Minimum Service Standards End of Year Projection Report

July - September 2010

Revised 19 April 2011

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 not addressed in this report, however will be included in future quarterly reports to the QCA.

1. Executive Summary

During the July-September 2010 Quarter, almost all of Queensland experienced higher than average rainfall, with large areas of Queensland experiencing record high rainfalls in September 2010. Much of this rainfall was the result of unseasonably early severe thunderstorm and lightning activity, which consequently impacted Ergon Energy's unplanned outage performance.

Despite these unusually wet conditions, Ergon Energy's cumulative actual reliability performance for July and August 2010 were generally at or better than the cumulative seasonalised Minimum Service Standards (MSS) for those months. However, the early severe thunderstorm activity during September 2010 gave rise to cumulative reliability performance for three of the six reliability measures that was worse than the cumulative seasonalised MSS for the July-September 2010 Quarter. 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 quarter last year as shown in Figure 7 on page 9.

By contrast, Ergon Energy's planned outage performance during the July-September 2010 Quarter 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.

In addition, 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.

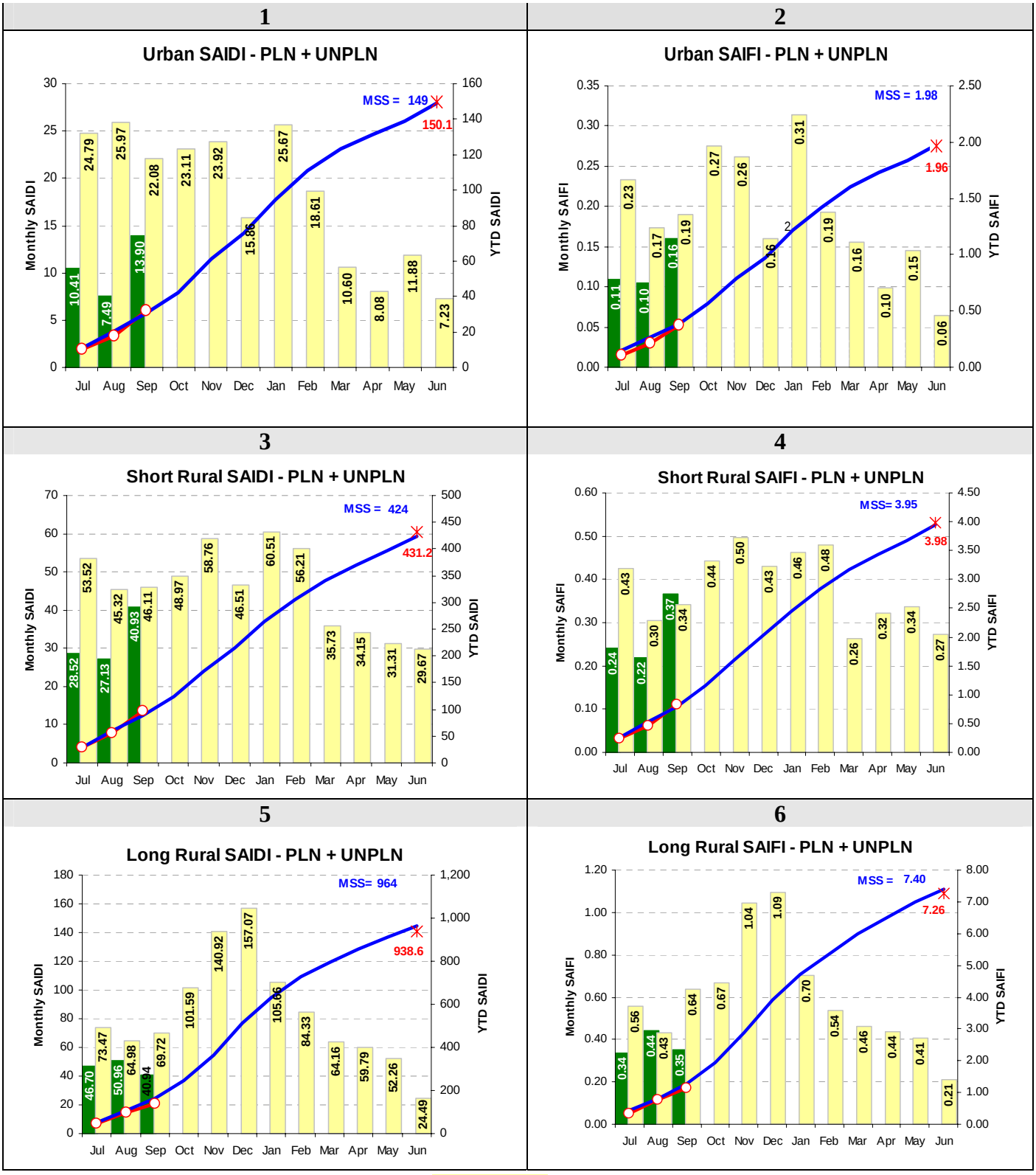
In the AER's recent Distribution Determination[1], Ergon Energy's capital expenditure allowance for Reliability and Quality Improvement investments for the 2010-15 regulatory control period was reduced by $28 million to $107 million (Nominal). To maximize the reliability outcomes in the early years of 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 2010-11 Reliability and Quality budget to $30 million, significantly higher than the $18.5 million approved by the AER.

Finally, it is important to note that in the two months since the completion of the July-September 2010 Quarter, despite wetter than normal conditions prevailing across Queensland, Ergon Energy's reliability performance has improved, with current projections (as at the end of November 2010) indicating that Ergon Energy is likely to achieve all six MSS by the end of 2010-11. This outcome is subject Queensland experiencing typical weather conditions for the remainder of 2010-11, subsequently giving rise to reliability performance for the remainder of the financial year that aligns with the seasonalised MSS monthly totals.

Figure 1 - Year-to-Date Performance as at 30 September 2010



2. Weather Conditions Analysis

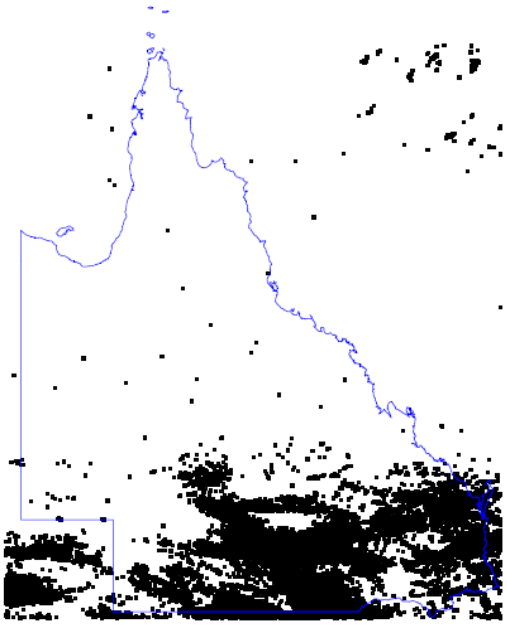
The weather conditions during the July-September 2010 Quarter featured higher than average rainfalls and the wettest September on record for Queensland. By comparison, the same quarter of the previous year was the hottest and third driest on record. Significant and unseasonal thunder storms and lightning activity occurred across the state in September 2010.

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

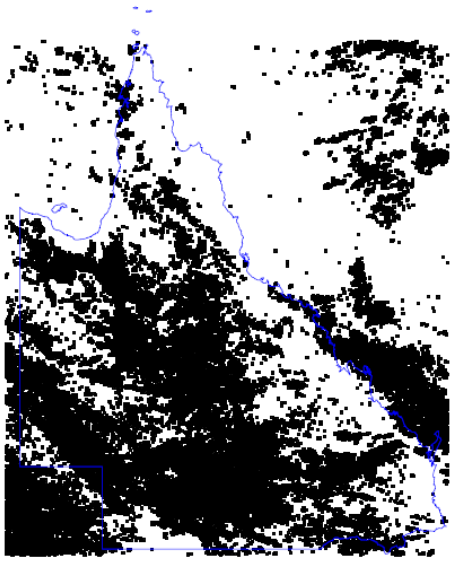
Figure 3 on page 7 shows the location and intensity of rainfall in Queensland for the July-September quarter this year compared to the same quarter in 2009.

The combination of storm activity, including lightning strikes, and rainfall has impacted on Ergon Energy's unplanned outage performance.

Figure 2 – Jul-September Lightning Strike Maps for 2009 and 2010



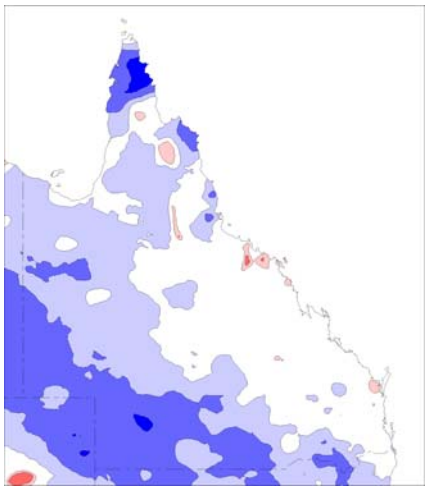
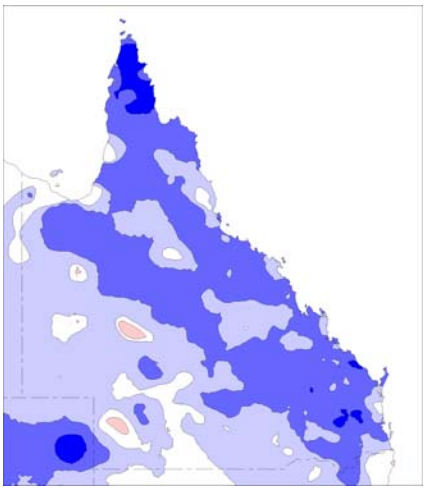
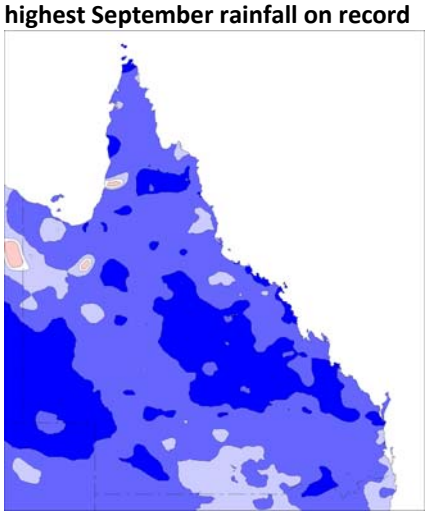
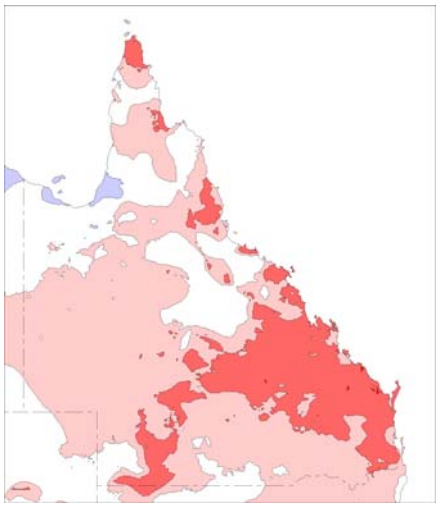
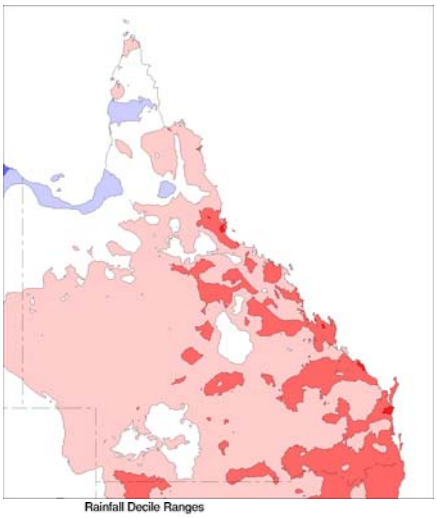
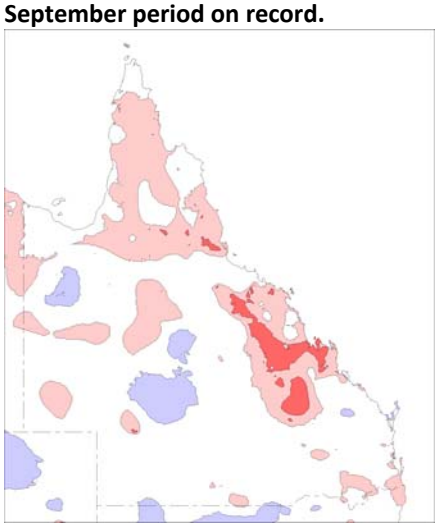
July-September 2009

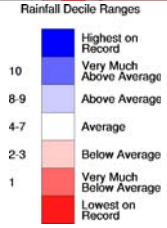


July-September 2010

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

Figure 3 – Bureau of Meteorology Monthly Weather Review Reports

	July	August	September
2010	**Above average rainfall over the west, southern interior and tropical districts.**	**Above average rainfall over most of Queensland**	• Wettest September on record for Queensland **• 24% of the state (by area) had highest September rainfall on record**
			
2009	**Lower than expected rainfall for July**	**Record high August daily maximum temperatures over 55% of Queensland**	• An extraordinary duststorm event during the 22nd and 23rd. • Hottest and driest September since 2003. **• Hottest and third driest July to September period on record.**
			



3. Current status of performance against Minimum Service Standards

In the July-September 2010 Quarter, Ergon Energy has made significant progress on improving its reliability performance for all three feeder categories (Urban, Short Rural and Long Rural) compared to 2009-10 as shown in Figures 3 and 4 below.

At an aggregate level (i.e. before splitting into feeder categories), overall whole-of-network SAIDI and SAIFI have improved by almost 36 percent and 26 percent respectively compared to the same quarter last year.

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

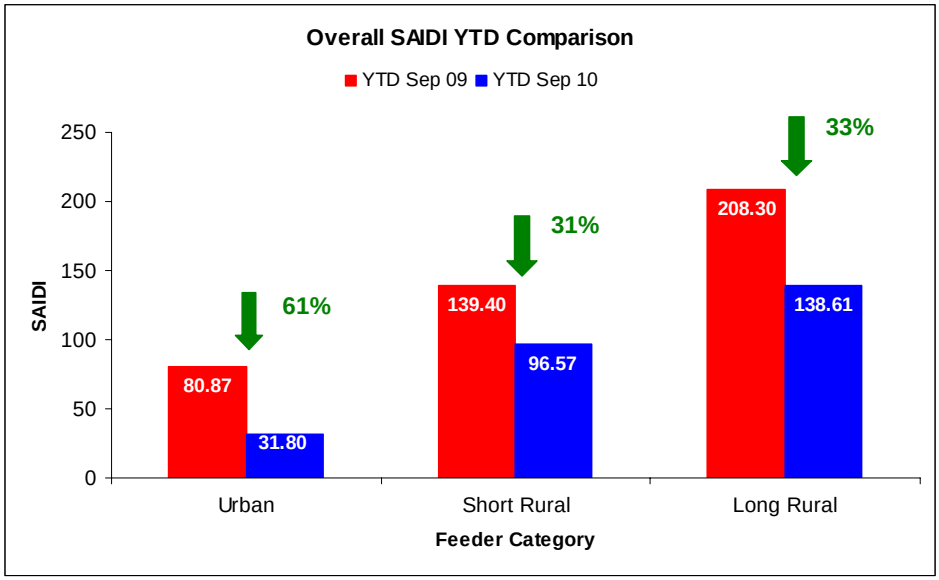
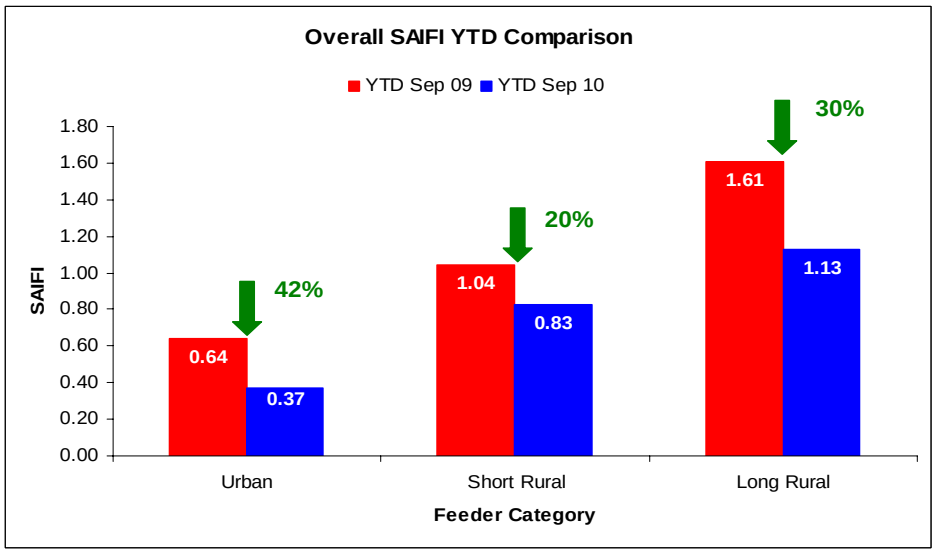


Figure 5 – Overall SAIFI Year To Date Comparison – 2009-10 vs. 2010-11



The safety related suspension of Live Line working in February 2009 compounded by operating bans on 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. However the reinstatement of live line working 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

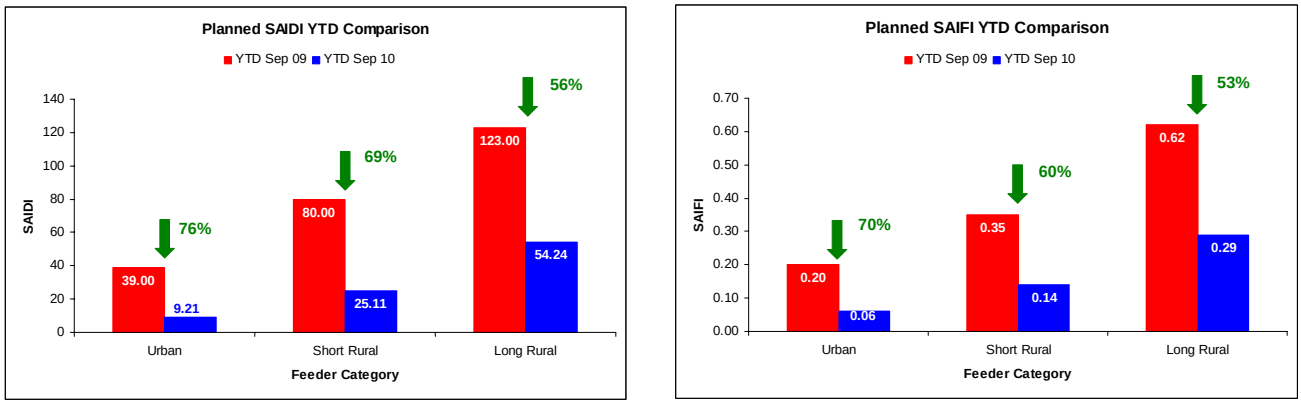
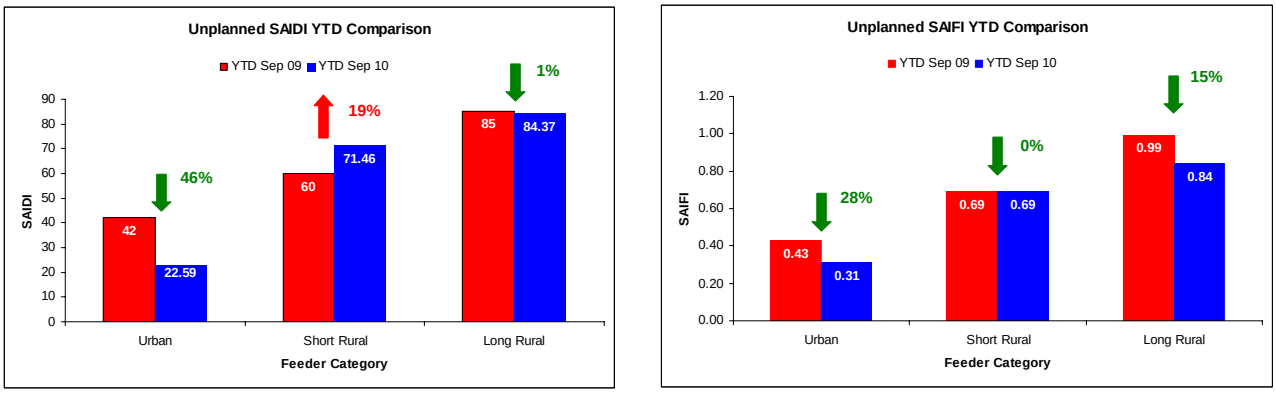


Figure 7 below shows that the year-to-date unplanned performance results have improved for all the measures with the exception of Short Rural SAIDI. This is because the adverse weather conditions towards the end of September 2010 have had a bigger impact on the unplanned performance of Short Rural feeders compared to other feeder categories. The overall 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.

Ergon Energy's cumulative actual reliability performance for July and August 2010 were generally at or better than the cumulative seasonalised MSS for those months. However, unseasonably early storms and record rain during September 2010 gave rise to cumulative reliability performance for three of the six reliability measures

that was worse than the cumulative seasonalised MSS for the September quarter 2010. This consequently impacted the end of year projections for those three measures. Specifically, as at 30 September 2010:

- Urban SAIDI performance (150.1 minutes) is projected to be slightly higher than the Urban SAIDI MSS for 2010-11 of 149 minutes i.e. exceed by 1.1 of a minute (0.7%);
- Short Rural SAIDI performance (431.2 minutes) is projected to be slightly higher than the Short Rural SAIDI MSS of 424 minutes (1.4%); i.e. exceed by 7.2 of a minute (1.7%);
- Short Rural SAIFI performance (3.98) is projected to be slightly higher than the Short Rural SAIFI MSS of 3.95 i.e. exceed by .03 (0.7%).

The summer storm season considerably impacts Ergon Energy's end of year reliability performance results, as evidenced by historical performance trends and the fact that most of the Major Event Days experienced by Ergon Energy occur during the December to March period.

Given the volatility of the prevailing weather conditions during the summer storm and wet season and the significant impact these conditions have on annual reliability performance, Ergon Energy advocates considerable caution in drawing conclusions on the projected year-end reliability performance results based only on the September quarter 2010 results. To emphasis this further, the latest projections of reliability performance based on the most recent data available at the time this report was prepared (i.e. data as at the end of November 2010) indicates that Ergon Energy is on track to meet all six of its MSS at the end of 2010-11.

Consequently, Ergon Energy does not believe MSS will be missed based on the first quarter results.

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 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 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 to manage its operations in the context of the Australian Energy Regulator'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)
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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)

In the AER's recent Distribution Determination[2], 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 period, Ergon Energy has therefore increased its 2010-11 Reliability and Quality budget to $30 million, significantly higher than the $18.5 million approved by the AER.

A comprehensive list of the 42 strategies and initiatives being undertaken are set out in the sections below.

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).

[2] 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.

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 quantify the reliability performance improvements realised by each initiative set out below. This is because reliability performance is influenced by a combination of a variety of factors, many of which (as outlined above) take a number of years to be fully realised. Asset related reliability improvements enhance the underlying performance, but not necessarily compared to last years performance. Actual annual reliability performance is statistically driven and varies around an underlying trend. 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 realized 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 September 2010.

4.1 Asset Related Initiatives to improve both SAIDI and SAIFI

Completed as of September 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.

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** are being 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

7. ## [3] **Autoreclose** is currently being progressively installed in Substations in the Townsville region to prevent transient outages (from which the network can automatically recover) becoming permanent outages (which require crews to manually rectify). The installation of autoreclose capability will be completed by the summer of 2011-12, although autoreclose has already been installed on some urban and short rural feeders on time for the summer of 2010-11. The key reliability impact as a result of these auto-reclosers is a reduction in the duration and frequency of permanent outages primarily for Urban feeders, but also for Short Rural Feeders;
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;
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, with 86km of conductor are targeted for replacement, with 20km replaced to date. Both HV and LV conductor is targeted, with HV conductor having the greatest impact on reliability;
10. ## A prioritised Condition Based Risk Management program of **subtransmission line refurbishment and replacement** is under way. This will ensure that the frequency of outages and SAIDI and SAIFI across all feeder types is minimized 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. 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. Subtransmission lines recently rebuilt include: Warwick 132kV line (partially completed) and the Pampas 33kV line (completed). A future program of subtransmission line replacements works is currently being scoped;
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 customer 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

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

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 ABSs 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;

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;
15. Ergon Energy continues to implement 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. Additional focus is being placed on **considering the impact of planned outages and mitigation measures** at the concept phase when scoping and estimating new works. 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;

Being progressed in September-December quarter 2010-11

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 developed to accelerate installation of ACRs on distribution feeders currently without any ACRs installed;
19. ## One particular application of ACRs being prioritised for Short Rural and some Long Rural feeders with customers in both urban and rural environments is the **installation of remotely controllable reclosers on the Urban-Rural boundary.** These devices will prevent outages on the rural section of the feeder leading to permanent outages of the urban customers. This program has been underway for some time with Ergon Energy now focusing on accelerating this program to complete all opportunities. This initiative will reduce the impact, duration and frequency of outages (SAIDI and SAIFI) on Short Rural feeders
20. Another component of the ACR Strategy is the installation of **reclosers on Urban feeders**. This will reduce the impact, duration and frequency of outages (SAIDI and SAIFI) 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;
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; 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;

To be progressed in future quarters of 2010-11

24. ## A number of circuit breaker failures have results in large outages, and as a result, Ergon Energy has initiated a program of work to **replace circuit breakers in zone substations** based on a Condition Based Risk Management approach. In addition, a maintenance program for HLC type circuit breakers is also underway following investigation of a major failure. 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; and
26. ## Ergon Energy has identified that improved legacy subtransmission system design can reduce outages due to subtransmission 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 subtransmission voltage switchyards include Warwick 132kV bus (underway) and Cannonvale 66kV bus (being issued);

4.2 Asset Related Initiatives to Improve Response Time and SAIDI

Completed as at September 2010

Note: some of these initiatives are ongoing in Ergon Energy and/or will be progressed during the future quarters. Initiatives with completed milestones in September 10 have been listed below.

27. Ergon Energy has **developed appropriate additional measures, reporting and planned performance assessment/forecast tools** (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

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; and
29. ## A **SCADA Acceleration Strategy** is currently being implemented with a view to completion by the June 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 September 2010, 14 of the sites have been commissioned with installation completed for 8 and designs completed for 20. The key reliability improvement will be reduction in SAIDI predominantly for Urban and Short Rural Feeders, but also for Long Rural Feeders.

Being progressed in the September- December quarter 2010-11

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. Trial units will be 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; and

31. ## Ergon Energy has identified opportunities for **additional feeder ties on the distribution network** to reduce restoration time following outages. A strategy to accelerate deployment is in a developmental stage and local opportunities are being implemented. This strategy will 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 September 2010

32. Ergon Energy has **reviewed its on call resource levels** in all areas and adjusted the levels according to the frequency and severity of its unplanned outage performance, with some areas having doubled the number of resources attending faults over the summer 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 Network Control Centre 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 by System Operations Engineers as an independent facilitator and subject matter expert purposefully increasing the Network Control Centre (and the broader businesses) understanding of the 'cost' associated with unplanned outage management and the customer service benefits associated with improving decision-making during unplanned outages. As a flow on consideration, Ergon Energy is implementing a program of updating the High Voltage feeder profile after each major event aimed at capturing the learnings arising from each outage, and increasing the speed at which decisions are made to operate the network in a safe and secure manner.

Ongoing

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

Being progressed in the December quarter 2010-11

36. To minimise the impact on system security, **not 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 now reviews 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 is conducting a review of the current OOS remediation processes with a view to increasing Network Operations' control of the prioritisation of remediation work. 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; and

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 10 years and is now due for review. Consequently, Ergon Energy is embarking on a review of sections of the "Operate the Network" procedural documentation 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, we expect benefits associated with this investment to be delivered, including a positive influence on reliability improvement during the 2013 to 2015 period.

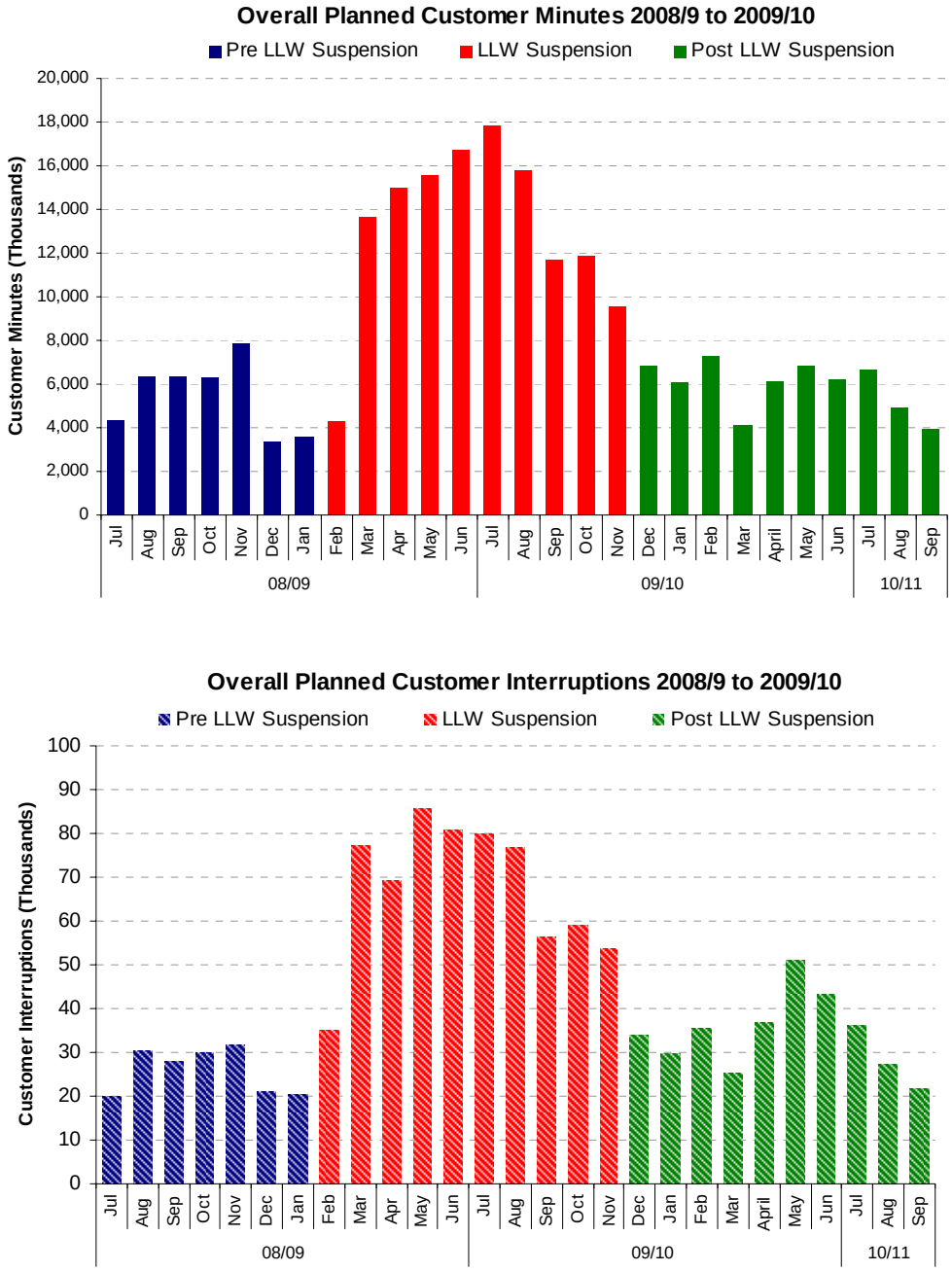
4.3.2 Planned Outage Management

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

Completed as at September 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-energized 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 reviewed and re-instated 82% of its Live Line Work safety procedures** by November 2010. While some live line tasks practiced previously will not be reinstated due to the new standard, it is planned to increase both our 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 our 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 High Voltage 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 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; and

42. Through the use of **Google mapping systems** we are also developing an approach that provides spatial representation with appropriate overlays of our network schematics to show planned work locations to facilitate more effective forward planning of outages. Further, we 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.

5. Reliability Improvement Investment

In recent years Ergon Energy's expenditure directly on reliability works has been constrained by investments in excess of regulatory allowances into regulatory and demand driven capital works including new customer connections, addressing system supply security and capacity constraints and critical aged assets issues. However, for the next five years, expenditure on reliability improvement projects has been ramped up consistent with initiatives being implemented to address network performance and ensure conformance with MSSs for 2010-11 and future years in this regulatory control period.

Table 1 below shows the **year-to-date (end of September 2010) expenditure** and **next quarter (October-December 2010 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.

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

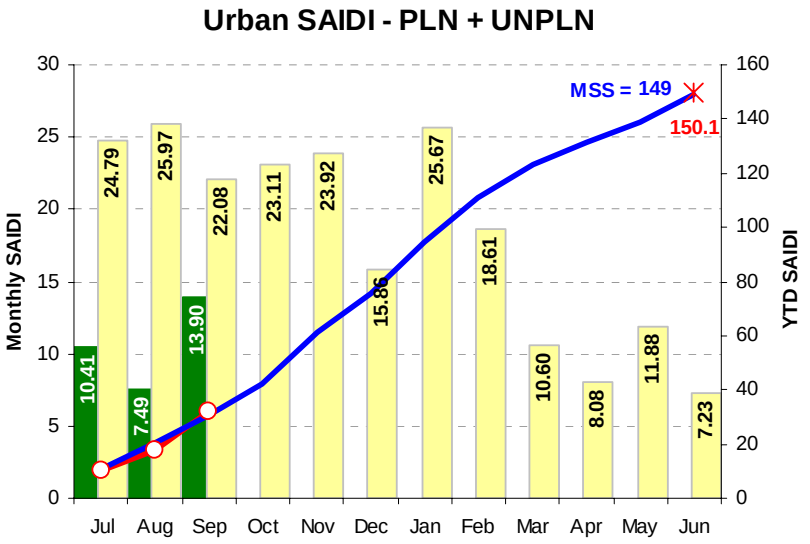
RELIABILITY IMPROVEMENT WORKS		
Asset Replacement	YTD Actual Costs	$ 3,254,383
	YTD POW Budget	$ 2,690,473
	2nd Qtr POW Budget	$ 4,544,730
	Total 10/11 Budget	$ 12,438,385
Augmentation	YTD Actual Costs	$ 7,011,666
	YTD POW Budget	$ 6,888,467
	2nd Qtr POW Budget	$ 3,306,311
	Total 10/11 Budget	$ 33,977,612
Other System Capex	YTD Actual Costs	$ 1,558,621
	YTD POW Budget	$ 1,756,912
	2nd Qtr POW Budget	$ 3,683,495
	Total 10/11 Budget	$ 12,664,845
Reliability Improvement	YTD Actual Costs	$ 4,470,932
	YTD POW Budget	$ 3,596,915
	2nd Qtr POW Budget	$ 5,928,461
	Total 10/11 Budget	$ 29,862,835
Total Sum of YTD Actual Costs		$ 16,295,601
Total Sum of YTD Budget		$ 14,932,766
Total Sum of 2nd Qtr POW Budget		$ 17,462,997
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 the period 1 July 2010 to 30 September 2010 for Urban SAIDI marginally exceeds the 2010-11 seasonalised MSS target for the September quarter 2010. The year-to-date September 2010 results plus the seasonalised target line projection year-end reliability performance for 2010-11 for Urban SAIDI (149.8 minutes) exceeds the MSS (149 minutes) by a margin of 0.8 minutes. However, it should be noted that in the two months since the completion of the July-September 2010 Quarter, despite wetter than normal conditions prevailing across Queensland, Ergon Energy's reliability performance has improved, with current projections (as at the end of November 2010) indicating that Ergon Energy is likely to achieve all six MSS by the end of 2010-11.

Urban feeders make up to 3 percent of Ergon Energy's distribution feeder network and supply about 33 percent of its customers.

The reliability performance for the September quarter 2010 was impacted by the abnormal weather conditions experienced at the end of September 2010. Specifically, several large scale electrical storms occurred in Ergon Energy's central supply region, and as a whole, Queensland's rainfall was 270 percent higher than the historical September averages.

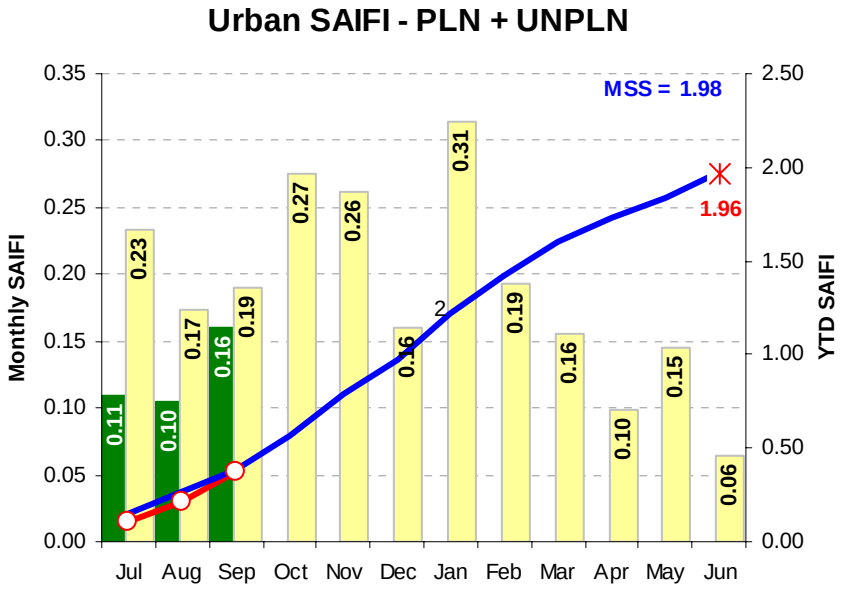
The overall Urban SAIDI year to date performance for the September quarter 2010 has substantially improved (61 percent improvement) in comparison to the corresponding quarter of 2009-10. In addition, planned Urban year to date SAIDI has improved by 77 percent compared to the corresponding quarter in 2009-10.

For comparison purposes, Figure 4 on page 8 demonstrates the improvement on overall SAIDI from the September 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 September 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 September 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 the period 1 July 2010 to 30 September 2010 for Urban SAIFI is favourable to the 2010-11 seasonalised MSS target for the September quarter 2010. Further, the projected year end reliability performance for 2010-11 for Short Rural SAIFI (1.96) is tracking to be under the annual MSS (1.98) by a margin of 0.02.

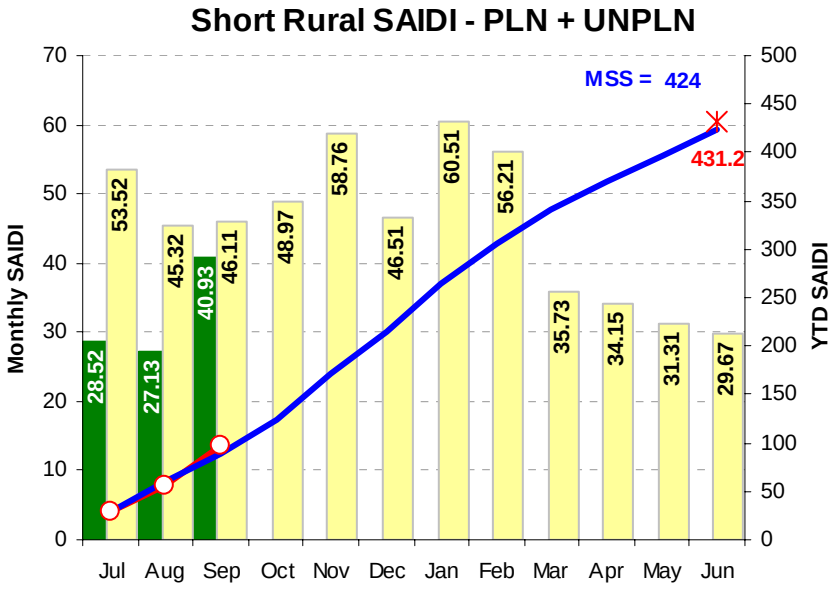
Urban feeders make up to 3 percent of Ergon Energy's distribution feeder network and supply about 33 percent of its customers.

The overall Urban SAIFI year to date performance for the September quarter 2010 has substantially improved (44 percent improvement) in comparison to the corresponding quarter of 2009-10. In addition, planned Urban year to date SAIFI has improved by 71 percent compared to the corresponding quarter in 2009-10.

For comparison purposes, Figure 5 on page 8 demonstrates the improvement on overall SAIFI from the September 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 the period 1 July 2010 to 30 September 2010 for Short Rural SAIDI marginally exceeds the 2010-11 seasonalised MSS target for the September quarter 2010. The projected year-end reliability performance for 2010-11 for Short Rural SAIDI (431.2 minutes) marginally exceeds the MSS (424 minutes) by a margin of 7.2 minutes. However, it should be noted that in the two months since the completion of the July-September 2010 Quarter, despite wetter than normal conditions prevailing across Queensland, Ergon Energy's reliability performance has improved, with current projections (as at the end of November 2010) indicating that Ergon Energy is likely to achieve all six MSS by the end of 2010-11.

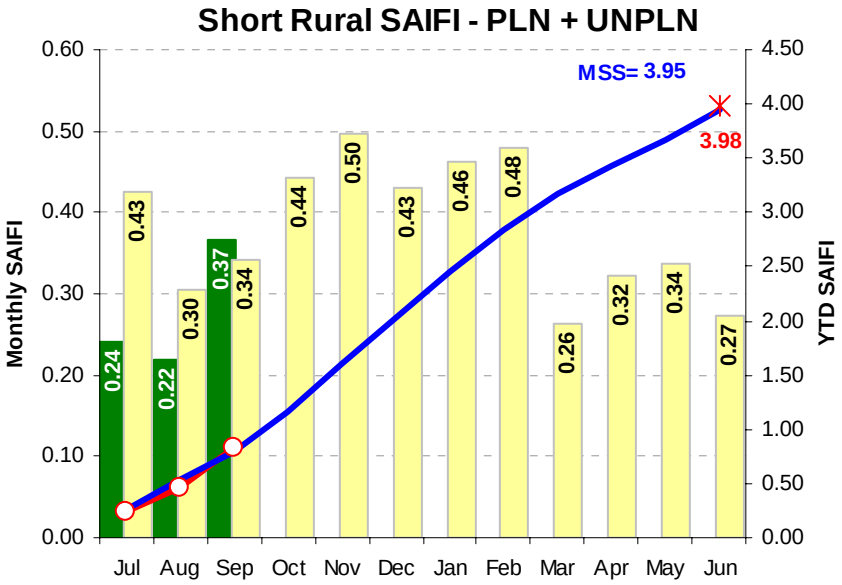
Currently, Short Rural feeders make up to 30 percent of Ergon Energy's distribution feeder network and supply about 55 percent of its customers.

The reasons for the marginally unfavourable reliability performance for the September quarter 2010 is the same as that set out for the Urban SAIDI performance. However, it is important to note that Ergon Energy's annual Short Rural SAIDI performance, prior to the unseasonal weather conditions in September 2010, was projected to meet the annual MSS. Further, the overall year to date Short Rural SAIDI for the September quarter 2010, on average, has improved by 32 percent compared to the corresponding quarter of 2009-10. In addition, planned year to date Short Rural SAIDI has improved by 68 percent compared to the corresponding quarter in 2009-10.

For comparison purposes, Figure 4 on page 8 demonstrates the improvement on overall SAIDI from the September 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



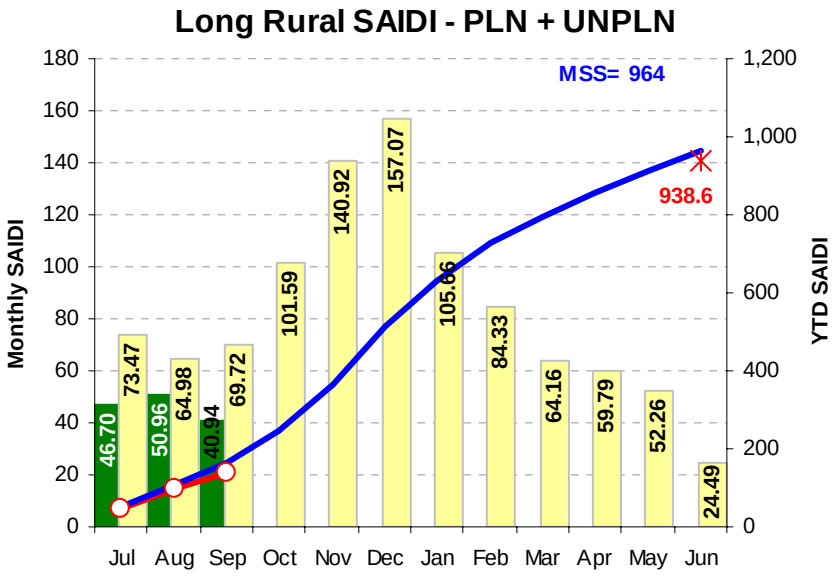
The year to date reliability performance result for the period 1 July 2010 to 30 September 2010 for Short Rural SAIFI marginally exceeds the 2010-11 seasonalised MSS target for the September quarter 2010. Further, the projected year end reliability performance for 2010-11 for Short Rural SAIFI (3.98) is projected to marginally exceed the annual MSS (3.95) by a margin of 0.03. However, it should be noted that in the two months since the completion of the July-September 2010 Quarter, despite wetter than normal conditions prevailing across Queensland, Ergon Energy's reliability performance has improved, with the most recent projections (as at the end of November 2010) indicating that Ergon Energy is likely to achieve all six MSS by the end of 2010-11.

The reasons for the unfavourable reliability performance for the September quarter 2010 is the same as that set out for the Urban SAIDI performance. However, it is important to recognise that the overall Short Rural year to date SAIFI performance for the September quarter 2010, on average, has improved by 21 percent compared to the corresponding quarter of 2009-10. In addition, planned Short Rural year to date SAIFI has improved by 60 percent compared to the corresponding quarter in 2009-10.

For comparison purposes, Figure 5 on page 8 demonstrates the improvement on overall SAIFI from the September 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 the period 1 July 2010 to 30 September 2010 for Long Rural SAIDI is favourable to the 2010-11 seasonalised MSS target for the September quarter 2010. Further, the projected year-end reliability performance for 2010-11 for Long Rural SAIDI (938.6) is favourable to the annual MSS (964) by 25.4 minutes.

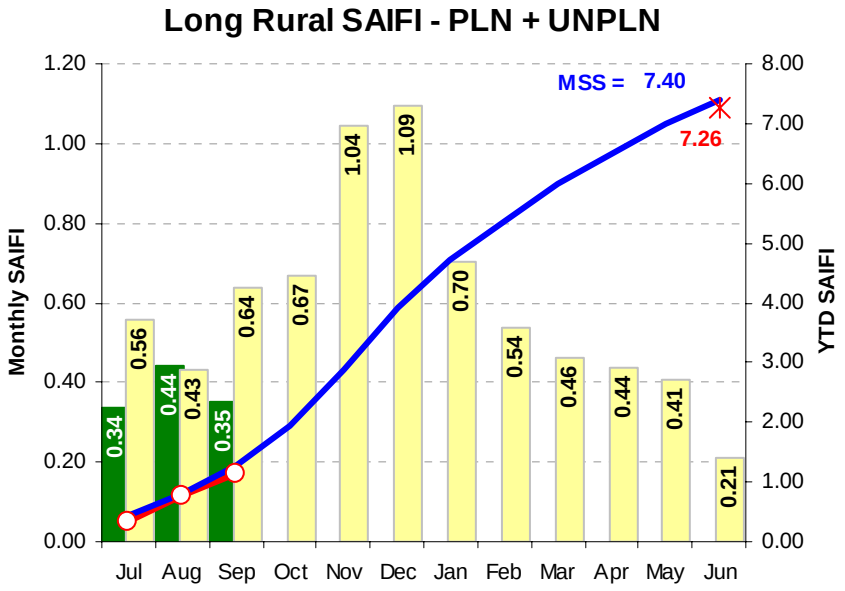
Currently, Long Rural feeders make up to 67 percent of Ergon Energy's distribution feeder network and supply about 12 percent of its customers.

The overall Long Rural year to date SAIDI performance for the September quarter 2010 has substantially improved (34 percent improvement) in comparison to the corresponding quarter of 2009-10. In addition, planned Long Rural year to date SAIDI has improved by 56 percent compared to the corresponding quarter in 2009-10.

For comparison purposes, Figure 4 on page 8 demonstrates the improvement on overall SAIDI from the September 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 the period 1 July 2010 to 30 September 2010 for Long Rural SAIFI is favourable to the 2010-11 seasonalised MSS target for the September quarter 2010. Further, the projected year end reliability performance for 2010-11 for Long Rural SAIFI (7.26) is favourable to the annual MSS (7.40) by 0.14.

The overall Long Rural year to date SAIFI performance for the September quarter 2010, on average, has improved by 32 percent compared to the corresponding quarter of 2009-10. In addition, planned Long Rural year to date SAIFI has improved by 53 percent compared to the corresponding quarter in 2009-10.

For comparison purposes, Figure 5 on page 8 demonstrates the improvement on overall SAIFI from the September 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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