Performance against minimum service standards (MSS)

Energex and Ergon Energy

2021–22 financial year

Queensland Government

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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 2021–22 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 2021–22 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 2021–22 (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 2021–22.

Energex reported six major event days during 2021–22, these are detailed in Table 4.

Performance against the SAIDI limits

Table 1 Energex SAIDI performance (minutes)

	2019–20	2020–21	2021–22	SAIDI MSS limits 2021–22
	Total before exclusions			
CBD feeders	6.722	9.892	52.52680	
Urban feeders	83.409	116.112	250.93590	
Short rural feeders	205.409	325.180	423.15766	
	Total net of exclusions			
CBD feeders	5.001	8.071	**4.91007**	**15**
Urban feeders	70.473	70.444	**80.38472**	**106**
Short rural feeders	159.195	180.783	**202.34889**	**218**

Performance against the SAIFI limits

Table 2 Energex SAIFI performance (number of interruptions)

	2019–20	2020–21	2021–22	SAIFI MSS limits 2021–22
	Total before exclusions			
CBD feeders	0.025	0.090	0.10326	
Urban feeders	0.683	1.038	0.78516	
Short rural feeders	1.597	1.936	1.70401	
	Total net of exclusions			
CBD feeders	0.022	0.085	**0.07164**	**0.15**
Urban feeders	0.622	0.637	**0.64747**	**1.26**
Short rural feeders	1.346	1.330	**1.44176**	**2.46**

Excluded interruptions

Table 3 Energex exclusions from MSS reporting for 2021–22

	Exclusions from SAIDI (minutes)	Exclusions from SAIFI (interruptions)
Interruption of a duration of three minute or less		
None in 2021–22		
Interruption resulting from load shedding due to a shortfall in generation		
	SAIDI	**SAIFI**
CBD feeder	Nil	Nil
Urban feeder	0.00002	Nil
Short rural feeder	0.01690	0.00490
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 2021–22		
Interruption resulting from automatic load shedding due to the operation of under-frequency relays following the occurrence of a power system under-frequency condition		
None in 2021–22		
Interruption resulting from failure of the shared transmission grid		
	SAIDI	**SAIFI**
CBD feeder	Nil	Nil
Urban feeder	1.43832	0.00171
Short rural feeder	18.52816	0.00577
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		
None in 2021–22		
Any interruption to the supply of electricity on a distribution entity's supply network which commences on a major event day		
	SAIDI	**SAIFI**
CBD feeder	0.00099	0.00025
Urban feeder	18.77030	0.06846
Short rural feeder	61.83426	0.15878

An interruption caused by a customer's electrical installation, a customer's request to be disconnected to isolate their installation, or failure of that electrical installation, if power is still available at the point of supply		
	SAIDI	**SAIFI**
CBD feeder	1.76936	0.00148
Urban feeder	0.44836	0.00374
Short rural feeder	0.65642	0.00267
An interruption caused or extended by a direction from a police officer or another authorised person exercising powers in relation to public safety, provided that a fault in, or the operation of, the network did not cause, in whole or in part, the event giving rise to the direction.		
	SAIDI	**SAIFI**
CBD feeder	45.84638	0.02989
Urban feeder	149.89419	0.06379
Short rural feeder	139.77303	0.09013
Total exclusions		
	SAIDI	**SAIFI**
CBD feeder	**47.61673**	**0.03162**
Urban feeder	**170.55118**	**0.13769**
Short rural feeder	**220.80877**	**0.26225**

Major event days

Table 4 – Major event details

Event Date/s	Event Description
30 September 2021	Severe thunderstorms in the Brisbane South and Brisbane Central areas
1 February 2022	Severe thunderstorms primarily in the Brisbane South area
18 February 2022	Severe thunderstorms and vegetation in the Brisbane South and Gold Coast areas
26 February 2022	Thunderstorms and vegetation in the Sunshine Coast area
27 February 2022	Severe thunderstorms and vegetation primarily in the Brisbane Central and Brisbane North areas
3 March 2022	Widespread thunderstorms primarily in the Sunshine Coast, Ipswich Lockyer, and Brisbane areas

Summary of Ergon Energy performance

Performance against the MSS limits

Ergon Energy's reliability performance for the 2021–22 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 2021–22 period.

Ergon Energy's SAIDI and SAIFI performance before and after exclusions and its MSS limits for 2021–22 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 2021–22.

Ergon Energy reported one major events during 2021–22, this event is detailed in Table 8.

Performance against the SAIDI limits

Table 5 Ergon Energy SAIDI performance (minutes)

	2019–20	2020–21	2021–22	SAIDI MSS limits 2021–22
	Total before exclusions			
Urban feeders	232.6815	360.8330	262.19093	
Short rural feeders	447.5339	573.9934	560.51837	
Long rural feeders	1182.3328	1117.0652	1403.27746	
	Total net of exclusions			
Urban feeders	224.9419	236.2912	**243.53946**	**149**
Short rural feeders	422.8796	460.6476	**522.75162**	**424**
Long rural feeders	1056.0088	1048.2913	**1343.58276**	**964**

Performance against the SAIFI limits

Table 6 Ergon Energy SAIFI performance (number of interruptions)

	2019–20	2020–21	2021–22	SAIFI MSS limits 2021–22
	Total before exclusions			
Urban feeders	1.8888	1.8367	1.75608	
Short rural feeders	3.3369	3.4979	3.47679	
Long rural feeders	6.8946	6.3367	6.79967	
	Total net of exclusions			
Urban feeders	1.7985	1.6239	**1.68358**	**1.98**
Short rural feeders	3.1596	3.1962	**3.30387**	**3.95**
Long rural feeders	6.4575	5.9783	**6.53888**	**7.40**

Excluded interruptions

Table 7 Ergon Energy exclusions from MSS reporting for 2021–22

	Exclusions from SAIDI (minutes)	Exclusions from SAIFI (interruptions)
Interruption of a duration of three minute or less		
None in 2021–22		
Interruption resulting from load shedding due to a shortfall in generation		
	SAIDI	**SAIFI**
Urban feeder	0.00011	0.00001
Short rural feeder	0.00382	0.00001
Long rural feeder	Nil	Nil
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 2021–22		
Interruption resulting from automatic load shedding due to the operation of under-frequency relays following the occurrence of a power system under-frequency condition		
None in 2021–22		
Interruption resulting from failure of the shared transmission grid		
	SAIDI	**SAIFI**
Urban feeder	6.03157	0.02561
Short rural feeder	3.17256	0.02622
Long rural feeder	11.72009	0.08963
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		
None in 2021–22		
Any interruption to the supply of electricity on a distribution entity's supply network which commences on a major event day		
	SAIDI	**SAIFI**
Urban feeder	0.83850	0.00494
Short rural feeder	15.23542	0.07188
Long rural feeder	23.95240	0.12459

An interruption caused by a customer's electrical installation, a customer's request to be disconnected to isolate their installation, or failure of that electrical installation, if power is still available at the point of supply		
	SAIDI	**SAIFI**
Urban feeder	0.40713	0.00025
Short rural feeder	0.13545	0.00018
Long rural feeder	0.03533	0.00018
An interruption caused or extended by a direction from a police officer or another authorised person exercising powers in relation to public safety, provided that a fault in, or the operation of, the network did not cause, in whole or in part, the event giving rise to the direction.		
	SAIDI	**SAIFI**
Urban feeder	11.37416	0.04168
Short rural feeder	19.21948	0.07462
Long rural feeder	23.98688	0.04639
Total exclusions		
	SAIDI	**SAIFI**
Urban feeder	**18.65147**	**0.07249**
Short rural feeder	**37.76674**	**0.17292**
Long rural feeder	**59.69470**	**0.26079**

Major event days

Table 8 – Major event details

Event Date	Event Details
6 March 2022	Severe thunderstorms in the Bundaberg Burnett area.