement (ii) is addressed in sections 4 through to 9 of this report where appropriate;
- Reporting requirement (iii) is addressed in sections 2 and 3 of this report;
- Reporting requirement (iv) is also addressed in sections 2 and 3 of this report; and
- Reporting requirement (v) is addressed in sections 4 of this report.

1. Executive Summary

The October to December 2010 Quarter saw more records broken with the wettest spring since records commenced in 1900 - with near triple the average rainfall, and the wettest December on record - with state wide averaged rainfall more than double the long term 1961 to 1990 baseline mean. Much of this rainfall was the result of severe thunderstorm and lightning activity and widespread flooding following Cyclone Tasha.

Despite these unusually wet conditions, Ergon Energy's cumulative actual reliability performance for October and November 2010 and up to mid December 2010 were generally at or better than the cumulative seasonalised Minimum Service Standards (MSS) for those months. However, the severe flooding following Cyclone Tasha in late December 2010 gave rise to cumulative reliability performance for two of the six reliability measures that was worse than the cumulative seasonalised MSS for the six month period to December 2010. In particular, the unprecedented weather conditions adversely impacted Ergon Energy's unplanned outage performance for the Urban and Short Rural feeder categories, which is reflected in the overall performance against the seasonalised MSS for these feeders. Nevertheless, the unplanned performance results have improved for 5 out of the 6 reliability measures compared to the same period last year as shown in Figure 7 on page 9.

Ergon Energy's planned outage performance during the period July-December 2010 is significantly better than the same period in 2009, which is directly due to the reinstatement of live-line working and the implementation of a number of reliability-focussed initiatives which are discussed in further detail in this document.

Ergon Energy places a high priority on achieving the MSS and continues to use its best endeavors to meet its annual MSS obligations. We continue to monitor, assess, analyse and undertake the necessary remedial action to ensure performance levels that will achieve the MSS in 2010-11 and in future years. In particular, Ergon Energy has put significant focus on its operational practices to improve the response time to unplanned outages and the management of planned outages in order to meet the MSS for 2010-11.

Ergon Energy is also implementing many improvement strategies for reliability improvement through its major capital works projects. Specifically, Ergon Energy has developed a whole-of-business plan for operating under the Australian Energy Regulator's (AER) Service Target Performance Incentive Scheme (STPIS) and MSS Management Plan with the objective of meeting the MSS during the 2010-15 regulatory control period and managing our operations in the context of the AER's STPIS.

The strategies in the STPIS/MSS Management Plan are structured around a three-tiered approach to address unplanned outages:

1. Reduce Events; (reduces SAIDI and SAIFI);
2. Reduce Impacts; (reduces SAIDI and SAIFI); and
3. Improve Response.(reduces SAIDI)

In addition, a three-tiered approach has also been developed to address planned outages:

1. Reduce Events; (reduces SAIDI and SAIFI);
2. Reduce Impacts; (reduces SAIDI and SAIFI); and
3. Minimise Duration. (reduces SAIDI)

A comprehensive list of the 42 strategies and initiatives being undertaken are detailed in this document.

In the AER's recent Distribution Determination[1], Ergon Energy's capital expenditure allowance for Reliability and Quality Improvement investments for the 2010-15 regulatory control period was reduced by $28 million to $107 million (Nominal). To maximize the reliability outcomes in the early years of the regulatory control

[1] The AER's Distribution Determination relates only to the distribution network that is interconnected with the National Electricity Market and the Mount Isa-Cloncurry distribution network – it does not include Ergon Energy's Isolated Networks – whereas the MSS applies to all of Ergon Energy' distribution networks.

period, Ergon Energy has therefore increased its planned 2010-11 Reliability and Quality expenditure to $30 million significantly above the $18.5 million allowance approved by the AER.

Finally, it is important to note that in the month since the completion of the October to December 2010 Quarter, despite wetter than normal conditions prevailing across Queensland (driven by Cyclone Tasha) and Cyclone Anthony hitting the coast at the end of January, Ergon Energy's reliability performance has improved, with current performance (as at the end of January 2011) meeting five MSS (seasonalised targets). However, Category 5 Cyclone Yasi significantly impacted Ergon Energy's network at the beginning of February 2011 and reconstruction work is continuing. The impact of Cyclone Yasi on Ergon Energy's reliability performance will be discussed in more detail in the January to March 2011 quarter report.

Figure 1 - Year-to-Date Performance as at 31 December 2010

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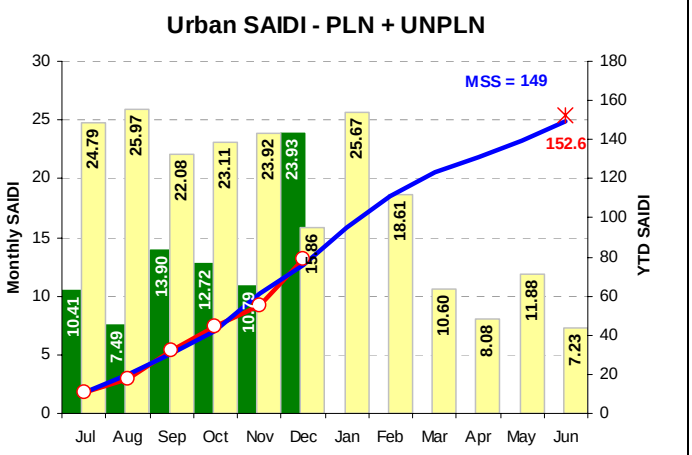

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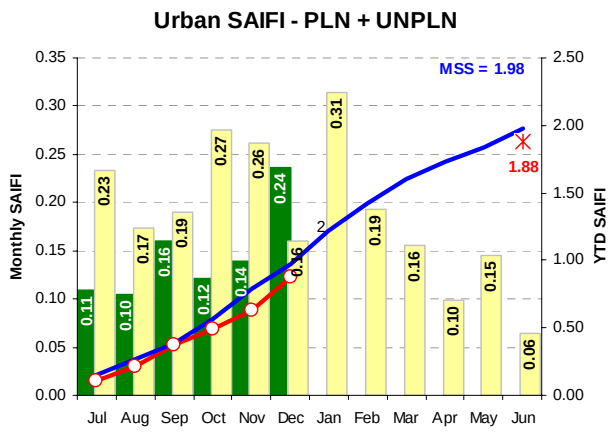

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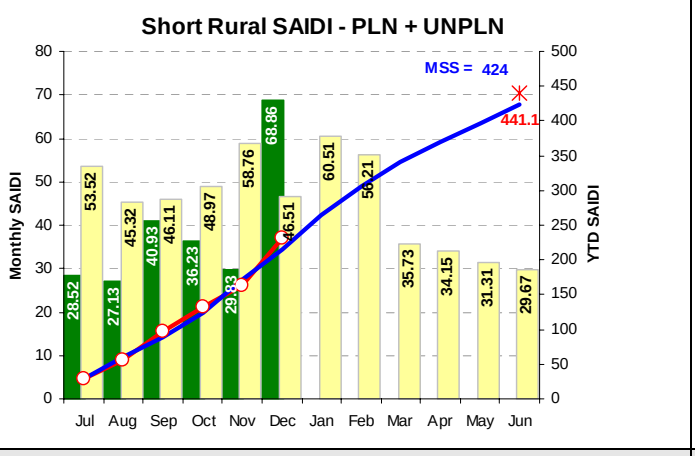

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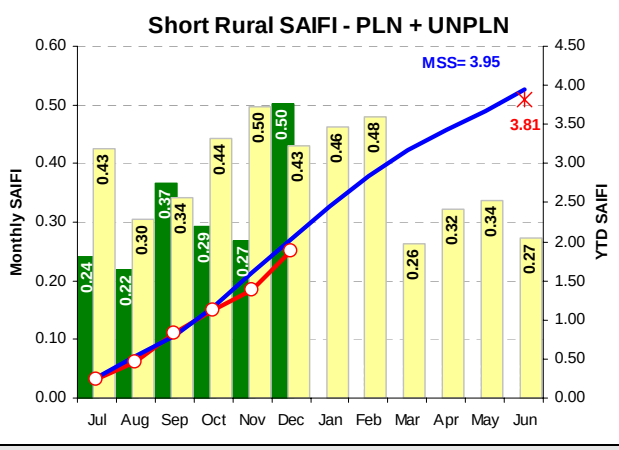

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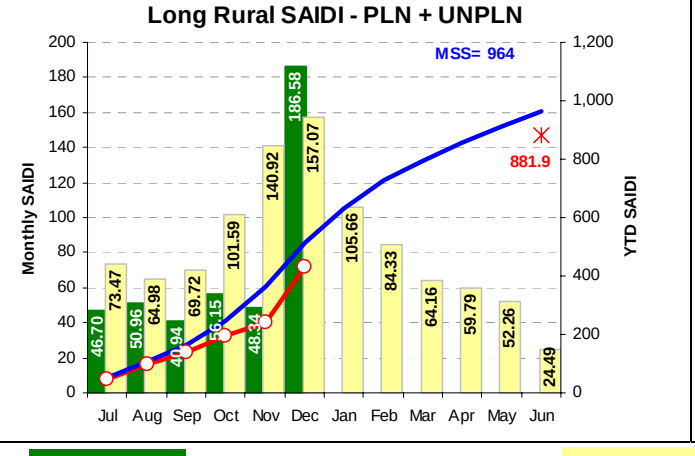

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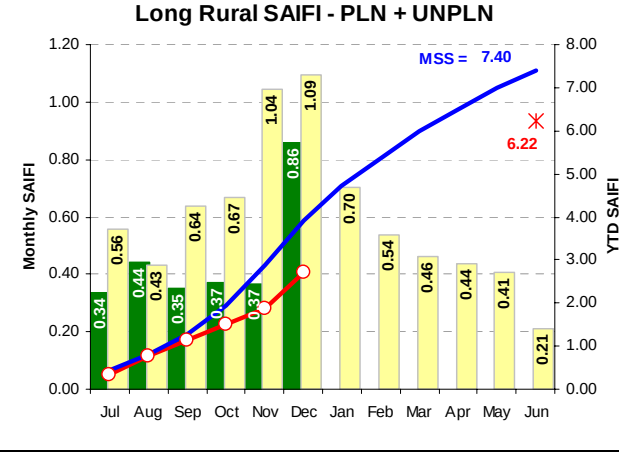


Month Actual Performance

09/10 Month Actual Performance

YTD Cumulative Performance

YTD Cumulative to Achieve Minimum Service Standard

* Estimated Year-End performance result

2. Weather Conditions Analysis

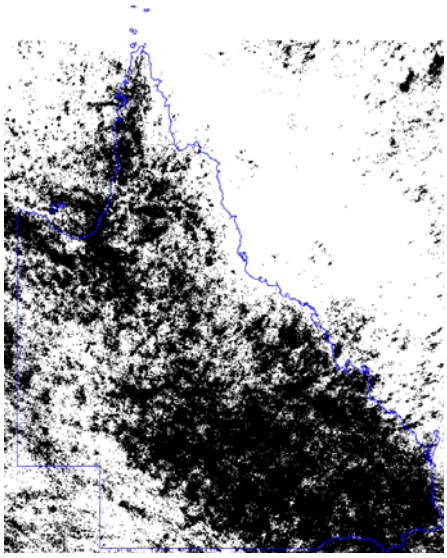
The October to December 2010 Quarter saw more records broken with the wettest spring since records commenced in 1900 - with near triple the average rainfall, and the wettest December on record - with state wide averaged rainfall more than double the long term 1961 to 1990 baseline mean. By comparison, the same quarter of the previous year recorded mean daily maximum temperatures exceeding the long term average and rainfall well below historical averages. Significant thunderstorm and lightning activity was prevalent across the state during December 2010.

Figure 2 below shows the number and location of lightning strikes in Queensland for the October-December quarter this year compared to the same quarter in 2009.

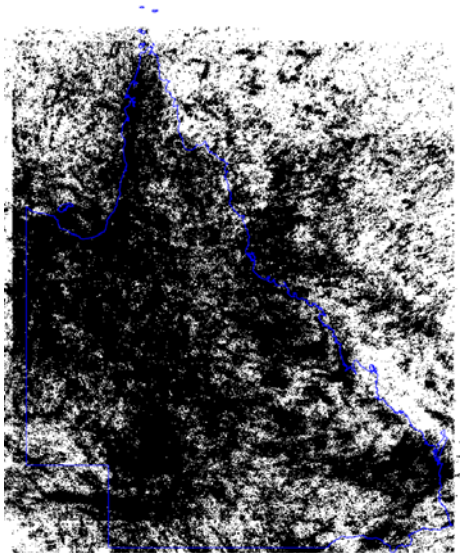
Figure 3 on page 7 shows the location and intensity of rainfall in Queensland for the October-December quarter this year compared to the same quarter in 2009.

The combination of storm activity and lightning strikes along with the record rainfall and extensive flooding has impacted on Ergon Energy's unplanned outage performance. Lightning strikes impact reliability performance as they are a primary cause of damage and outages to a long radial network such as Ergon Energy's distribution network which consists of approximately 160,000km of line across rural Queensland.

Figure 2 – October - December Lightning Strike Maps for 2009 and 2010



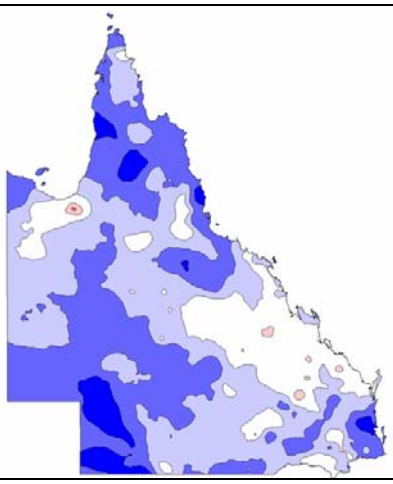
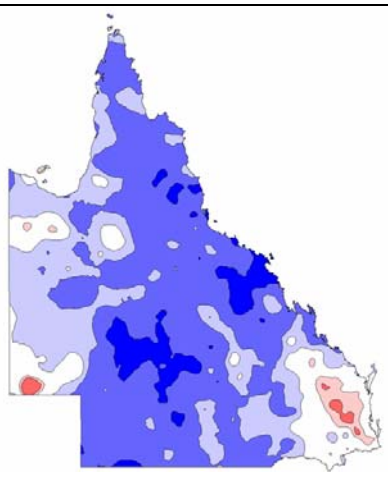
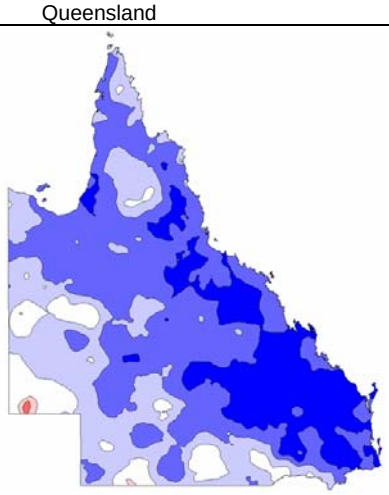
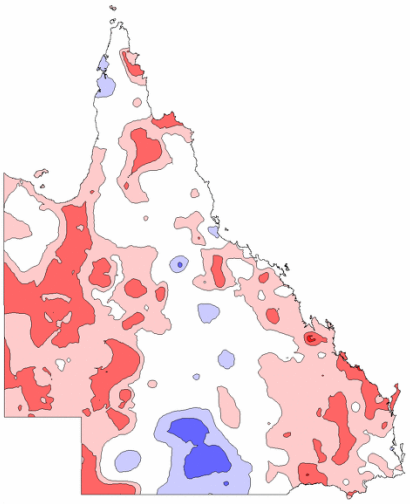
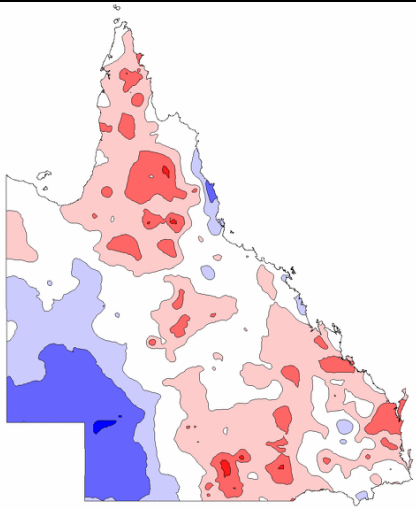
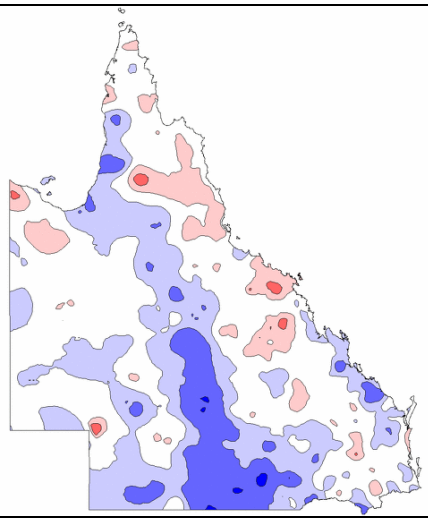
October - December 2009

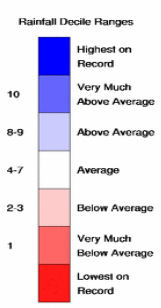


October - December 2010

Source: Ergon Energy Global Positioning and Tracking System (GPATS)

Figure 3 – Bureau of Meteorology Monthly Weather Review Reports

	October	November	December
2010	**Above average rainfall over most of the Ergon supply region.** • 35% of QLD experienced very much above average rainfall • 2% of QLD experienced highest rainfall on record	**Above average rainfall over most of the Ergon supply region** • 55.5% of QLD experienced very much above average rainfall • 4.8% of QLD experienced the highest rainfall on record	**The wettest December on record for QLD** • Average or greater rainfall recorded throughout QLD • Record rainfall in Central and Eastern Queensland
			
2009	**Generally dry conditions across QLD**	**Generally dry conditions across much of QLD.** • Above average rain west and south of the Mt Isa area • Above average rain between Ingham and Cooktown	**Below average rainfall across parts of QLD.** • Above average rain Maranoa, Warrego, western Central Highlands and West Darling Downs
			



3. Current status of performance against Minimum Service Standards

In the six month period to end December 2010, Ergon Energy has made significant progress in improving its reliability performance for all three feeder categories (Urban, Short Rural and Long Rural) compared to 2009-10 as shown in Figures 4 and 5 below.

At an aggregate level (i.e. before splitting into feeder categories), overall whole-of-network SAIDI and SAIFI have improved by almost 26 percent and 27 percent respectively compared to the same quarter last year.

Figure 4– Overall SAIDI Year to Date Comparison – 2009-10 vs. 2010-11

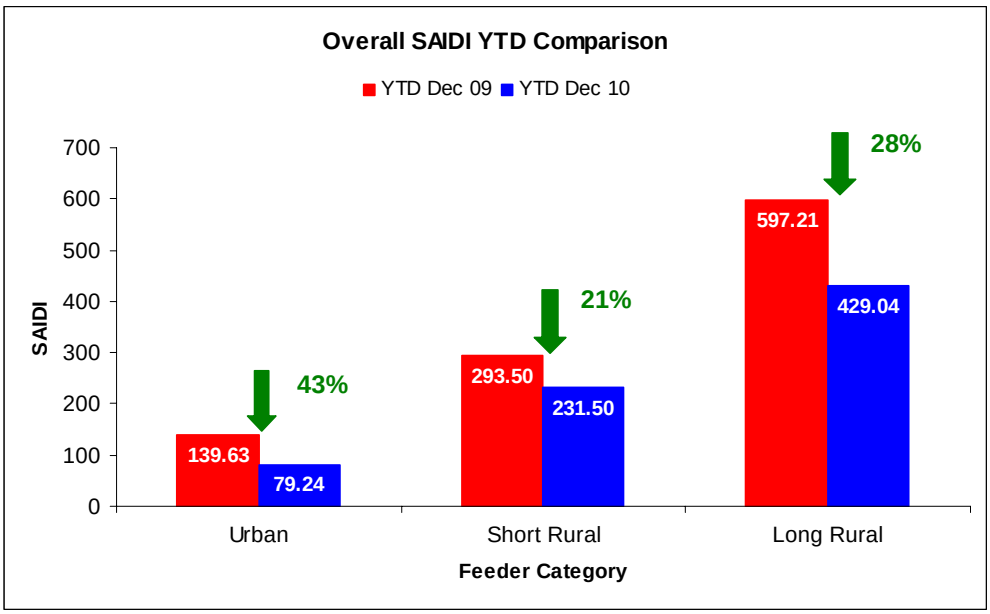
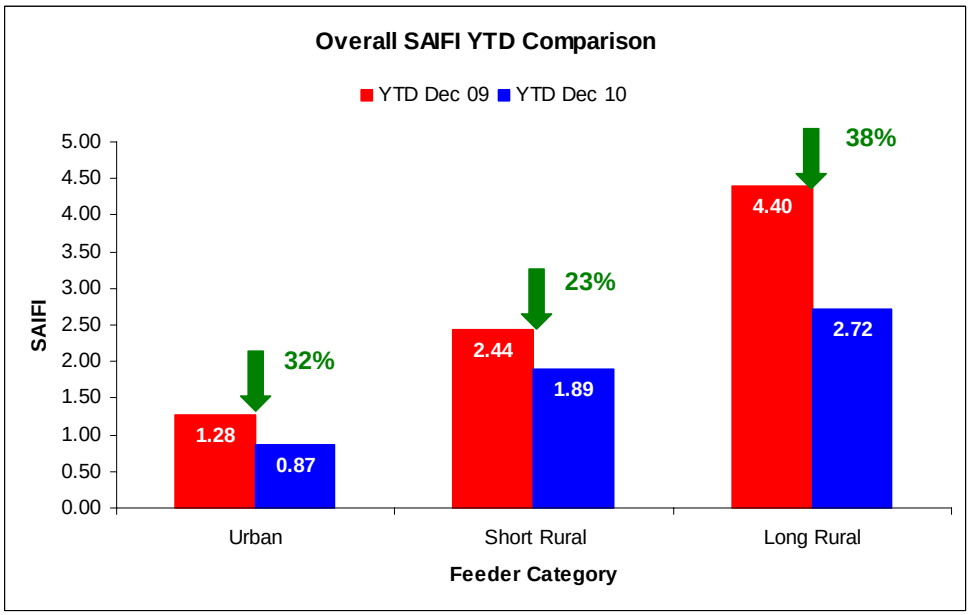
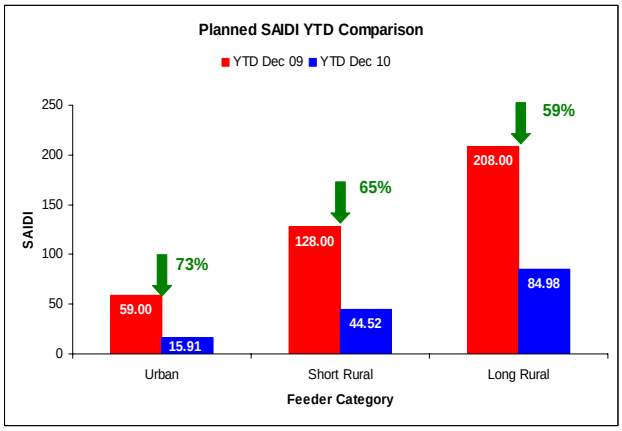


Figure 5 – Overall SAIFI Year To Date Comparison – 2009-10 vs. 2010-11



The safety related suspension of Live Line working in February 2009 compounded by operating bans on a large portion of our Air Break Switch population led to a significant increase in planned outages and resulted in Ergon Energy not meeting five of six Minimum Service Standards (MSSs) in 2008-09 and 2009-10. The progressive reinstatement of live line working since the end of November 2009 has had a dramatic impact on planned outages in 2010-11. This combined with improved planned outage coordination has resulted in significant planned SAIDI and SAIFI improvement in each feeder category as shown in Figure 6 below:

Figure 6 – Planned SAIDI / SAIFI Year To Date Comparison – 2009-10 vs. 2010-11



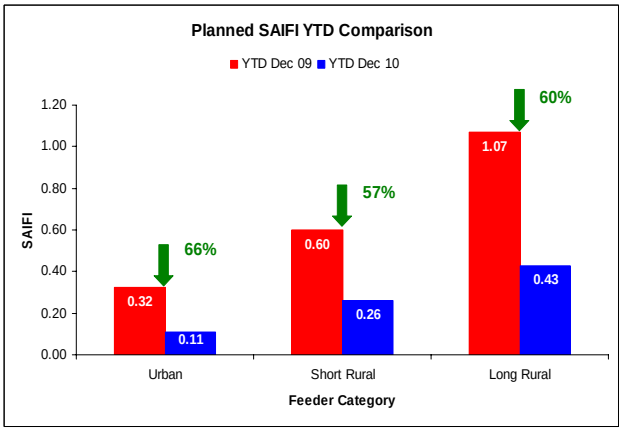
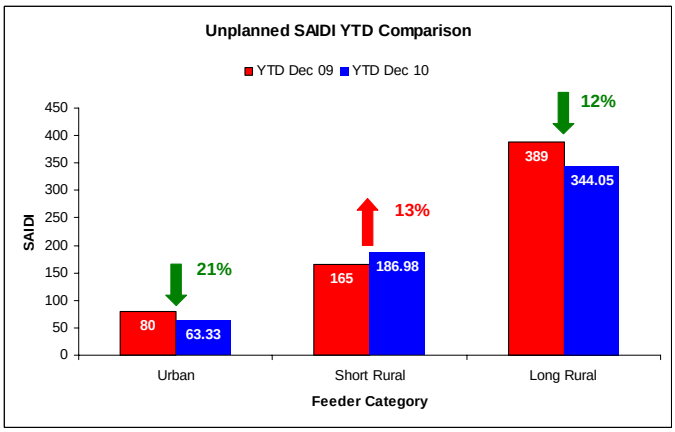
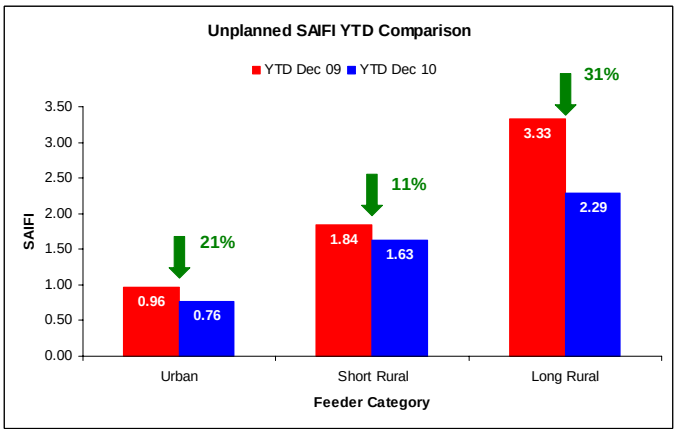


Figure 7 below shows that the year-to-date unplanned performance results have improved for all the measures with the exception of Short Rural SAIDI. The extreme weather conditions during the quarter and particularly at the end of December 2010, have had a more pronounced impact on the unplanned performance of Short Rural and Long Rural feeder types due to dominantly radial design, exposure length and remoteness (response) compared to Urban feeders. The overall unplanned performance improvement is reflective of the significant focus that Ergon Energy has placed on its operational practices to improve response time to unplanned outages.

Figure 7 – Unplanned SAIDI / SAIFI Year To Date Comparison – 2009-10 vs. 2010-11





In order to measure monthly progress towards meeting the annual MSS, the MSS are "seasonalised" by converting the annual MSS into cumulative monthly values based on the average historical contribution of each month's reliability performance to the annual total. The cumulative seasonalised MSS values are represented by the blue line on each of the charts presented in Figure 1 on page 5. If Ergon Energy's cumulative actual year to date performance is equal to or better than the seasonalised MSS, ***and*** the reliability performance for the remainder of the financial year aligns with the seasonalised MSS monthly totals, then Ergon Energy will meet the MSS. It should be noted that while the targets are seasonalised the current weather is extreme and well outside the patterns experienced in the period that the average historical contribution is set.

Generally Ergon Energy's cumulative reliability performance for the months October and November 2010 was at or better than the seasonalised MSS for those months. The severity of and the geographic area impacted by flooding from record rainfall during December 2010 gave rise to reliability performance worse than the cumulative seasonalised MSS for two of the six reliability measures at the end of the December quarter 2010. This consequently impacted the end of year projections for those two measures:

- Urban SAIDI performance (152.6 minutes) is projected to be slightly higher than the Urban SAIDI MSS for 2010-11 of 149 minutes i.e. exceed by 3.6 SAIDI minutes (2.4%); and
- Short Rural SAIDI performance (441.1 minutes) is projected to be slightly higher than the Short Rural SAIDI MSS of 424 minutes (4.0%); and

Historically the summer storm season has considerably influenced Ergon Energy's end of year reliability performance results, as evidenced by historical performance trends and the proportion of Major Event Days experienced by Ergon Energy occurring during the December to March period.

The effects of the unprecedented flooding across regional Queensland began to impact Ergon Energy's reliability performance toward the end of December resulting in the declaration of two Major Event Days on the 27th and 28th of December. While Tropical Cyclone Tasha crossed the North Queensland coast on 25 December 2010, the reliability performance impacts of this event did not qualify as a Major Event Day.

Despite the reliability performance position reported at the end of December 2010 the preliminary performance statistics at the end of January 2011 indicate that Ergon Energy is recovering well against the MSS in spite of Cyclone Anthony at the end of January 2011. At the end of January, the two measures forecast (as at the end of December) to report unfavourably to the end of year MSS limits had improved. Urban SAIDI is now forecast to report favourably to the year end MSS limit and the forecast margin for Short Rural SAIDI exceeding the MSS limit at the year end has reduced to 2.5%. The other four measures continue to forecast favourably to the MSS limits.

4. Reliability and Quality Improvement Initiatives

Ergon Energy places a high priority on MSS and continues to use its best endeavors to meet its annual MSS obligations. We continue to monitor, assess, analyse and undertake the necessary remedial action to ensure performance levels that will achieve the 2010-11 MSS and beyond.

Ergon Energy has therefore put significant focus on its operational practices to improve the response time to unplanned outages and the management of planned outages in order to meet the MSS for 2010-11. In addition, Ergon Energy is also implementing many strategies for reliability improvement through its major capital works projects. Specifically, Ergon Energy has developed a whole of business STPIS and MSS Management Plan with the objective of meeting the MSS during the 2010-15 regulatory control period and to manage its operations in the context of the AER's STPIS.

The strategies in the STPIS/MSS Management Plan are structured around a three-tiered approach to address unplanned outages:

1. Reduce Events (reduces SAIDI and SAIFI);
2. Reduce Impacts (reduces SAIDI and SAIFI); and
3. Improve Response (reduces SAIDI).

In addition, a three-tiered approach has also been developed to address planned outages:

1. Reduce Events (reduces SAIDI and SAIFI);
2. Reduce Impacts (reduces SAIDI and SAIFI); and
3. Minimise Duration (reduces SAIDI).

Our current focus is on 42 initiatives described in the sections below, with another 49 in various stages of planning for future deployment. Our overall program will continue to grow and will run over the current regulatory period to 2014-15.

Further, Ergon Energy has put in place a number of governance mechanisms to review performance and monitor improvement initiatives:

- A Executive Steering Committee to oversee to monitor and manage reliability improvement meeting fortnightly;
- A Reliability Reference Group to oversee implementation of the STPIS/MSS Management Plan meeting weekly;
- Full project management discipline to deliver the STPIS/MSS Management Plan including dedicated project management resources;
- Daily reporting of significant events to all levels in the business;
- Weekly monitoring of performance against targets;
- Investigation of all events over 500,000 customer minutes; and
- Provision of tools to Operations staff for monitoring and managing outage restoration (Outage Dashboard) and managing planned outages (Planned Outage Calculator).

Ergon Energy has also implemented a structured three tier communications plan designed to provide appropriate information through broad based communications (organisation wide), business unit specific and individual messages designed to lift the understanding and engagement of every employee within the business. Ergon Energy's response to the MSS challenges is being coupled with this communication strategy to support the change so that the message is pitched at the right level, and is delivered in terms that is most effective to the audience.

The benefits of the strategies and initiatives listed below will deliver reliability performance improvements over a number of years. However, it is difficult to progressively quantify the reliability performance improvements realised by each initiative set out below as reliability performance is influenced by a combination of a variety of factors. Operational management of response or planned outages has a more direct short term impact on performance.

The nature of the expected reliability benefits likely to be realised upon the full execution and completion of the initiatives have been set out below. The initiatives have been further segregated based on the progress status as of December 2010.

4.1 Asset Related Initiatives to improve both SAIDI and SAIFI

Completed as of December 2010

Note: some of these initiatives are ongoing and/or will be progressed during future quarters. Initiatives with completed milestones in September 2010 have been listed below and is included in this report for the sake of completeness.

1. Ergon Energy has commissioned a number of **new Zone Substations** across its network to augment supply and ensure network security. These substations also increase the number of distribution feeders and reduce the number of customers per feeder (and per substation) in the area where they are implemented. This has an important consequence for the underlying reliability performance in those areas, in that the frequency and duration of outages is reduced, particularly for Urban and Short Rural feeders. New zone substations also deliver reliability improvements by:
    - Providing new injection points from the subtransmission network;
    - Reducing substation-related outages and improving substation performance through the installation new assets; and
    - Providing greater feeder transfer capacity to improve the time taken to restore supply following outages.

Recently commissioned substations that will start to deliver improved reliability performance from 2010-11 onwards include zone substations located at El Arish, Belgian Gardens, Oonoonba, Glenella, Jubilee Pocket, Berserker, Tanby, Bundaberg Central, Cawdor and Kearney Springs;

2. Works to **reinforce the subtransmission network** have been conducted in a number of areas to improve the security and reliability performance of the subtransmission network. Given that these works affect the subtransmission network, reliability performance improvements (both duration and frequency of outages and SAIDI and SAIFI) will be delivered to all feeder categories. New bulk supply substations either underway or recently commissioned include new substations at: Glenella/North Mackay (completed), Louisa Creek Bulk Supply (completed), Pandoin (under construction), Daandine (completed), Columboola Bulk Supply (completed) and Oakey Bulk Supply (completed);
3. Ergon Energy is continuing to **replace aged substation assets** which are in poor condition. The replacement of aged assets reduces the likelihood of asset failures, which in turn reduces the frequency of outages and SAIDI and SAIFI, predominantly for Short and Long Rural feeders, but also for Urban feeders. Substations recently completed include: Dalby Bulk Supply (completed), Clare Bulk Supply (completed) and Mundubbera Zone Substation (completed);
4. **Major augmentation works and the upgrade of substation assets** are continuing across Ergon Energy's network. These works, which also include the replacement of aged assets, will also deliver reliability improvements as set out above. Substations recently completed include: Black River zone substation (completed), Rasmussen Zone Substation (partially complete), Gayndah zone substation (completed), Point Vernon zone sub (underway) and Roma Bulk Supply (partially completed);
5. Ergon Energy has commenced producing **weekly performance reporting** against the MSS targets to keep track of performance against the monthly and year to date seasonalised MSS values to more readily identify reliability improvement opportunities; and
6. A **Reliability Investment Guideline and a Reliability Planning Guideline**, developed jointly with ENERGEX during 2009-10, have been rolled out across Ergon Energy. The Reliability Investment Guideline outlines the requirements for economically justifying a reliability improvement project and includes investment criteria for assessing the economic worth of a network reliability improvement project. The objective of the Reliability Planning Guideline is to provide reliability planning guidelines for the distribution networks of Ergon Energy for development and implementation of strategies for short to long term reduction of outage frequency and duration. This will cover 11kV, 22kV and 33kV distribution networks for Ergon Energy. These guidelines ensure that Ergon Energy's focus remains on constantly improving its reliability performance, leading to reductions in SAIFI and SAIDI for all feeder types over time.

Ongoing Programs

7. ## [2] **Auto-reclose** is being progressively installed in the eight remaining zone substations in the Townsville area that presently do not have this functionality. The installation of auto-reclose will prevent transient outages (from which the network can automatically recover) becoming permanent outages (which require crews to manually rectify). The key reliability impact as a result of auto-reclose is a reduction in the duration and frequency of permanent outages primarily for Urban feeders, but also for Short Rural Feeders. The strategy being implemented is to establish auto-reclose functionality in Remote Terminal Units (RTUs) at the zone substations in-line with current Ergon Energy standards. At present, four of the eight projects have been designed, two are in design and the remaining two are in the process of being contracted out. It is planned to have the installation of auto-reclose capability completed by the summer of 2011-12. Auto-reclose has already been temporarily enabled at three of the eight sites by utilising existing electromechanical auto-reclose relays until such time as the permanent projects are completed;
8. ## An ongoing program to add **new distribution feeders to existing zone substations** continues to be implemented. In addition to augmenting the existing network capacity, the installation of new feeders provides greater transfer capacity and further sectionalise the network, leading to the reduction in outage impact and frequency and hence SAIDI and SAIFI primarily for Urban feeders, but also for Short Rural Feeders;

[2] Actions marked with ## are the Reliability and Quality Improvement capital expenditure that is set out in Table 1 on page 20.

9. ## A long term program to **replace small diameter aged copper conductor** commenced in 2009-10, with 110km replaced against a target of 40km. Conductor failures are a cause of a large number of outages and this long term program will improve SAIDI and SAIFI for all feeder types by reducing the instances of conductor failure. The first years of the program have targeted feeders with high numbers of conductor failures (such as in the Burdekin region). In 2010-11, 86km of conductor are targeted for replacement, with 88 km replaced to date. Both High Voltage (HV) and Low Voltage (LV) conductor is targeted, with HV conductor having the greatest impact on reliability;
10. The Condition Based Risk Management (CBRM) program for the assessment of **Subtransmission Line Refurbishment and Replacement** is 50% completed. Sample models have been developed and were being reviewed in early February 2011. The models will assist Ergon Energy in prioritising the refurbishment and replacement of Subtransmission Line feeders. This will ensure that the frequency of outages and SAIDI and SAIFI across all feeder types is minimised wherever possible;
11. **Cyclone Area Reliability Enhancement (CARE) program** commenced in 2003 to improve reliability of supply to customers from Mackay north to Far North Queensland. The program primarily targets the establishment of underground feeders in these areas;
12. The **replacement of aged subtransmission lines** is continuing. Even though work is progressing on the CBRM program for the Replacement of Aged Subtransmission Lines, five line projects have been recommended for the 2011-12 year with two of these projects already commenced. These works will reduce the likelihood of asset failure on the subtransmission network supplying zone substations, and hence will reduce the frequency of outages and SAIDI and SAIFI on Urban, Short Rural and Long Rural feeders;
13. Ergon Energy has placed a priority on the **replacement of defective Air Break Switches** (ABS) of particular brands on distribution lines and substations. These switches have limited Ergon Energy's ability to carry out normal switching for planned outages and unplanned outage restoration. The impact has been to increase the number of customers impacted by outages. Ergon Energy has also placed a priority on the ABS replacement program in its substations. This initiative will result in a reduction in planned SAIDI and SAIFI generally, and reduction in unplanned outage duration and SAIDI on all feeder types. At present, Ergon Energy is outworking its ABS replacement strategy, which is targeted at replacing 65 substation ABS during 2010-11 and 1500 line ABS by 2013, 600 of which will be replaced during 2010-11. Thirty (30) percent of the defective line ABS targeted by the strategy are installed on Urban feeders, 60 percent on Short Rural feeders and the remaining 10 percent installed on Long Rural Feeders. ABS replacement is also being prioritised for other key switches. The substation ABS replacement is progressing well with 22 switches replaced. The lines program is just now ramping up following completion of training for Ergon Energy staff and contractors in the use of data capture systems. Resources have been allocated although recent adverse weather events will have some impact on delivery;
14. A three year program is underway to **maintain and replace aged Ring Main Units (RMU),** which are isolating switches in the underground network. This program commenced in 2009-10 and will continue until 2011-12, and is expected to reduce planned SAIDI and SAIFI and unplanned outage duration and SAIDI for Urban feeders. 67 units have been replaced to date, leaving 119 units outstanding for the completion of the program. Resources have been allocated for delivery of the outstanding units;
15. Ergon Energy continues to deliver a **program of asset inspection and defect refurbishment** to identify and repair line defects that has been ongoing for many years. This program continues to reduce the number of asset failures, and therefore the frequency of outages and SAIDI and SAIFI on all feeder types;
16. **Faulty lightning arrestors** identified during asset inspections have been classified as "P2 defects" since 2010-11. This classification ensures that failed lightning arrestors are replaced within 26 weeks, thereby minimising the failure of distribution transformers as a result of lightning strikes. This initiative will reduce the frequency of outages and SAIDI and SAIFI across all feeder types, particularly during the storm season; and
17. Focus is being placed on **considering the impact of planned outages during the construction and commissioning stages** of the project and designing mitigation measures at the concept and estimating phase for new works to ensure planned outages are minimised. This ensures that Ergon Energy's focus remains on reducing the duration and frequency of planned outages wherever possible, leading to a reductions in planned SAIFI and SAIDI for all feeder types over time.

Status of September-December Quarter 2010-11 Initiatives

18. ## **Additional Automatic Circuit Reclosers (ACRs)** have been installed on some of Ergon Energy's consistently poor performing feeders. This program has been underway for many years and has largely targeted poor performing Short Rural and Long Rural feeders. The key reliability outcome resulting from the installation of ACRs on distribution feeders is a significant improvement in feeder performance by limiting the impact of asset failures and improving response times, hence reducing both SAIFI and SAIDI. A strategy is being formalised with the aim of delivering an increased population of automatic circuit reclosers across the Ergon Energy distribution network. This strategy will deliver a proactive rather than reactive plan for the installation of reclosers across the network over five years;
19. ## One particular application of ACRs considered in the ACR Strategy is the **installation of remotely controllable reclosers on the Urban-Rural boundary.** The installation of these devices at targeted locations will prevent failures and faults on the rural section of the feeder from resulting in supply interruptions to the traditionally higher reliability, urban network sections. This program is being incorporated into the ACR Strategy and will focus on an accelerated installation rate over the current regulatory period. This initiative will reduce the impact, duration and frequency of outages (SAIDI and SAIFI) particularly on Urban feeders and to lesser extent on Short Rural feeders;
20. Another component of the ACR Strategy is the installation of **reclosers on Urban feeders**. Delivery of this initiative will reduce the impact, duration and frequency of interruptions (SAIDI and SAIFI) to customers supplied on Urban feeders;
21. Ergon Energy has undertaken **a review of vegetation management practices** to ensure that outages resulting from vegetation management activities are minimised. In addition, a review has been conducted of the vegetation program for opportunities to focus on poor performing feeders (particularly radial and non N-1 subtransmission lines). These reviews have maintained Ergon Energy's focus on minimising the duration and frequency of planned and unplanned vegetation-related outages on all feeder types. The "default" arrangement for all work within approach limits is for the use of Live Line and trials of Jarraff (a brand of all-terrain tree-trimmer) operation in Urban areas to further improve the efficiency and effectiveness of Ergon Energy's vegetation management program have commenced in February 2011;
22. Ergon Energy is currently undertaking **a review of the asset inspection process.** Improvement opportunities arising from this review will reduce the frequency and duration of planned outages required to repair defects, thereby reducing planned SAIDI and SAIFI for all feeder types. A trial on 3,000 poles in Wide Bay is well underway. Workshops have been held to extend the trial to feeders in Far North region in 2011; and
23. A **pre-summer aerial inspection of radial and non N-1 subtransmission lines** is carried out each year to identify defects and to allow sufficient time to rectify any latent defects before the storm season. This initiative continues to reduce the frequency of outages and SAIDI and SAIFI across all feeder types. This action is now **complete** and future plans are aligned with this strategy.

To be progressed in future quarters of 2010-11

24. A number of circuit breaker failures have resulted in large outages, and as a result, Ergon Energy has initiated a program of work to ramp up the **replacement of circuit breakers in zone substations.** A condition based risk management (CBRM) methodology has been applied to assess the condition of the circuit breaker population and identify equipment with the highest risk of failure that will have the greatest impact on reliability. In addition, a maintenance program for HLC type circuit breakers is also underway following investigation of a major failure. This program is nearing completion with 87 of 90 circuit breakers complete. A program of works for the replacement of 147 circuit breakers over the next five years has been approved within Ergon Energy. Projects for the replacement of seven circuit breakers have been issued at this stage. These programs will reduce the frequency of outages and SAIDI and SAIFI on all feeder types;
25. Several large outages have been caused by false trips of Frame Leakage bus protection. This protection scheme exists in a 115 switchboard sections in 47 substations. A maintenance program is being established to **check all of these switchboards** and carry out works to minimise false trips. This program is expected to reduce by SAIDI and SAIFI across all feeder types. An action plan has been developed involving testing of current sites and the installation of warning signs regarding the presence of frame leakage protection at the relevant substations. Testing procedures and a program of test is being finalised. This program will take place during 2011 and 2012; and
26. Ergon Energy has identified that improved legacy subtransmission system design can reduce outages due to sub-transmission faults. As a result, a number of **subtransmission voltage switchyards are being upgraded** to improve reliability, resulting in a reduction in the impact and frequency of outages and SAIDI and SAIFI predominantly on Urban and Short Rural feeders, but also for Long Rural Feeders. Future upgraded sub-transmission voltage switchyards include Warwick 132kV bus (underway), Cannonvale 66kV bus and Charleville. Further opportunities will identified by the fourth quarter to establish a five year program of works.

4.2 Asset Related Initiatives to Improve Response Time and SAIDI

Completed as at December 2010

Note: some of these initiatives are ongoing in Ergon Energy and/or will be progressed during the future quarters. Initiatives with completed milestones up to December 2010 have been listed below.

27. Ergon Energy has developed appropriate **additional measures, reporting and planned performance assessment/forecast tool**s (such as the Outage Dashboard and Planned Outage Calculator) and guidelines for the network operators to consider. These initiatives are intended to minimise the number of planned outages by assisting with better works planning and to better manage response to unplanned outages.

Ongoing Programs

28. A program of adding **remote control to line mounted ACRs** to improve response times has been underway for some years. A business case for the ACR Remote Communication Strategy – Phase 1 has been approved to provide a uniform, accelerated approach to implementing the remote control of existing ACRs across Ergon Energy's network and expand the remote control functionality on existing reclosers on the distribution supply network. The improvement in response times will lead to reductions in SAIDI for both Short and Long Rural feeders. The program involves the installation of new remote communications to 167 distribution reclosers, with 155 on NextG modems and 12 on Satellite technology over the next two years (2010-11 -2011-12); and
29. ## A **SCADA Acceleration Strategy** is currently being implemented with a view for completion by the end of 2011. This strategy will accelerate the existing SCADA implementation program from five years to two years, and will result in the progressive implementation of remote control facilities at 59 substations to reduce response time following outages. As at December 2010, 14 of the sites have been commissioned, with installation completed for 23 and designs completed for 34. The key reliability

improvement will be a reduction in SAIDI predominantly for Urban and Short Rural Feeders, but also for Long Rural Feeders.

Status of September- December quarter 2010-11 initiatives

30. ## Ergon Energy has made progress on the **trial of a number of types of Line Fault Indicators (LFI)** before the storm season to assist with locating faults, however this program has been impacted by flooding. Trial units have been installed on poor performing feeders in Ergon Energy's southern regions in the first half of 2010-11. If the trial proves to be successful during the 2010-11 storm season, Ergon Energy will expand the LFI installation further into the distribution network within the next few years. It is anticipated that this program would reduce SAIDI for all feeder types. Units installed to date are returning good data and are operating as expected; and
31. ## Ergon Energy has identified opportunities for **additional feeder ties on the distribution network** to reduce restoration time following outages. Identification of potential opportunities is underway for projects to be implemented in 2011-12. This strategy will result in a five year program to reduce the duration of outages (and hence SAIDI) for Short Rural and Long Rural Feeders.

4.3 Operational Response Initiatives

4.3.1 Unplanned Outage Response

Completed as at December 2010

32. Ergon Energy has completed an initial **review of its resource levels for response** in preparation for the 2010-11 storm season. Further to the resource levels, Ergon Energy has implemented consistent escalation protocols for each area to ensure an escalation path exists designed to initiate early management involvement should assistance be required;
33. In 2010 Ergon Energy deployed a **real time outage monitoring database** called the "Outage Dashboard". This innovative tool is accessible to all employees in the company and represents the status of interruptions (planned and unplanned) across the entire Ergon Energy network. The benefit of the tool is twofold: the first is providing visibility of all events, broken into areas and regions, and the second is forecasted customer minutes associated with each outage, thereby ensuring the outage with the greatest customer impact receives attention first; and
34. **Communicating the impact that restoration decisions** have on company performance has been a focus for Ergon Energy over the past six months. Prior to the commencement of the 2010-11 financial year, a process of investigating and learning through the review of all unplanned outage events greater than 500,000 customer minutes was implemented. These reviews are undertaken to increase the business understanding of the 'cost' associated with unplanned outage management and the customer service benefits associated with improving decision-making during unplanned outages. Further improvements in this process will occur during 2011.

Ongoing

35. Ergon Energy continues to explore innovations that will have a positive influence on the ability to **find network faults and restore supply safely as soon as practically possible**. Through the use of Google mapping systems, Ergon Energy is developing an approach that provides spatial representation with appropriate overlays of the network schematics to represent faulted sections of line, and overlay individual customer fault reports.

Status of September- December quarter 2010-11 initiatives

36. To minimise the impact on system security, **returning plant** that may be in a defective condition or in a condition yet to be assessed is an important element in ensuring the power system integrity is maintained. In order to aid achieving complete visibility and gain control over this situation, Ergon Energy will review the trend of defective and Out Of Service plant (OOS) to ensure visibility and focus is placed on dealing with system abnormalities. In addition to governance and oversight of this matter, Ergon Energy has commenced a review of the current OOS remediation processes. This will include

developing a new process to review OOS and defective plant at regular intervals, with a focus on developing a remediation plan that positively influences SAIDI and SAIFI delivered through more effective outage and works planning. This review will continue during 2011;

37. Ergon Energy has a robust management system that ensures the **high voltage network is access and worked on in a safe and efficient manner**. This system has been in place for most of the past ten years and is now due for review. Consequently, Ergon Energy is embarking on a review of sections of the "Operate the Network" procedural documentation during 2011 to identify areas to increase the effectiveness and efficiencies of operating on the HV network. The first element of the operating rules being reviewed is the manual reclose and wires down policy, as this policy has been in place for some years and driven by the increasing reliability challenges a review has commenced to ensure it is contemporary, safe, and drives appropriate risk based outcomes.

To be progressed in future quarters of 2010-11

38. Ergon Energy is continually seeking ways to increase the efficiency and effectiveness of our business operations, one such area of opportunity is in **electronic dispatch and scheduling** to field based employees. We believe that a mobile field capability enabled with a technology solution will allow Ergon Energy field staff to streamline workflows, eliminate paper based documents and deliver more efficient and effective service to our customers, commonly known as Field Force Automation (FFA). FFA provides technology enabled processes which automate the allocation of work, delivery of the work documentation to field crews, fast transfer of information, and capturing of work completion data at the source. At this stage Ergon Energy is seeking to commence building this capability in 2012, after which benefits associated with this investment are expected to be delivered, including a positive influence on reliability improvement during the 2013 to 2015 period.

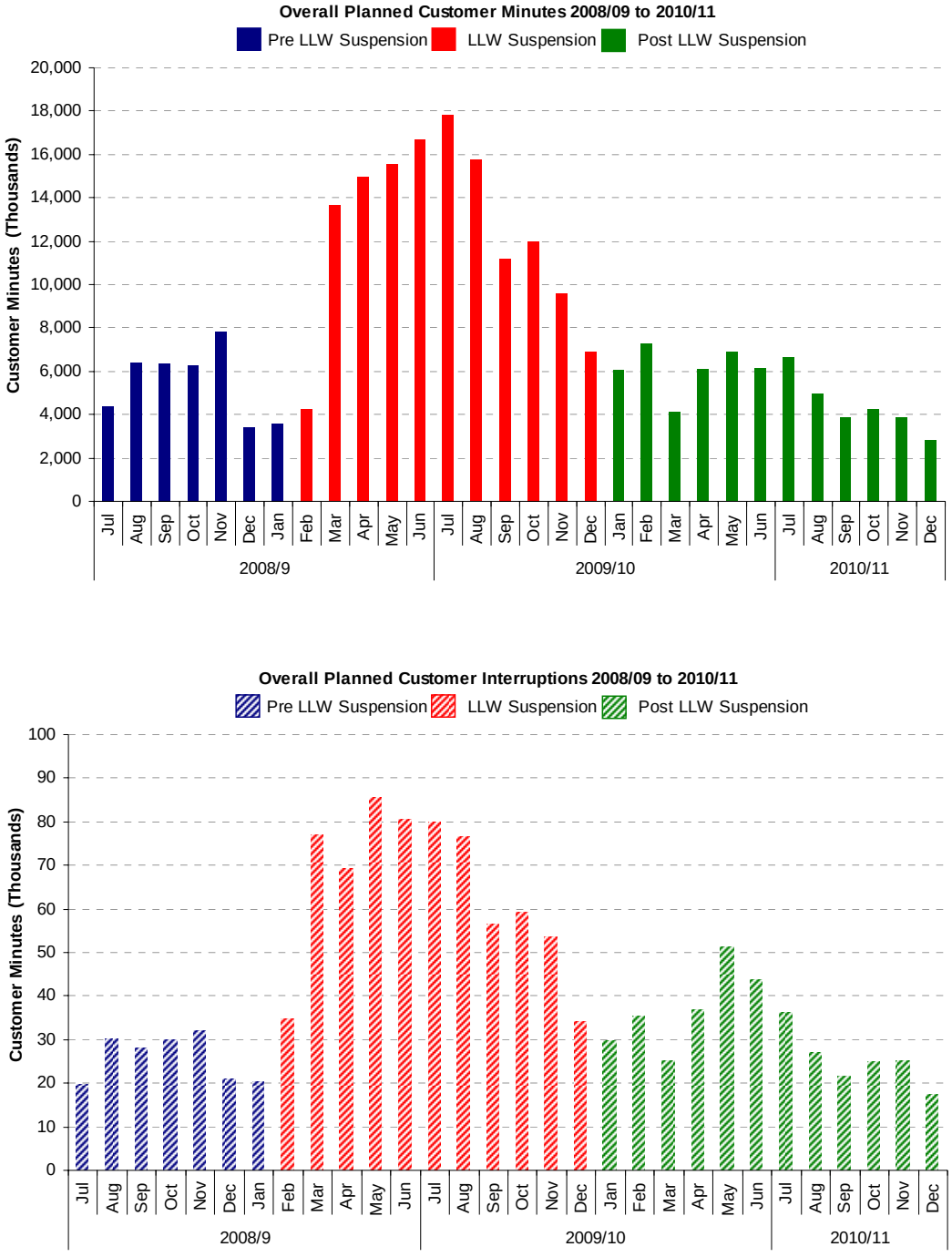
4.3.2 Planned Outage Management

Figure 6 on page 9 illustrates the improvement in the year to date planned SAIDI and SAIFI to the end of the December quarter 2010-11 compared to same period in 2009-10. The initiatives below have contributed to this improvement.

Completed as at December 2010

39. The 2009 ban on performing Live High Voltage work had an immediate impact on reliability measures requiring all work to be performed in a de-energised state. The graphs in Figure 8 on page 18 represent the impact of ceasing live line work on planned customer minutes and customer interruptions and the subsequent reduction as live work was re-instated in December 2009 by Ergon Energy. The use of limited Live Line working commenced in December 2009. Ergon Energy **has continued to review and re-instate more of its Live Line Work safety procedures**. While some live line tasks practiced previously will not be reinstated due to the new standard, it is planned to increase both the combined capability and capacity to exceed that of pre-live line suspension progressively over the 2010 to 2015 regulatory control period.

Figure 8 – Impact of Live Line Suspension



40. As a strategy to improve performance in this area, Ergon Energy has designed and **implemented a Planned Outage Calculator (POC)** which has transformed the performance monitoring of planned outages beyond the previous capability. The purpose of the POC is to provide the lowest level of detail associated with approving planned outages on the network. The POC enables any person requiring access to the HV network information to guide their decision making. The POC provides actual SAIDI and SAIFI month to date and a forecast against the end of month depot, area and region targets. This calculator is available online on the Ergon Energy intranet in a section dedicated to Reliability, which accessible to all employees. Implementing the POC has provided the mechanism for Area and General Managers to make judgements when approving planned outages considering their individual planned

SAIDI and SAIFI targets. The benefits of performance management being evidenced in the 2009-10 to 2010-11 year to date comparison of planned SAIDI and SAIFI graphs shown in Figure 6 on page 9.

Ongoing

41. An area that Ergon Energy has identified as an additional opportunity for further improvement is in the **use of Low Voltage and High Voltage injection generation sources** to maintain safe supply to customers while work is undertaken. Ergon Energy has purchased several generation units and has deployed them to the areas of greatest reliability benefit. In addition, Ergon Energy is undertaking a complete review of the generation deployment standards, and connection protocols in an effort to increase deployment flexibility and speed. Currently the configurations being reviewed are:

    - Small isolated arrangements (max 1250 kVA), this configuration is similar to that used by ENERGEX. This configuration can be applied in short term unplanned, planned, and islanded mode;
    - Large arrangements which will be required to operate in parallel and isolated configuration from the network. This is the current Ergon Energy arrangement and most often used in planned load management situations; and
    - Large arrangements used for peak load lopping designed to support the network paralleled with the energized network.

    A draft HV injection reference document has been completed and is waiting on RPEQ sign off and deployment into the business. Concept drawings are currently being developed for "step-up HV injection skids" which will provide the means to take 415V from generators and inject 11/22kV into the network. It is planned for two of these HV Injection Skids to be available for trials by late 2011. Additional units are planned to be built in 2012; and

42. Through the use of **Google mapping systems** Ergon Energy is also developing an approach that provides spatial representation with appropriate overlays of the network schematics to show planned work locations to facilitate more effective forward planning of outages. Further, Ergon Energy will be developing a process for achieving full visibility of all work at a feeder level to enable the efficient planning and packaging of works, thereby reducing the impact on planned SAIDI and SAIFI. These improvements will continue in 2011.

5. Reliability Improvement Investment

Table 1 below shows the **year-to-date (end of December 2010) expenditure** and **next quarter (January - March 2011 Quarter) budget** associated with Reliability and Quality Improvement works for 2010-11 compared with the year-to-date budget. Expenditure is shown not only for the specific reliability improvement program of works but also works associated with other programs in the 2010-11 plan that are considered to provide direct reliability benefits. There has been some minor slippage in works due to the impact of wet weather on the works program.

Items marked with "##" in Section 4 above are part of the specific "Reliability Improvement" values in Table 1. Actions which target other drivers but also have a positive impact on reliability have not been included in Table 1:

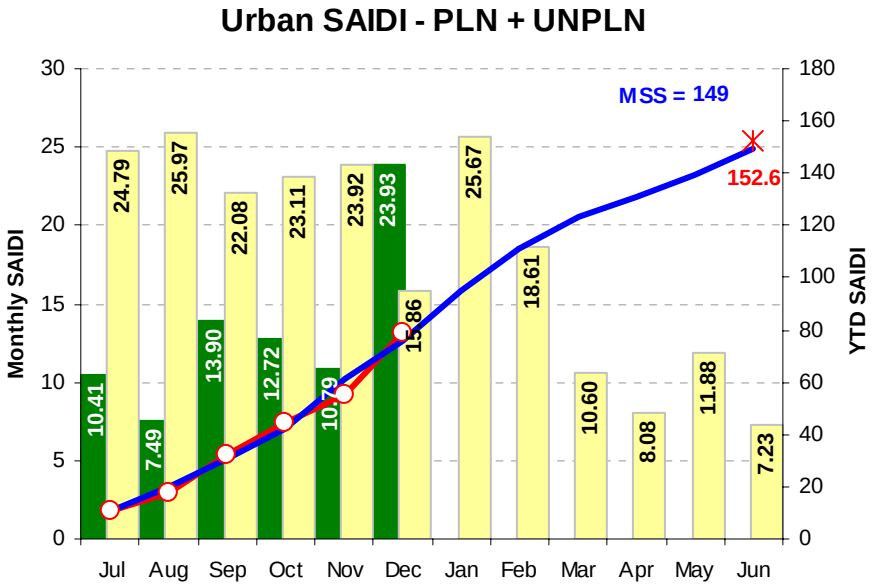
Table 1 - 2010-11 Reliability and Quality Improvement Capital Expenditure

RELIABILITY IMPROVEMENT WORKS			
Asset Replacement	YTD Actual Costs	$	7,361,804
	YTD POW Budget	$	7,216,966
	3rd Qtr POW Budget	$	4,781,380
	Total 10/11 Budget	$	12,438,385
Augmentation	YTD Actual Costs	$	10,227,285
	YTD POW Budget	$	10,145,946
	3rd Qtr POW Budget	$	12,560,753
	Total 10/11 Budget	$	33,977,612
Other System Capex	YTD Actual Costs	$	3,395,438
	YTD POW Budget	$	4,704,743
	3rd Qtr POW Budget	$	1,203,187
	Total 10/11 Budget	$	12,664,845
Reliability Improvement	YTD Actual Costs	$	8,323,302
	YTD POW Budget	$	9,528,107
	3rd Qtr POW Budget	$	6,896,694
	Total 10/11 Budget	$	29,862,835
Total Sum of YTD Actual Costs		$	29,307,829
Total Sum of YTD POW Budget		$	31,595,762
Total Sum of 3rd Qtr POW Budget		$	25,442,014
Total Sum of 10/11 Budget		$	88,943,677

Note: The above expenditure does not include all the initiatives that are set out in Section 4 above, such as the new zone substation projects and associated subtransmission lines, but does include the associated works on distribution lines.

In addition to these direct reliability works, other network augmentation, asset replacement and refurbishment works, defect repair, protection and communication expenditure and virtually all corporation-initiated network capital have a positive impact on reliability performance outcome. Also, all the Corrective and Preventive Maintenance works (Operating Expenditure), which include the asset inspections, also contribute to network performance improvement.

6. Urban SAIDI Performance



The year-to-date reliability performance result for Urban SAIDI marginally exceeds the 2010-11 seasonalised MSS target at the end of the December quarter 2010. The year-to-date December 2010 results plus the seasonalised target line projection year-end reliability performance for 2010-11 for Urban SAIDI (152.6 minutes) exceeds the MSS (149 minutes) by a margin of 3.6 minutes. It should be noted that in the month since the completion of the October-December 2010 Quarter, despite wetter than normal conditions prevailing across Queensland coupled with the impacts of tropical cyclone Anthony, Ergon Energy's reliability performance has improved, with current projections (as at the end of January 2011) indicating that Ergon Energy is likely to achieve five of the six MSS by the end of 2010-11. Through January Urban SAIDI performance has improved to become favourable to the MSS and forecast to continue to be favourable at the year end 2010-11.

Urban feeders make up approximately three percent of Ergon Energy's distribution feeder network and supply about 33 percent of its customers.

The reliability performance for all feeder types during the December quarter 2010, and most particularly December 2010, was impacted by the abnormal weather conditions experienced at the end of December 2010. Large areas of the state received their highest December rainfall on record during 2010. The Queensland state average was the highest on record. The central region and southern interior received approximately 200% of their average December rainfall, resulting in very extensive and prolonged flooding.

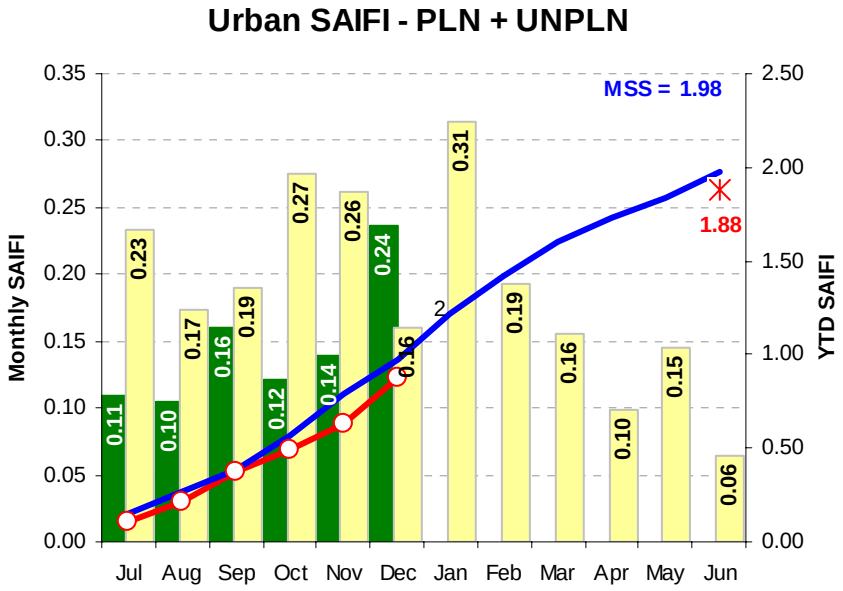
The overall Urban SAIDI year to date performance to the end of the December quarter 2010 has substantially improved (43 percent improvement) in comparison to the corresponding period of 2009-10. In addition, planned Urban year to date SAIDI has improved by 73 percent compared to the corresponding period in 2009-10.

For comparison purposes, Figure 4 on page 8 demonstrates the improvement on overall SAIDI to the end of the December quarter for both 2009-10 and 2010-11.

For a full list of the initiatives being undertaken by Ergon Energy to improve Urban SAIDI reliability performance, please refer to Section 4 *Reliability and Quality Improvement Initiatives* section of this report.

Finally, it is important to note that the quarterly year-to-date data presented in the December Quarter MSS and GSL report does not exactly equal the sum of the monthly data in the charts above. This is because the customer numbers upon which the SAIDI and SAIFI measures are calculated are different. Specifically, the monthly data in the charts above are based on customer numbers as at the end of the specific month, whereas the quarterly results in the December Quarter MSS and GSL report are based on cumulative customer numbers as at the end of the quarter. Consequently, due to the different basis upon which the monthly and quarterly SAIDI and SAIFI measures are calculated, the monthly results cannot be added to reconcile with the equivalent quarterly results. This applies to the results for all feeder categories set out in this report.

7. Urban SAIFI Performance



The year-to-date reliability performance result for Urban SAIFI is favourable to the 2010-11 seasonalised MSS target at the end of the December quarter 2010. Further, the projected year end reliability performance for 2010-11 for Short Rural SAIFI (1.88) is forecast to report favourably to the annual MSS (1.98) by a margin of 0.1.

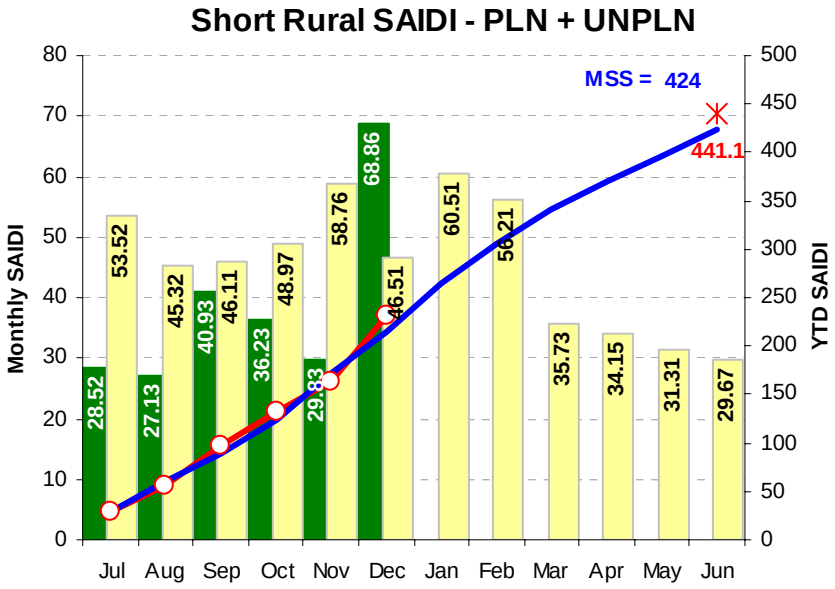
Urban feeders make up approximately three percent of Ergon Energy's distribution feeder network and supply about 33 percent of its customers.

The overall Urban SAIFI year-to-date performance at the end of the December quarter 2010 has substantially improved (32 percent improvement) in comparison to the corresponding period of 2009-10. In addition, planned Urban year to date SAIFI has improved by 66 percent compared to the same period in 2009-10.

For comparison purposes, Figure 5 on page 8 demonstrates the improvement on overall SAIFI at the end of the December quarter for both 2009-10 and 2010-11.

For a full list of the initiatives being undertaken by Asset Management to improve Urban SAIFI reliability performance, please refer to Section 4 *Reliability and Quality Improvement Initiatives* section of this report.

8. Short Rural SAIDI Performance



The year-to-date reliability performance result for Short Rural SAIDI marginally exceeds the 2010-11 seasonalised MSS target for the period at the end of the December quarter 2010. The projected year-end reliability performance for 2010-11 for Short Rural SAIDI (441.1 minutes) marginally exceeds the MSS (424 minutes) by a margin of 17.1 minutes. However, it should be noted that in the month since the completion of the October-December 2010 quarter, despite wetter than normal conditions prevailing across Queensland coupled with the impacts of tropical cyclone Anthony, Ergon Energy's reliability performance has improved. Current projections (as at the end of January 2011) indicate that Ergon Energy is likely to achieve five of the six MSS by the end of 2010-11. Short Rural SAIDI continues to be the only measure forecast to report unfavourably to the MSS at the end of 2010-11.

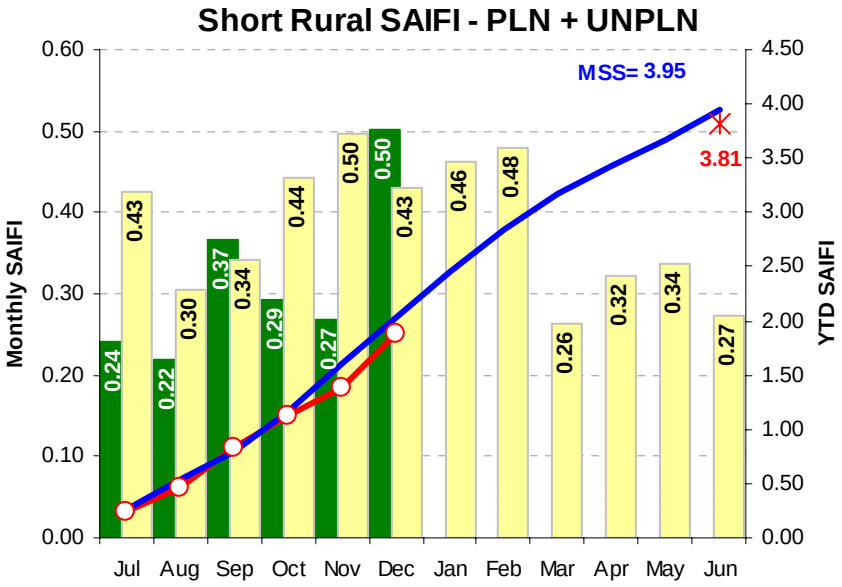
Currently, Short Rural feeders make up to 30 percent of Ergon Energy's distribution feeder network and supply about 55 percent of its customers.

The reasons for the marginally unfavourable reliability performance for the December quarter 2010 are the same as that set out for the Urban SAIDI performance in Section 6 of this report. However, it is important to note that Ergon Energy's annual Short Rural SAIDI performance, prior to the extreme weather conditions in mid December 2010, was projected to meet the annual MSS. Further, the overall year to date Short Rural SAIDI at the end of the December quarter 2010, has improved by 21 percent compared to the corresponding period of 2009-10. In addition, planned year to date Short Rural SAIDI has improved by 65 percent compared to the corresponding period in 2009-10.

For comparison purposes, Figure 4 on page 8 demonstrates the improvement on overall SAIDI at the end of the December quarter for both 2009-10 and 2010-11.

For a full list of the initiatives being undertaken by Asset Management to improve Short Rural SAIDI reliability performance, please refer to Section 4 *Reliability and Quality Improvement Initiatives* section of this report.

9. Short Rural SAIFI Performance



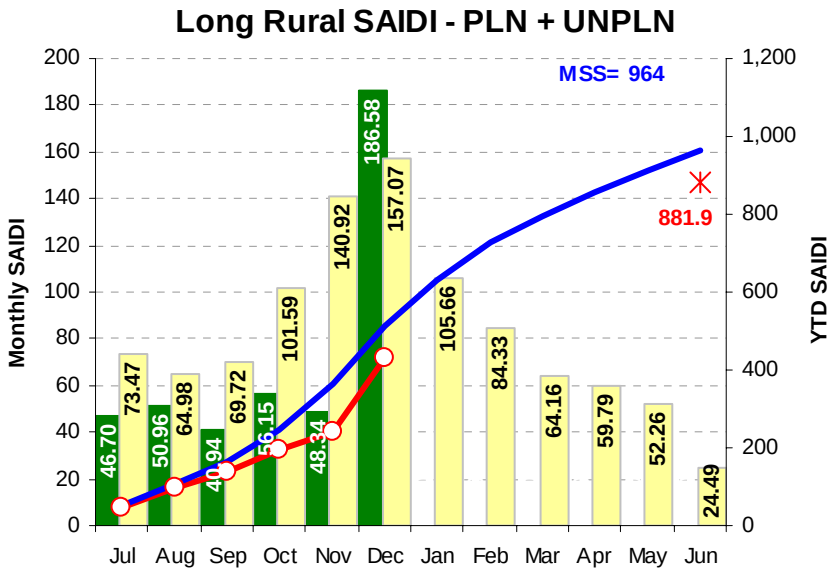
The year to date reliability performance result for Short Rural SAIFI is favourable to the 2010-11 seasonalised MSS target at the end of the December quarter 2010. Further, the projected year end reliability performance for 2010-11 for Short Rural SAIFI (3.81) is projected to remain favourable to the annual MSS (3.95) by a margin of 0.14.

The overall Short Rural year-to-date SAIFI performance at the end of the December quarter 2010, on average, has improved by 23 percent compared to the corresponding period in 2009-10. In addition, planned Short Rural year to date SAIFI has improved by 57 percent compared to the corresponding period in 2009-10.

For comparison purposes, Figure 5 on page 8 demonstrates the improvement on overall SAIFI at the end of the December quarter for both 2009-10 and 2010-11.

For a full list of the initiatives being undertaken by Asset Management to improve Short Rural SAIFI reliability performance, please refer to Section 4 *Reliability and Quality Improvement Initiatives* section of this report.

10. Long Rural SAIDI Performance



The year-to-date reliability performance result for Long Rural SAIDI is favourable to the 2010-11 seasonalised MSS target at the end of the December quarter 2010. Further, the projected year-end reliability performance for 2010-11 for Long Rural SAIDI (881.9) continues to remain favourable to the annual MSS (964) by 82.1 minutes.

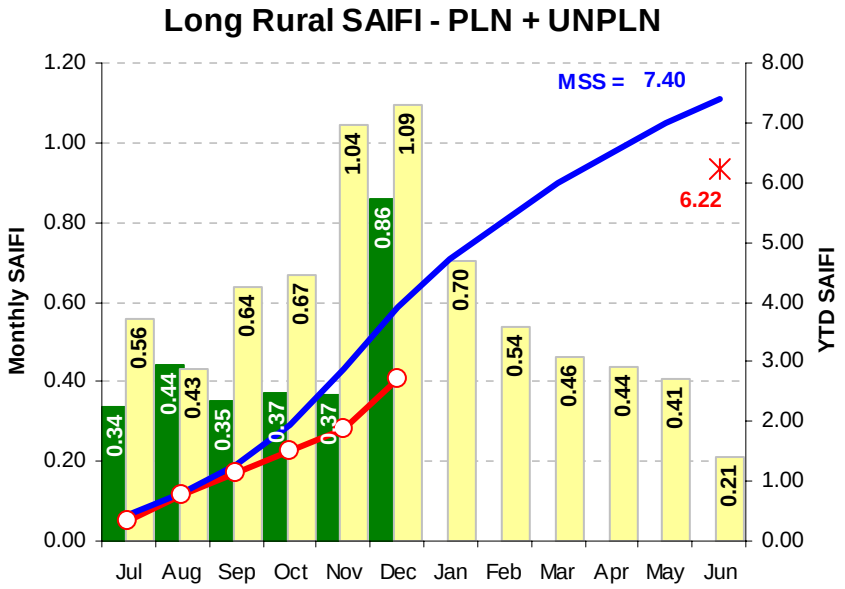
Currently, Long Rural feeders make up to 67 percent of Ergon Energy's distribution feeder network and supply about 12 percent of its customers.

The overall Long Rural year-to-date SAIDI performance at the end of the December quarter 2010 has substantially improved (28 percent improvement) in comparison to the corresponding period in 2009-10. In addition, planned Long Rural year to date SAIDI has improved by 59 percent compared to the corresponding period in 2009-10.

For comparison purposes, Figure 4 on page 8 demonstrates the improvement on overall SAIDI from the December quarter for both 2009-10 and 2010-11.

For a full list of the initiatives being undertaken by Asset Management to improve Long Rural SAIDI reliability performance, please refer to Section 4 *Reliability and Quality Improvement Initiatives* section of this report.

11. Long Rural SAIFI Performance



The year to date reliability performance result for Long Rural SAIFI is favourable to the 2010-11 seasonalised MSS target at the end of the December quarter 2010. Further, the projected year end reliability performance for 2010-11 for Long Rural SAIFI (6.22) is favourable to the annual MSS (7.40) by 1.18.

The overall Long Rural year to date SAIFI performance at the end of the December quarter 2010, has improved by 38 percent compared to the corresponding period in 2009-10. In addition, planned Long Rural year to date SAIFI has improved by 60 percent compared to the corresponding period in 2009-10.

For comparison purposes, Figure 5 on page 8 demonstrates the improvement on overall SAIFI from the December quarter for both 2009-10 and 2010-11.

For a full list of the initiatives being undertaken by Asset Management to improve Long Rural SAIFI reliability performance, please refer to Section 4 *Reliability and Quality Improvement Initiatives* section of this report.

Please direct queries or feedback on this report to:

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