Performance against minimum service standards (MSS)

Energex and Ergon Energy

2020–21 financial year

Queensland Government

This publication has been compiled by the Department of Energy and Public Works.

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Background

There are currently two Queensland distribution entities: Energex Limited (Energex) in South East Queensland and Ergon Energy Corporation Limited (Ergon Energy) in regional Queensland. Both entities operate distribution networks under Distribution Authorities issued to them by the Regulator under the *Electricity Act 1994* and administered by the Department of Energy and Public Works.

From 1 July 2014, as part of ongoing reforms to the Queensland electricity sector, the minimum service standards (MSS) of electricity distributors, and the requirement for them to report their performances against the MSS, were incorporated into their respective Distribution Authorities.

Prior to this date, the MSS and reporting requirements were contained within the Electricity Industry Code, and the reports were published online by the Queensland Competition Authority (QCA).

Minimum Service Standards

The conditions of the Distribution Authorities held by Energex and Ergon Energy require that they use their best endeavours to meet MSS in relation to the frequency and duration of electricity distribution outages. The MSS are put in place to ensure that Queensland electricity customers receive a minimum prescribed level of supply reliability. If a distributor does not meet its MSS limits, it must provide reasons for any failure and a proposal to improve its performance.

The MSS limits for Energex and Ergon Energy differ, with those set for Energex being more stringent. This reflects the differences in their distribution networks, and the environments in which they operate.

Under the conditions of their Distribution Authorities, each entity is required to report on its performance against MSS limits within two months of the end of each quarter. Once the June quarterly report of each entity is received, the Department of Energy and Public Works can ascertain whether the distributor has performed within its MSS limits for the financial year.

This report details the performance of Energex and Ergon Energy against the MSS limits set for the 2020–21 financial year.

Distribution Networks

The MSS reports are not intended to enable performance comparisons between Energex and Ergon Energy. Due to their very different operating environments and distribution network characteristics, any such comparison would be inappropriate. The MSS reports can, however, be used to gauge the year-on-year performance of each distributor.

The Energex distribution network supplies largely urbanised areas of South East Queensland. Ergon Energy's network is spread across the remainder of the state with a significant number of long, isolated feeders and lower customer densities. The individual prescribed MSS limits for each distribution entity reflect these network differences.

MSS requirements

The MSS requirements are set in relation to the frequency and duration of interruptions to the distribution services provided by Energex and Ergon Energy. An interruption includes any temporary unavailability of electricity supply to a customer associated with an outage of the electricity distribution network.

The MSS are average measures of performance across each distribution network (categorised by feeder type) excluding the impact of certain excluded events such as severe weather events. To ensure a low probability of exceeding their MSS limits in a particular year, distributors must aim to achieve a higher level of performance than the MSS limits. The MSS limits for each financial year are detailed in the Distribution Authority of each distribution entity.

There are six MSS limits for each distributor. Three MSS limits relate to the average duration of service interruptions and three to the average frequency of service interruptions. Reliability performance is expressed using the following measures:

a) ***System average interruption duration index*** **(SAIDI)** is the sum of all customer interruption durations (measured in minutes) divided by the total number of customers (averaged over the financial year) for each distributor; and

b) ***System average interruption frequency index*** **(SAIFI)** is the total number of customer interruptions, divided by the total number of customers (averaged over the financial year) for each distributor.

SAIDI and SAIFI performance is measured and reported based on the broad feeder categories of central business district (CBD), urban, short rural and long rural feeders. The MSS limits differ between feeder types, reflecting the performance that should reasonably be achieved on each type.

Some interruptions may be excluded by the distributors when reporting performance against MSS limits. Possible exclusions include interruptions commencing on a major event day, interruptions of one minute or less (momentary interruptions), interruptions resulting from a failure of the shared transmission grid, and interruptions caused by the failure of a customer's electrical installation. Interruptions resulting from a direction by a police officer or other authorised person who is exercising powers in relation to public safety are also excluded. A complete list of excluded interruptions is set out in the Distribution Authority of each distribution entity.

Major event days

A major event day is one where the daily SAIDI value exceeds a certain threshold, which is based on the distributor's historical reliability performance. Major event days are often associated with severe weather events that cause significant, widespread and prolonged customer supply interruptions. Major event days are excluded when assessing the performance of distributors against MSS limits.

Failure to perform within MSS limits

If a distributor exceeds the same MSS limit (i.e. SAIDI limit or SAIFI limit) for three financial years in a row, this is considered a 'systemic failure' and represents a contravention of the conditions of the entity's distribution authority. Under the *Electricity Act 1994*, any such contravention may incur disciplinary action such as the cancellation or suspension of a distribution authority and/or the imposition of a pecuniary civil penalty.

Summary of Energex performance

Performance against the MSS limits

Energex's reliability performance for 2020–21 was favourable to the MSS for all six performance measures.

Energex's SAIDI and SAIFI performance before and after exclusions, and its MSS limits for 2020–21 (as prescribed in its distribution authority) are presented in Tables 1 and 2.

Table 3 details the interruptions that Energex has excluded in determining performance against its SAIDI and SAIFI limits during 2020–21.

Energex reported eight major event days during 2020–21, these are detailed in Table 4.

Performance against the SAIDI limits

Table 1 Energex SAIDI performance (minutes)

	2018–19	2019–20	2020–21	SAIDI MSS limits 2020–21
	Total before exclusions			
CBD feeders	2.671	6.722	9.892	
Urban feeders	92.765	83.409	116.112	
Short rural feeders	322.151	205.409	325.180	
	Total net of exclusions			
CBD feeders	2.132	5.001	**8.071**	**15**
Urban feeders	70.575	70.473	**70.444**	**106**
Short rural feeders	178.883	159.195	**180.783**	**218**

Performance against the SAIFI limits

Table 2 Energex SAIFI performance (number of interruptions)

	2018–19	2019–20	2020–21	SAIFI MSS limits 2020–21
	Total before exclusions			
CBD feeders	0.0146	0.025	0.090	
Urban feeders	0.749	0.683	1.038	
Short rural feeders	1.7547	1.597	1.936	
	Total net of exclusions			
CBD feeders	0.0141	0.022	**0.085**	**0.15**
Urban feeders	0.6432	0.622	**0.637**	**1.26**
Short rural feeders	1.4423	1.346	**1.330**	**2.46**

Excluded interruptions

Table 3 Energex exclusions from MSS reporting for 2020–21

	Exclusions from SAIDI (minutes)	Exclusions from SAIFI (interruptions)
Interruption of a duration of one minute or less		
None in 2020–21		
Interruption resulting from load shedding due to a shortfall in generation		
None in 2020–21		
Interruption resulting from a direction by AEMO, a system operator or any other body exercising a similar function under the *Electricity Act 1994*, National Electricity Rules or National Electricity Law		
None in 2020–21		
Interruption resulting from automatic shedding of load under the control of under-frequency relays following the occurrence of a power system under-frequency condition described in the power system security and reliability standards		
	SAIDI	**SAIFI**
CBD feeder	0.0000	0.0000
Urban feeder	14.9265	0.2762
Short rural feeder	10.3313	0.1808
Interruption resulting from failure of the shared transmission grid		
	SAIDI	**SAIFI**
CBD feeder	0.0000	0.00000
Urban feeder	0.0112	0.00007
Short rural feeder	0.0244	0.00011
Interruption from direction by police officer or other authorised person in relation to public safety		
	SAIDI	**SAIFI**
CBD feeder	0.0000	0.0000
Urban feeder	0.0295	0.00015
Short rural feeder	0.0125	0.00006
Interruption to the supply of electricity on a distribution entity's supply network which commences on a major event day		
	SAIDI	**SAIFI**
CBD feeder	0.9832	0.0030
Urban feeder	30.3751	0.1224
Short rural feeder	133.4126	0.4222

Interruption caused by customer electrical installations		
	SAIDI	**SAIFI**
CBD feeder	0.8383	0.0017
Urban feeder	0.3254	0.0019
Short rural feeder	0.6157	0.0028
Total exclusions		
	SAIDI	**SAIFI**
CBD feeder	**1.8215**	**0.0047**
Urban feeder	**45.6678**	**0.4008**
Short rural feeder	**144.3967**	**0.6060**

Major event days

Table 4 – Major event details

Event Date/s	Event Description
25 October 2020	Severe thunderstorms in the South East corner, particularly impacting Brisbane South and Ipswich Lockyer.
31 October 2020	Severe thunderstorms in the South East corner, particularly impacting Gold Coast, Logan, and Springfield Lakes.
1 November 2020	Severe thunderstorms with hail that particularly impacted the Ipswich Lockyer area.
7 December 2020	Severe storm cells that particularly impacted the Sunshine Coast and Brisbane North areas.
14 December 2020	Severe storms along the SEQ coast with heavy rains and strong winds, particularly impacting Brisbane South, followed by Gold Coast, Sunshine Coast, and Brisbane North
2 March 2021	Severe storm cell that primarily impacted customers in the Brisbane Central and Gold Coast areas
11 May 2021	Severe thunderstorms that particularly impacted the Ipswich Lockyer area.
12 May 2021	Severe weather primarily impacting the Sunshine Coast area

Summary of Ergon Energy performance

Performance against the MSS limits

Ergon Energy's reliability performance for the 2020–21 regulatory year was favourable to 3 of the 6 MSS performance measures. The Urban, Short rural and Long rural feeders exceeded SAIDI limits over the 2020–21 period.

Ergon Energy's SAIDI and SAIFI performance before and after exclusions and its MSS limits for 2020–21 as prescribed in its distribution authority are presented in Tables 5 and 6.

Table 7 details the interruptions that Ergon Energy has excluded in determining performance against its SAIDI and SAIFI limits during 2020–21.

Ergon Energy reported one major events during 2020–21, these are detailed in Table 8.

Performance against the SAIDI limits

Table 5 Ergon Energy SAIDI performance (minutes)

	2018–19	2019–20	2020–21	SAIDI MSS limits 2020–21
	Total before exclusions			
Urban feeders	515.0658	232.6815	360.8330	
Short rural feeders	523.3031	447.5339	573.9934	
Long rural feeders	1170.1658	1182.3328	1117.0652	
	Total net of exclusions			
Urban feeders	147.7199	224.9419	**236.2912**	**149**
Short rural feeders	409.6936	422.8796	**460.6476**	**424**
Long rural feeders	1017.9883	1056.0088	**1048.2913**	**964**

Performance against the SAIFI limits

Table 6 Ergon Energy SAIFI performance (number of interruptions)

	2018–19	2019–20	2020–21	SAIFI MSS limits 2020–21
	Total before exclusions			
Urban feeders	1.5107	1.8888	1.8367	
Short rural feeders	3.5250	3.3369	3.4979	
Long rural feeders	6.4706	6.8946	6.3367	
	Total net of exclusions			
Urban feeders	1.2966	1.7985	**1.6239**	**1.98**
Short rural feeders	3.1412	3.1596	**3.1962**	**3.95**
Long rural feeders	5.8625	6.4575	**5.9783**	**7.40**

Excluded interruptions

Table 7 Ergon Energy exclusions from MSS reporting for 2020–21

	Exclusions from SAIDI (minutes)	Exclusions from SAIFI (interruptions)
Interruption of a duration of one minute or less		
None in 2020–21		
Interruption resulting from load shedding due to a shortfall in generation		
	SAIDI	**SAIFI**
Urban feeder	2.4578	0.0725
Short rural feeder	6.3814	0.1774
Long rural feeder	14.1128	0.2786
Interruption resulting from a direction by AEMO, a system operator or any other body exercising a similar function under the *Electricity Act 1994*, National Electricity Rules or National Electricity Law		
None in 2020–21		
Interruption resulting from automatic shedding of load under the control of under-frequency relays following the occurrence of a power system under-frequency condition described in the power system security and reliability standards		
None in 2020–21		
Interruption resulting from failure of the shared transmission grid		
	SAIDI	**SAIFI**
Urban feeder	7.0411	0.0204
Short rural feeder	2.9333	0.0122
Long rural feeder	8.0453	0.0288
An interruption resulting from a failure of transmission connection assets except where the interruptions were due to actions, or inactions, of the distribution entity that are inconsistent with good industry practice or inadequate planning of transmission connections and the distribution entity is responsible for transmission connection planning		
	SAIDI	**SAIFI**
Urban feeder	0.0000	0.0000
Short rural feeder	0.1068	0.0056
Long rural feeder	0.0000	0.0000
Interruption from direction by police officer or other authorised person in relation to public safety		
	SAIDI	**SAIFI**
Urban feeder	13.8343	0.0371
Short rural feeder	1.9646	0.0299
Long rural feeder	2.6073	0.0132

Interruption to the supply of electricity on a distribution entity's supply network which commences on a major event day		
	SAIDI	**SAIFI**
Urban feeder	101.1285	0.0817
Short rural feeder	101.9249	0.0763
Long rural feeder	43.9836	0.0376
Interruption caused by customer electrical installations		
	SAIDI	**SAIFI**
Urban feeder	0.0798	0.0009
Short rural feeder	0.0347	0.0001
Long rural feeder	0.0246	0.0001
Total exclusions		
	SAIDI	**SAIFI**
Urban feeder	**124.5418**	**0.2128**
Short rural feeder	**113.3458**	**0.3017**
Long rural feeder	**68.7739**	**0.3584**

Major event days

Table 8 – Major event details

Event Date	Event Details
1 March 2021	A result of bush fires in Stanthorpe.