

Telecommunications Consumer Safeguards

International and sectoral
comparisons of service
reliability safeguards

Department of Communications and the Arts

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1. Introduction

1.1 Context

On 17 April 2018, the Minister for Communications, Senator the Hon Mitch Fifield, released Terms of Reference for a Consumer Safeguards Review (the Review) to be undertaken by the Government, that will develop the next generation of consumer safeguards for the telecommunications industry in Australia. The second part of the Review will consider and make recommendations on the level of consumer safeguards required so that consumers have access to reliable telecommunications services.

While many safeguards are already delivered through broader consumer protection provisions under the Australian Consumer Law, some form of telecommunications-specific safeguards may remain necessary. In this context, the Review will have regard to:

- the need for regulatory or institutional reform
- existing consumer protection frameworks
- the form safeguards should take
- where in the supply chain they should be applied
- the regulatory approach to be taken.

This paper provides information about the current mechanisms used to promote reliability of telecommunications services in Australia, in comparable countries around the world, and in other industries in Australia.

It should be noted that due to the variance in definitions and applications across countries and industries there is additional nuance that cannot be captured using only information gathered in a desktop review. The purpose of this paper is to provide a baseline level of information to inform consultation on service reliability; it should not be considered exhaustive or used in isolation for decision making.

1.1.1 Service reliability

Consumers purchase services from telecommunications retailers, both telephone and internet, with a reasonable expectation of the reliability of the underlying networks. As consumers become increasingly reliant on telecommunications for personal and commercial use, the ability to access reliable networks becomes fundamental.

Specific measures that promote reliability of a telecommunications network can be important components of a well-functioning consumer safeguards framework, particularly where competition in the market and transparent information for consumers is not sufficient to drive reliable service delivery.

Reliability is a term used by many service providers in the telecommunications industry, yet it rarely carries an explicit or consistent definition. The desktop review that informs this paper also indicates that its application varies across countries and sectors. Nevertheless, there are characteristics that appear to be common, and these characteristics have been identified and used for comparison.

In this paper, reliability refers to the ability for consumers to access and use the service they have purchased to an acceptable standard. It does not refer to the reliability of the hardware used to access these services. Some countries choose to impose minimum standards to ensure an acceptable level of network reliability, whereas others place a greater level of reliance on competition in the market to drive high standards of reliability. This varies across countries and industries, but also across segments of the market (eg fixed vs mobile telephone services).

Other countries examined in this paper are:

- Canada
- France
- New Zealand
- Singapore
- United Kingdom (UK)
- United States of America (USA).

For comparative purposes, the energy (electricity and gas) sector in Australia was also examined.

1.2 Reliability in telecommunications

There is significant variance in the way that reliability is defined and applied internationally in telecommunications industries and in other Australian sectors.¹ Nevertheless, common characteristics have been identified for this paper:

- **Telephone connections:** Relates to establishing new connections (connection times and appointments), and ongoing use of a phone service (call success rate and set up time, the clarity and fidelity of the call, and call dropout rates).²
- **Data connections:** Relates to the time taken to set up a new customer connection, as well as data packet loss.³
- **Faults and outages:** The number of reported outages and faults, repair times for faults and outages, and appointment keeping.
- **Penalties for non-compliance:** The potential for financial penalties to be imposed on providers that fail to meet the required standards.

1.3 The role of the market in shaping service reliability

Reliability is widely recognised as one of a handful of variables that contribute to overall quality of a product.⁴ Reliability tends to gain importance in a market when the cost of downtime and maintenance creates financial burdens on consumers. For instance, failure of an internet network impacts business platforms such as EFTPOS, online booking systems and online shopping. As telecommunications become the cornerstone of effective social and business transactions, not only in Australia but around the world, the reliability of underlying networks and the quality of the service provided to consumers is increasingly important.⁵

¹ OECD (2013) The Role and Measurement of Quality, available at: <http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf>.

² For the purpose of this report, clarity refers to the coherence and intelligibility of the sound being transmitted, while fidelity refers to the precision of the sound ie whether it is true to its source.

³ The telecommunications regulator in Singapore considers a packet of data to be lost if the response is not received within two seconds from the time the packet is sent, see: <https://www.imda.gov.sg/-/media/imda/files/regulation-licensing-and-consultations/licensing/licenses/compliance-to-ida-standards/page-b--qos-framework-for-fibre-broadband-services.pdf?la=en>.

⁴ See: the Eight Dimensions of Quality, SERVQUAL or RATER models.

⁵ Harvard Business Review (1987) Competing on the eight dimensions of quality, available at: <https://hbr.org/1987/11/competing-on-the-eight-dimensions-of-quality>.

As a general rule, competition within a market is thought to drive improvement in the quality of goods and services.⁶ In competitive markets where consumers are able to make choices based on more than price alone, quality is often a key factor in decision making.⁷ In addition, when consumers have the freedom to move between providers without financial penalty (eg the ability to cancel a contract free of charge), providers are placed under greater pressure to differentiate themselves and their products on quality.

In 2016/17, the ‘guarantee as to acceptable quality’⁸ was the second highest category for complaints to the Australian Competition and Consumer Commission (ACCC) about telecommunications services – indicating the importance of quality telecommunications services to Australians.

This is supported by a recent market study in which UK households indicated that the reliability of their broadband connection was more important than the speed of the connection itself.⁹ In a 2017 Mobile Consumer Survey, 58 per cent of Australian consumers indicated that quality/availability of the network was a key driver behind choosing a particular mobile telephone service provider.¹⁰

Given the significant role of the market in shaping quality, and therefore reliability, it appears that many countries impose minimal regulation on service reliability. The role of regulation, where it exists, seems to focus on minimum standards to ensure that all consumers receive an acceptable level of reliability.

⁶ OECD (2013) The Role and Measurement of Quality, available at: <http://www.oecd.org/competition/Quality-in-competition-analysis-2013.pdf>.

⁷ Investopedia (Accessed June 2018) Law of Supply and Demand, available at: <https://www.investopedia.com/terms/l/law-of-supply-demand.asp>.

⁸ ACCC (2018) Competition and Price Changes in Telecommunications Services in Australia 2016–17, available at: <https://www.accc.gov.au/system/files/Competition%20and%20price%20changes%20in%20telecommunications%20services%20in%20Australia%202016-17.pdf>.

⁹ EY (2013) The Mobile Maze, available at: https://www.ey.com/Publication/vwLUAssets/EF0110/%24FILE/The-mobile-maze_EF0110.pdf.

¹⁰ Deloitte (2017) Mobile Consumer Survey, The Australian Cut, available at: <https://www2.deloitte.com/au/mobile-consumer-survey>.

2. Comparison to other countries

This section compares the most common reliability variables across countries, within the following categories:

- connection
- outages and faults
- penalties for non-compliance.

For comparison purposes, only the most salient variables and those that are most consistent across countries have been used.

In the USA, service quality standards, including the measures discussed below, are the responsibility of individual states. Due to the variance between states, they have not been captured in the tables below, but they are discussed in more detail under the section relating to the USA.

For the purpose of reliably comparing information across countries, all financial data has been converted into AUD, based on rates as at 1 July 2018.¹¹

2.1 Connection

Connection refers to the initial establishment and ongoing quality of a telecommunications service. The key measures for connection identified through a desktop review, split by telephone and data connections, are:

- Telephone connections: measures relating to new connections (connection times and appointments met), call success rate and set up time, call clarity and fidelity, and call dropout rates.
- Data connections: measures relating to the time it takes to set up a new connection, as well as packet losses over a specified connection.














These are discussed in turn.

¹¹ Currency exchange rates taken at 1 July 2018 from <https://www.xe.com/>.

2.1.1 Telephone connections

The following summarises where each country appears to have a reliability measure in place relating to telephone connections.

Table 1: Telephone connection by country

	Australia	Canada	France	New Zealand	Singapore	UK*	USA
New service connection times							
Appointment keeping							
Call success rate							
Call clarity and fidelity							
Average call set up time							
Call dropout rate							

* Commencing from 2019.

No telecommunications-specific safeguard identified: BLANK

Mobile services: 

Fixed line telephone services: 

New service connection times

Many countries set requirements on the time taken to establish a new connection for a fixed telephone service. Of the countries examined, new connection timeframes (where present) range from 2 days to 15 days. In Australia, the time allowed by the regulator is a function of whether the infrastructure already exists (ie there is an active phone line connected to the residence or the residence is close to nearby infrastructure), as well as the geographical location and the size of the population in the area. Singapore requires new telephone connections to be made within five days. France monitors new connection timeframes, but specific metrics were not identified in a desktop review of publicly available information. In the UK, Ofcom publishes the average number of days taken for landline and broadband services to be provided within its annual service quality report. In addition, the UK's new automatic compensation scheme (to come into effect in 2019) will require service providers to financially compensate consumers where there is a delay in the commencement of a landline and/or broadband service beyond the date committed to by the service provider. Canada, New Zealand and the USA do not appear to place any requirements on telephone connection times for retail services.

New installation appointments met

More than half of countries examined do not impose requirements on meeting installation appointments.

In Canada, some fixed telephone service providers with a large market share are required to meet 90 per cent or more of installation appointments. Where these large providers do not meet the standard for three consecutive months, an exception report identifying the problem and course of action to rectify is filed by the Incumbent Local Exchange Carrier. The service standard must be met for three months before the requirement to file an exception report ceases.

Under the UK's automatic compensation scheme, due to commence in 2019, service providers will be required to pay a financial penalty where they miss an appointment.

Call success rate

Call success rates are only monitored in France and Singapore. In Singapore this is based on monitoring by the regulator of network traffic logs, however in France it is not clear how this is measured. In France, this applies to fixed telephone services, while in Singapore it applies to mobile telephone services.

Call clarity and fidelity

France is the only country examined in this report that monitors call clarity and fidelity of local fixed telephone service calls using speech quality as the metric. This information is made available to the public.

Call set up time

Call set up times, the length of time, measured in seconds, required to establish a call between users, is monitored in France and Singapore. In France, this applies to fixed telephone services, while in Singapore it applies to mobile telephone services.

Call dropout

Singapore is the only country considered in this review that appears to publicly monitor and release information on call dropouts in relation to mobile services. Typically the call dropout rates in Singapore are very low, at below 0.5 per cent.¹²

¹² Infocomm Media Development Authority (accessed June 2018) Quality of Service Performance Results for April–June 2016, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-the-sale-of-telecommunication-equipment/compliance-to-imda-standards/3g-services/apr-jun-2016>.

2.1.2 Data connections

The following summarises where each country appears to have a reliability measure in place relating to data connections.

Table 2 Data connection by country

	Australia	Canada	France	New Zealand	Singapore	UK*	USA
New service connection times							
Data/Packet loss							

* Commencing from 2019.

No telecommunications-specific safeguard identified: BLANK

Internet services:

New installation appointments met

New Zealand and Singapore currently set requirements for the time taken to establish a new connection for a broadband service. In Singapore, this is primarily for monitoring purposes only, except in relation to NetLink Trust.

The UK's automatic compensation scheme, due to commence in 2019, will require service providers to financially compensate consumers where they fail to connect a service within the agreed connection timeframe. Singapore requires new internet connections to be made within three to five days. New Zealand requires that providers aim to set up new connections within one day of transferring between providers.

Packet loss















France and Singapore both monitor packet loss in relation to internet services. Both countries release this information to the public to allow consumers to make more informed decisions.

2.2 Outages and faults

Outages and faults refer to incidences where a service is unavailable or there is significant degradation in the performance of the service.

The following summarises where each country appears to have a reliability measure in place relating to outages and faults.

Table 3: Outages and faults by country

	Australia	Canada	France	New Zealand	Singapore	UK*	USA
Number of reported outages/faults			  		 		
Repair time						 	
Appointment keeping							

* Commencing from 2019.

No telecommunications-specific safeguard identified: BLANK

Mobile services: 

Internet services: 

Fixed line telephone services (telephony): 

Number of reported outages/faults

In Australia, the Network Reliability Framework (NRF), a legacy safeguard which applies only to Telstra fixed telephone lines, monitors the percentage of services that do not experience a fault as a measure of service reliability. In Singapore, the regulator reports on the number of faults experienced in relation to fixed telephone services, as well as the outage times for mobile telephone and internet services. France requires service providers to report against fault rates, fault repair times, the number of faults on lines delivered in the last month and the number of faults caused by other operators.

All other countries considered in this review do not appear to apply safeguards relating to outages and faults.

Repair time

Repair time was the most commonly used measure relating to outages and faults for fixed telephone services in the countries considered. New Zealand and the USA were the only countries with no specific mechanisms relating to repair time.

In Australia, the Customer Service Guarantee (CSG) and Priority Assistance (relating to Telstra fixed line services) both deal with fault repair times. The NRF also monitors the percentage of time that services were available (and therefore not waiting for repair). Under the NRF, Telstra must address any service identified as experiencing more than three faults in any 60 day rolling period or four faults in any 365 day rolling period.¹³

¹³ ACMA (accessed June 2018) Network Reliability Framework, available at: <https://www.acma.gov.au/Industry/Telco/Carriers-and-service-providers/Universal-service-obligation/network-reliability-framework-carriers-service-providers-acma-1>.

Appointment keeping

In Australia, the CSG and Priority Assistance arrangements (relating to Telstra fixed line services) also provide metrics for appointment keeping. Canada also requires greater than 90 per cent of appointments to be met for fixed telephone services.

Material identified through a desktop review did not reveal any reporting against appointment keeping in other countries considered in this review.

2.3 Penalties for non-compliance

Some countries choose to penalise service providers for not meeting a specified minimum standard in relation to service reliability. These penalties typically take the form of financial disincentives and their application varies by country. Some countries impose penalties for individual infringements, while others apply penalties based on performance against the overall benchmarks. In Canada, penalties are imposed on wholesalers, while in all other countries they apply at the retail level.

The following summarises where each country appears to have a financial penalty in relation to reliability.

Table 4: Penalties for non-compliance by country

	Australia	Canada	France	New Zealand	Singapore	UK*	USA
Financial	✓	✓**	✓	✓	✓	✓	✗

Note: (✓) Telecommunications specific safeguard in place – not distinguished by service.

(✗) No telecommunications-specific safeguard identified:

* Commencing from 2019.

** Wholesale only.

All countries examined other than the USA appear to have the ability to impose financial penalties on service providers, with two general approaches taken:

- Countries such as Australia, Canada, France, New Zealand, Singapore and the UK (from 2019) impose penalties where operators fail to meet required standards.
 - Australia – between approximately \$7 - \$50 per infringement, depending on the type of infringement (outlined in detail in the Australia section).
 - Canada: Up to 5 per cent of revenues for the month.¹⁴
 - France: Up to 3 per cent of annual revenue or EUR 150,000 (~AUD\$236,773) where this cannot be assessed.¹⁵
 - Singapore: Up to 50,000 Singapore Dollars¹⁶ (~AUD\$49,551).

¹⁴ Canadian Radio-television and Telecommunications Commission (2005) Telecom Decision CRTC 2005-20, available at: <https://crtc.gc.ca/eng/archive/2005/dt2005-20.htm>.

¹⁵ DLA Piper (2016) Telecommunications laws of the world - France, available at: <https://www.dlapiperintelligence.com/telecoms/index.html?t=overview&c=FR>.

- From 2019, under the new UK automatic compensation scheme, service providers will be required to pay a minimum of £25 to the consumer (~AUD\$45) where they miss an appointment to install a fixed telephone service.
- The enforcement bureau of the USA regulator has the authority to impose penalties on telecommunications service providers relating to consumer protection, but establishing and enforcing telecommunications service quality standards or requirements is the purview of individual States. These standards or requirements do not appear to be universally applied, and may be applied by exception where a problem has been identified.¹⁷

¹⁶ Singapore Government: Info-communications Media Development Authority (2018) Quality of Service, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-the-sale-of-telecommunication-equipment/compliance-to-irda-standards/quality-of-service>.

¹⁷ *Telecommunications Act of 1996*, available at: <https://transition.fcc.gov/Reports/tcom1996.pdf>.

3. International models

The section below outlines the regulatory powers of the Australian Communications and Media Authority (ACMA) to enforce reliability in the telecommunications sector. This is then used as the basis for comparison with other countries.

3.1 Australia

The ACMA is an independent statutory authority tasked with regulating Australia's media and communications industry. Its remit is to drive the effective and efficient operation of the industry in the public interest. The ACMA achieves this through legislation, regulation, derived standards and codes of practice.¹⁸

The *Telecommunications Act 1997* is the primary piece of legislation. Its objective is to provide a regulatory framework that promotes:

- the long-term interests of end-users or of services provided
- the efficiency and international competitiveness of the Australian telecommunications industry
- the availability of accessible and affordable service providers that enhance the welfare of Australians.

According to the *Telecommunications Act 1997*, it is the ACMA's responsibility to monitor and report to the Minister each financial year. This should include all significant matters relating to the performance of carrier and service providers, with particular reference paid to consumer satisfaction, consumer benefits and quality of service.¹⁹

The ACCC plays a complementary role to the ACMA, with respect to economic aspects of the media and communications industry, including competition policy, pricing and access regimes and whole of economy consumer protection laws. Additionally, the ACCC runs a broadband monitoring program that aims to provide consumers with accurate, independent and comparable information about broadband speeds and performance.²⁰

There are three main mechanisms in Australia used to deal with quality of service relating to the reliability of telecommunications services. These include the CSG, the NRF and Priority Assistance arrangements, each of which are discussed below.

¹⁸ ACMA (September 2016) Introduction to the ACMA, available at: <https://www.acma.gov.au/theACMA/About/Corporate/Authority/introduction-to-the-acma#1>.

¹⁹ *Telecommunications Act 1997*, available at: <https://www.legislation.gov.au/Details/C2018C00311>

²⁰ ACCC (Accessed in June 2018) Monitoring Broadband Performance, available at: <https://www.accc.gov.au/consumers/internet-phone/monitoring-broadband-performance>.

3.1.1 Customer Service Guarantee (CSG)

The CSG, which consists of a Standard and associated benchmarks,²¹ provides an incentive for telephone companies to improve their service performance and provide some redress to consumers when performance standards are not met. The CSG applies to fixed telephone services. It does not apply to mobile or satellite voice services, internet services or in instances where a customer agrees to waive their rights under the CSG at the time of sale.²² The CSG performance benchmarks apply to telecommunications service providers who are above a threshold of 100,000 CSG services or more across the previous financial year. The CSG requires carriage service providers to meet specified timeframes for the connection of specified services, the repair of faults, and the attendance of appointments by service providers and sets out the level of compensation to be paid to consumers when the standards are not met.²³

3.1.2 Network Reliability Framework (NRF)

The NRF complements the CSG to improve the overall telephone service reliability of fixed telephone services of Telstra residential and small business consumers. The NRF requires Telstra to identify and report the percentage of services that experience a fault at a national and regional level and also provide information relating to the poorest performing parts of the network and the individual service performance.²⁴

Telstra reports (on its website) the latest monthly reliability data for their fixed voice network, setting out the:

- percentage of consumers with no faults in a given month
- average service availability in a given month across 44 metropolitan and regional areas in Australia.²⁵

It should be noted however, that the relevance of the NRF as a requirement of Telstra is decreasing as much of the copper network is progressively replaced by the NBN, owned by NBN Co Limited. By 2020, around 92 per cent of premises will need to migrate to the NBN to retain a fixed line service.²⁶

²¹ Telecommunications (Customer Service Guarantee – Retail Performance Benchmarks) Instrument, available at: <https://www.legislation.gov.au/Details/F2012C00625>.

²² ACMA (2015) Know your obligations - Carriers and carriage service providers, including internet and VoIP service providers, available at: <https://www.acma.gov.au/-/media/Networks/Publication/pdf/Know-Your-Telecommunications-Industry-Obligations-Booklet.pdf?la=en>.

²³ ACMA (2017) Customer Service Guarantee: FAQs, available at: <https://www.acma.gov.au/Citizen/Phones/Landlines/Phone-connection-and-repair/customer-service-guarantee-for-phone-users-faqs>.

²⁴ ACMA. (2017). Communications report 2016–17, available at: <https://www.acma.gov.au/-/media/Research-and-Analysis/Report/pdf/Communications-report-2016-17-pdf.pdf?la=en>.

²⁵ Telstra (2018) Network Reliability Framework for fixed voice services, available at: <https://www.telstra.com.au/consumer-advice/customer-service/network-reliability>.

²⁶ Telstra (Accessed 2018) NBN Transition, available at: <https://www.telstrawholesale.com.au/nbn.html>.

3.1.3 Priority Assistance arrangements

The Priority Assistance for Life Threatening Medical Conditions Code 2007 seeks to prioritise fixed line telephone connection and repairs for people diagnosed by a medical professional with a life threatening medical condition. As with other industry codes, this code is voluntary for industry participants. Telstra is required to offer priority assistance to its residential retail customers through the terms of its Carrier Licence Conditions. Telstra’s licence conditions state that it “must implement arrangements for maximising service continuity to priority customers”²⁷, with its policy stating that if a maximum timeframe cannot be met, it will as soon as practicable “offer the priority customer an Interim Priority Service (or the choice between an Interim Priority Service and an Alternative Service, such as a call diversion to a number of the customer’s choice)”.²⁸ This is however optional for other retail providers, with only iPrimus²⁹ offering these services for some customers (not offered to new customers or to existing customers who don’t already have Priority Assistance active on their fixed line service).³⁰

3.1.4 Connection

The CSG and the Priority Assistance arrangements have performance indicators in relation to the connection of telecommunications services, namely, requirements for connection times and connection appointments.

Table 5: Connection quality of service indicators - Australia^{31, 32, 33}

Performance indicator	Applicable standard
New installation appointments met	<p>CSG: Maximum connection period:</p> <ul style="list-style-type: none"> • 2 working days for in place connections • 5 working days for Urban areas • 10 working days for major rural • 15 working days for minor rural and remote. <p>Priority Assistance: within 24 hours in an urban or rural area, or 48 hours in remote areas.</p>
Connection appointments	<p>CSG: Customers may make connection appointments before or after the maximum connection period.</p>

²⁷ Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997, available at: <https://www.legislation.gov.au/Details/F2018C00380>.

²⁸ Telstra (Accessed June 2018) Priority Assistance for Life Threatening Medical Conditions Policy, available at: <https://www.telstra.com.au/content/dam/tcom/personal/consumer-advice/pdf/priority-assist-policy.pdf>.

²⁹ ACMA (2017) Communications report 2016–17, available at: <https://www.acma.gov.au/-/media/Research-and-Analysis/Report/pdf/Communications-report-2016-17-pdf.pdf?la=en>.

³⁰ iPrimus (Accessed July 2018), Priority Assistance, available at: <https://www.iprimus.com.au/support/priority-assistance/>.

³¹ ACMA (2017) Customer Service Guarantee: FAQs, available at: <https://www.acma.gov.au/Citizen/Phones/Landlines/Phone-connection-and-repair/customer-service-guarantee-for-phone-users-faqs>.

³² NBN Co Ltd. (2017 & 2018) Wholesale Broadband Agreement (WBA), available at: <https://www.nbnco.com.au/sell-nbn-services/supply-agreements/wba.html>.

³³ ACMA (2017) Communications report 2016–17, available at: <https://www.acma.gov.au/-/media/Research-and-Analysis/Report/pdf/Communications-report-2016-17-pdf.pdf?la=en>.

Data connections

Under the current standards and frameworks considered, Australia does not have any specific reliability consumer safeguards currently in place for broadband or mobile data connections.

3.1.5 Outages and faults

The NRF relates to the Telstra network and provides requirements relating to service faults and the percentage of time that services are available.³⁴

Metrics for fixed line outages and faults are summarised in Table 6. Note that the CSG and Priority Assistance do not apply to all fixed line telephone providers.

While some countries differentiate between outages and faults, Australia does not appear to do so. Mass outages (ie those caused by natural disasters), however, operate as a criteria for exemption from the CSG.

Table 6: Outages and faults quality of service indicators – Australia^{35, 36, 37}

Quality of service indicator	Applicable standard
Fault rectification	<p>CSG: Maximum rectification periods:</p> <ul style="list-style-type: none">• One full working day in Urban centres• Two full working days in small urban/rural areas• Three full working days in other areas <p>Priority assistance: timeframe for rectification of a service:</p> <ul style="list-style-type: none">• 24 hours in Urban and Rural• 48 hours in remote areas <p>A longer timeframe if requested by the customer</p>
Fault appointments	<p>CSG:</p> <ul style="list-style-type: none">• Service providers must make appointments that are convenient to the customer.• The appointment must be for a specific time or within a period of no more than 5 hours.• A service provider must keep an appointment but may change by giving 24 hours' notice or with the consumer's agreement.

³⁴ ACMA (2017) Communications report 2016–17, available at: <https://www.acma.gov.au/-/media/Research-and-Analysis/Report/pdf/Communications-report-2016-17-pdf.pdf?la=en>.

³⁵ ACMA (2017) Customer Service Guarantee: FAQs, available at: <https://www.acma.gov.au/Citizen/Phones/Landlines/Phone-connection-and-repair/customer-service-guarantee-for-phone-users-faqs>.

³⁶ NBN Co Ltd. (2017 & 2018) Wholesale Broadband Agreement (WBA), available at: <https://www.nbnco.com.au/sell-nbn-services/supply-agreements/wba.html>.

³⁷ ACMA (2017) Communications report 2016–17, available at: <https://www.acma.gov.au/-/media/Research-and-Analysis/Report/pdf/Communications-report-2016-17-pdf.pdf?la=en>.

3.1.6 Penalties for non-compliance

The CSG has penalties payable where maximum timeframes are exceeded. These are payable directly to the consumer. These are summarised in Table 7.

Table 7: Penalties relating to fixed line telephone services in Australia (CSG)³⁸

Customer	Services Delayed	Compensation for first 5 working days (per working day)	Compensation after first 5 working days (per working day)
Residential	Connection or repair of standard telephone service	\$14.52	\$48.40
	Connection or repair of enhanced call handling features to an existing service	\$7.26	\$24.20
	Connection or repair of two or more enhanced call handling features to an existing service	\$14.52	\$48.40
	Not keeping an appointment	\$14.52 for each missed appointment	-
Business	Connection or repair of the standard telephone service	\$24.20	\$48.40
	Connection or repair of enhanced call handling features to an existing service	\$12.10	\$24.20
	Connection or repair of two or more enhanced call handling features to an existing service	\$24.20	\$48.40
	Not keeping an appointment	\$24.20 for each missed appointment	-

The CSG performance benchmark applies to telecommunications service providers who are above a threshold of 100,000 CSG services or more across the previous financial year. In 2016–17 there were four providers who were above this threshold. In instances where a service provider does not meet the benchmarks, the ACMA may take compliance action. This could include formal warnings, enforceable undertakings, remedial directions, infringement notices and initiating civil penalty proceedings.³⁹

³⁸ ACMA (2017) Customer Service Guarantee: FAQs, available at: <https://www.acma.gov.au/Citizen/Phones/Landlines/Phone-connection-and-repair/customer-service-guarantee-for-phone-users-faqs>.

³⁹ ACMA (2017) Communications report 2016–17, available at: <https://www.acma.gov.au/-/media/Research-and-Analysis/Report/pdf/Communications-report-2016-17-pdf.pdf?la=en>.

Despite the absence of specific regulated requirements for the reliability of broadband services, the ACCC has taken action under Australian Consumer Law in circumstances where consumers were sold broadband plans which were incapable of achieving the advertised speeds. A number of providers have entered into court enforceable undertakings, and have offered consumers remedies, such as:

- the ability to exit from their contract free of charge (including any bundle) and a refund
- move to a different speed plan and receive a refund.⁴⁰

⁴⁰ ACCC (Accessed June 2018) Broadband speeds, available at:
<https://www.accc.gov.au/consumers/national-broadband-network/broadband-speeds#broadband-speed-claims>.

3.2 Canada

The Canadian Radio-television and Telecommunications Commission (CRTC) is an independent public authority established under the *Canada Telecommunications Act 1993*. The CRTC is responsible for regulating and supervising broadcasting and telecommunications services (wireline and wireless) in the public interest.⁴¹

The CRTC publishes directions and policies that outline how it regulates the telecommunications industry. Regulation of Quality of Service applies to Incumbent Local Exchange Carriers (ILECs) with over 25,000 network access services. The purpose of this is to promote competition and to ensure Canadians receive consistent, high quality service in all areas, including where market forces are not sufficient to ensure high quality of service to customers.⁴²

ILECs may provide both wholesale and retail services, therefore the CRTC has implemented service quality standards across both of these areas, but with the provision of wholesale services the predominant focus.

The existing wholesale regulation quality of service plan was announced in 2005 when the regulator introduced the quality of service Rate Rebate Plan for ILECs. Service providers are required to meet a suite of quality of service standards across their provision of certain wholesale services to competitors, in an attempt to drive competition in the market. Each indicator within the quality of service regime has a minimum service performance standard which must be met. If not, the ILEC's are required to pay rebates to competitors, unless the Commission determines otherwise.⁴³

In April 2018,⁴⁴ the Commission published the results of its review of the quality of service regime. It determined that additional oversight is required for all providers of aggregated and disaggregated wholesale high speed access services, and these should be included in a competitor quality of service regime. The Commission also determined that large ILECs' wholesale services and processes should no longer be included in the quality of service regime, small ILECs should retain the current complaints based approach, and Northwestel (a large ILEC in Canada) should come under a monitoring regime. The results of this review have not been actioned as of June 2018.

⁴¹ CRTC (2018) Our Mandate, Mission and What We Do, available at: <https://crtc.gc.ca/eng/acrtc/acrtc.htm>.

⁴² CRTC (2009) Telecom Regulatory Policy CRTC 2009-304, available at: <https://crtc.gc.ca/eng/archive/2009/2009-304.htm>.

⁴³ Government of Canada (2005) CRTC Announces QoS Rate Rebate Plan for Competitors, available at: <https://www.canada.ca/en/news/archive/2005/03/crtc-announces-quality-service-rate-rebate-plan-competitors.html>.

⁴⁴ CRTC (2018) Telecom Regulatory Policy CRTC 2018-123, available at: <https://crtc.gc.ca/eng/archive/2018/2018-123.htm>.

3.2.1 Connection

In Canada, monitoring of retail connection processes is limited to the number of installation appointments, whereas 16 indicators are monitored in the wholesale market.

Telephone connections

New service connection times

Table 8: Retail connection indicators – Canada⁴⁵

Performance indicator	Standard
Installation appointments met (urban/rural/community)	90% or more

In Canada, ILECs are required to report quarterly in relation to the number of installation appointments met for urban, rural and community areas. The required standard under this requirement is for 90 per cent or more of installation appointments to be met each month. Where an ILEC does not meet the standard for three consecutive months, it is required to file an exception report identifying the problem and course of action to rectify it. The service standard must be met for three months before an ILEC will no longer have to file an exception report.⁴⁶

Data connections

In Canada, internet service providers are primarily responsible for their quality of service and customer relations. If customers have an issue with the service being provided to them, the CRTC states that consumers are free to switch service provider or should direct their concerns to the telecommunications complaints handling body for dispute resolution.⁴⁷

3.2.2 Outages and faults

Number of report outages/faults and repair time

In Canada the regulator requires reporting against outages and faults relating to quality of service standards across both retail and wholesale markets. Out-of-service trouble reports and repair appointments met are monitored across both wholesale and retail markets, while the average time to repair is monitored at the wholesale level.

ILECs are required to report their out-of-service trouble reports and number of repair appointments met to the CRTC on a quarterly basis. They are required to meet service standards of 80-90 per cent out-of-service trouble reports cleared within 24 hours, and meet 90 per cent or more of repair appointments.

⁴⁵ CRTC (2009) Telecom Regulatory Policy CRTC 2009-304, available at: <https://crtc.gc.ca/eng/archive/2009/2009-304.htm>.

⁴⁶ CRTC (2008) Telecom Decision CRTC 2008-105, available at: <https://crtc.gc.ca/eng/archive/2008/dt2008-105.htm>.

⁴⁷ CRTC (2017) What you should know about Internet speeds, available at: <https://crtc.gc.ca/eng/internet/performance.htm>.

Table 9: Outages and faults quality of service indicators – Canada⁴⁸

Performance indicator	Standard
Out-of-Service trouble reports cleared within 24 Hours (urban/rural)	80%+
Out-of-Service trouble reports cleared within 5 days (remote)	90%+
Repair appointments met (urban/rural/community)	90% or more

As noted above, if an ILEC fails to meet the service standards for three consecutive months, it must provide an exception report to the CRTC.

3.2.3 Penalties for non-compliance

There are currently no penalties for non-compliance in the retail market. The quality of service standards are solely an information requirement, allowing consumers to have visibility of the quality of telecommunications services they receive.⁴⁹

In the wholesale market there is a Rate Rebate Plan in place. Under this plan, ILECs must meet the wholesale quality of service indicators outlined above. If they fail to do so, they are required to pay a rebate to competitors who have purchased ILEC services. The magnitude of the rebate is dependent on a formula which considers the number of indicators missed. If all quality of service standards are missed, the competitor is eligible to receive a rebate from the ILEC of 5 per cent of all its one time and monthly charges. In the case where not all indicators are missed, the 5 per cent figure is pro-rated based on the proportion of indicators missed. The Commission has the power to choose not to impose a rebate if it deems a rebate inappropriate based on the ILEC's current circumstances. The Commission also has the authority to impose administrative monetary penalties to promote compliance with regulation.⁵⁰

⁴⁸ CRTC (2009) Telecom Regulatory Policy CRTC 2009-304, available at: <https://crtc.gc.ca/eng/archive/2009/2009-304.htm>.

⁴⁹ CRTC (2009) Telecom Regulatory Policy CRTC 2009-304, available at: <https://crtc.gc.ca/eng/archive/2009/2009-304.htm>.

⁵⁰ CRTC (2005) Telecom Decision CRTC 2005-20, available at: <https://crtc.gc.ca/eng/archive/2005/dt2005-20.htm>.

3.3 European Union – legal context

Telecommunications markets in the European Union (EU) were historically characterised by national public monopolies. A series of legislative packages, passed between 1988 and 1998, culminated in the full liberalisation of the industry. The current Telecoms Regulatory Framework for electronic communications was last updated in 2009 and has been supplemented by several additional legislative instruments since.⁵¹

This framework is applicable to all EU countries, including France and the United Kingdom,⁵² which are discussed in further detail below. This section outlines the legal context in which these three jurisdictions operate, and subsequent sections outline the role of national regulatory authorities in their respective jurisdictions.

The EU’s regulatory framework for electronic communication is a series of rules which apply throughout the EU Member States. They aim to encourage competition, improve market functioning and guarantee basic user rights. The current telecommunications rules are under review via the ‘connectivity package’ launched in September 2016. The European Commission has proposed a new European Electronic Communications Code including simplified rules to attract investment across Europe.⁵³

Four of the five European directives discuss quality of service standards for the telecommunications sector. These include publication, non-discrimination, minimum quality of service levels and contractual impacts.⁵⁴ The directives are:

- **The ‘framework’ directive:** promotes competition by “ensuring that users, including disabled users, derive maximum benefit in terms of choice, price, and quality”.
- **The ‘authorisation’ directive:** requires operators to provide information for “publication of comparative overviews of quality and price of services for the benefit of consumers”.
- **The ‘access’ directive:** prescribes non-discrimination in the provision and quality of services to subsidiaries or partners from own company services.
- **The ‘universal service’ directive:** aims to “ensure the availability throughout the Community of good-quality publicly available services through effective competition and choice and to deal with circumstances in which the needs of end users are not satisfactorily met by the market”.⁵⁵

⁵¹ European Commission (2018) Telecommunications Overview, available at: http://ec.europa.eu/competition/sectors/telecommunications/overview_en.html.

⁵² The UK is scheduled to leave the European Union in March 2019. It is currently unclear as to how this will impact telecommunications regulation in the UK until a deal is agreed between the UK and EU

⁵³ European Commission (2018) Telecom Rules, available at: <https://ec.europa.eu/digital-single-market/en/telecoms-rules>.

⁵⁴ Communications Regulatory Authority Qatar (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework Annex 3: Quality of Service Benchmark Report, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

⁵⁵ European Commission (2018) Telecom Rules, available at: <https://ec.europa.eu/digital-single-market/en/telecoms-rules>.

The universal service directive includes three articles relevant to quality of service:⁵⁶

- **Article 11:** Universal providers should “publish adequate and up-to-date information concerning their performance in the provision of universal service”. Additional to this, national regulatory authorities:
 - May specify ‘additional quality of service standards for disabled end users.’
 - May specify ‘the content form and manner of information to be published, in order to ensure that end users and consumers have access to comprehensive, comparable and user friendly information.’
 - ‘Shall be able to set performance targets for those undertakings with universal service obligations’ (having taken into account the view of interested parties).’
 - ‘Shall be able to order independent audits or similar reviews of the performance data, paid for by the undertaking concerned, in order to ensure the accuracy and comparability of the data made available by undertakings with universal service obligations.’
- **Article 20:** states public telephone network contracts should include quality of service standards and compensation amounts applicable where these standards are not met. This should include information on procedures regarding the network link traffic, and ‘information on how those procedures could impact on service quality’.
- **Article 22:** states national regulatory authorities can both require service operators to publish information on quality of service indicators and specify the format and content, after consultation with the operator, and, set minimum quality of service standards on the provision of public communications networks.

The uniform application of EU directives and regulation is supported by the Body of European Regulators for Electronic Communications (BEREC).⁵⁷ This body was established in 2009 as part of the Telecom Reform package, by Regulation (EC) No 1211/2009. The three strategic pillars underpinning BEREC’s strategy are:

- promoting competition and investment
- promoting the internal market
- empowering and protecting end-users.

The body has a mandate to develop and disseminate best practice, advice of regulatory issues, and to provide support to national regulatory authorities.⁵⁸

⁵⁶ Communications Regulatory Authority Qatar (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework Annex 3: Quality of Service Benchmark Report, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

⁵⁷ European Commission (2009) Regulatory framework for electronic communications in the European Union, available at: <https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/Copy%20of%20Regulatory%20Framework%20for%20Electronic%20Communications%202013%20NO%20CROPS.pdf>.

⁵⁸ Body of European Regulators for Electronic Communications (Accessed June 2018) What is BEREC? available at: https://berec.europa.eu/eng/about_berec/what_is_berec/.

3.4 France

3.4.1 French Regulator

The Authority of Electronic Communications and Posts (ARCEP) is an independent French agency in charge of regulating telecommunications. The Code on Posts and Electronic Communications (CPEC) defines the roles and responsibilities of ARCEP. All electronic communications services including fixed line telecommunications, mobiles, the airwaves over which wireless devices operate and postal services are regulated in France.⁵⁹

ARCEP's key responsibilities are for measures aimed at ensuring fair competition, managing radio frequencies and telephone numbers, protection of consumers and their data, and dispute resolution. The French reliability standards are primarily derived from the EU Authorisation Directive.

The majority of telecommunications operators can operate without formal consent or a licence, and this general concept of authorisation is derived from the EU Authorisation Directive (outlined above). However, unlike many other EU Member States, France does stipulate all operators provide a declaration to the ARCEP prior to providing services.⁶⁰ This should include:

- nature of the activity
- category of targeted clients
- geographical coverage
- type of electronic communications services provided
- network infrastructure.

ARCEP conducts market analysis on a regular basis and, when doing so, requires quality of service metrics to be shared by operators.⁶¹ However, ARCEP does not impose standards; it monitors and reports on quality of service, to drive competition and improve the level of quality of service to customers.⁶²

⁵⁹ Autorité de régulation des communications électroniques et des postes, ACREP (Accessed June 2018) Home, available at: <https://www.arcep.fr/index.php?id=1&L=1>.

⁶⁰ DLA Piper (2016) Telecommunications laws of the world - France, available at: <https://www.dlapiperintelligence.com/telecoms/index.html?t=overview&c=FR>.

⁶¹ Legifrance (2006) ARCEP article D. 98-4, available at: <https://www.legifrance.gouv.fr/affichCode.do?idArticle=LEGIARTI000006464073&idSectionTA=LEGISCTA000006181878&cidTexte=LEGITEXTo00006070987&dateTexte=20090217> (Note website is in French as no English language site available).

⁶² Communications Regulatory Authority Qatar (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework Annex 3: Quality of Service Benchmark Report, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

3.4.2 Connection

Telephone connections

The length of time required for consumer access requests to be delivered is monitored by ARCEP in France.⁶³

Other metrics are monitored by ARCEP for telephony services and made available to the public. However, specific performance indicators for those metrics were not readily identified through a desktop review of publicly available information.

Table 10: Connection quality of service indicators – France⁶⁴

Standard	Applicable services
Unsuccessful call ratio (local/international)	Fixed
Call set up time	Fixed
Speech quality (local)	Fixed
Packet loss	Internet
Call maintenance (by time period)	Mobile

Data connections

The quality and performance of a connection are monitored through various quality of service standards captured in the table above. These standards span services including fixed line, mobile, internet services, and wholesale markets. The specific metrics for the standards above were not identified through the desktop review.

3.4.3 Outages and faults

ARCEP monitors the number of faults and call centre response times across all wholesale telecommunications services. There is also a Post and Electronic Communications Code (telephone service) that sets standards for fixed lines including fault repair times, complaint rates and customer bill correctness.

Specific performance metrics against the standards below were not identified through the desktop review of publicly available information.

⁶³ Communications Regulatory Authority Qatar (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework Annex 3: Quality of Service Benchmark Report, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

⁶⁴ Communications Regulatory Authority Qatar (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework Annex 3: Quality of Service Benchmark Report, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

Table 11: Outages and faults quality of service indicators– France⁶⁵

Standard	Applicable services
Fault report rate	Fixed
Fault repair time	Fixed, leased lines
Complaints rate	Fixed
Customer and bill correctness complaints and resolution times	Fixed
Call centre response time & accuracy	All enquiry services
Faults on lines delivered in the last calendar month	All wholesale services
Faults caused by operators	All wholesale services

3.4.4 Penalties for non-compliance

The ARCEP is responsible for ensuring that telecommunications operators are compliant with their obligations as per EU and ARCEP regulations. The ARCEP, subject to its own discretion, will send a notice to non-compliant operators and require operators in breach to take action to remedy the situation within a specified timeframe. If this timeframe is not met, the ARCEP can:

- Suspend the rights of the operator in relation to its activities (for a maximum duration of three years).
- Impose a fine which will be proportionate to the seriousness of the breach and to the benefits drawn from such a breach by the operator (within the limits of 3 per cent of its net annual revenue, or €150,000 (~AUD\$236,773⁶⁶) in the event its previous annual revenue cannot be assessed).⁶⁷

⁶⁵ Communications Regulatory Authority Qatar (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework Annex 3: Quality of Service Benchmark Report, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

⁶⁶ As at 1 July 2018 based on rates on <https://www.xe.com/>.

⁶⁷ DLA Piper (2016) Telecommunications laws of the world - France, available at: <https://www.dlapiperintelligence.com/telecoms/index.html?t=overview&c=FR>.

3.5 New Zealand

In New Zealand the Commerce Commission (Commerce Commission) is responsible for implementing, monitoring and enforcing the New Zealand *Telecommunications Act 2001*, which regulates the supply of telecommunications services. The Commerce Commission has broad responsibility for regulation in New Zealand; it also has a mandate to enforce competition laws, as established under the *Commerce Act 1986*.

The Commerce Commission in 2009 stated:

*In our view, regulatory intervention should be scaled back in areas where it is no longer necessary to promote competition, and regulation should not impose or maintain burdens that are unnecessary.*⁶⁸

In alignment with this statement, the Commerce Commission does not appear to set minimum standards that providers must adhere to. The Commerce Commission provides performance information through its annual monitoring report,⁶⁹ and Stats NZ⁷⁰ provides further information at the whole of sector level.

The Commerce Commission has a number of Standard Terms Determinations which set out the terms on which telecommunications service providers must provide wholesale services regulated under the *Telecommunications Act 2001* to other telecommunications service providers.⁷¹

The New Zealand Telecommunications Forum (the Forum) is a member-based industry organisation that represents telecommunications providers in New Zealand. It provides neutral, independent information about telecommunications products and services, and how the industry works in New Zealand. In addition to this, it develops codes and guidelines to meet the needs of consumers, industry and government. These industry standards and codes are grouped broadly across five categories:

- compliance
- customer experience
- infrastructure and interconnections
- mobile phone services
- public services.⁷²

Not all codes are compulsory. However, once providers have signed an industry code they are expected to abide by it and some sanctions may be imposed by the industry forum.

⁶⁸ Commerce Commission (November 2010) Communique – The year in review 2009/10.

⁶⁹ Commerce Commission (2018) Monitoring reports, available at: <https://comcom.govt.nz/regulated-industries/telecommunications/monitoring-the-telecommunications-market>.

⁷⁰ New Zealand Government (2017) Internet service provider survey: 2017, available at: <https://www.stats.govt.nz/information-releases/internet-service-provider-survey-2017>.

⁷¹ Commerce Commission (2018) Standard Terms Determinations, available at: <http://www.comcom.govt.nz/regulated-industries/telecommunications/regulated-services/standard-terms-determinations/>.

⁷² NZ Telecommunications Forum Inc. (2018) Industry Standards & Guides, available at: <https://www.tcf.org.nz/industry/resources/publications/industry-standards-guides/>.

The New Zealand Telecommunications Forum in its Code Compliance Framework states that:

*A self-regulated compliance regime is clearly preferable from an industry perspective to one that is imposed on the industry. It is therefore important that these government expectations are taken seriously. The New Zealand Telecommunications Forum must be seen as an effective self-regulatory body to reduce government intervention.*⁷³

Service providers in New Zealand have set internal standards that they aim to meet outside of regulation. An example of this is Spark, the largest supplier of fixed phone lines, largest internet provider and the largest mobile provider (inclusive of Skinny, a division of Spark). Service attributes and associated targets that have been set by Spark are set out below.⁷⁴

New Zealand is also currently embarking on significant changes within the provision of telecommunication services through a series of major telecommunications policy initiatives aimed at accelerating the rollout of ultra-fast broadband. This shares some similarities with rollout of high speed broadband in Australia, but there are a number of differences between the projects including:

- The delivery model (Australia's NBN is being rolled out by a wholesale only Government Business Enterprise compared to the split of Telecom NZ into a wholesale operator and retailer in New Zealand).
- The scale of the rollout as a result of the relative size/population of each country.

Mandatory disconnection of the majority of fixed line services in Australia but not in New Zealand.⁷⁵

New Zealand has recently completed a review of its telecommunications legislation. In 2017, the New Zealand Government announced the details of a not yet passed reform package for the *Telecommunications Act 2001*. This package was accompanied by statements from the Office of the Minister for Communications that indicated the current regulatory settings are not delivering sufficient information to support adequate consumer choice, are over reliant on industry self-regulation, and are modest in their attempts to safeguard consumer interests when compared to Australia and the USA.⁷⁶

⁷³ NZ Telecommunications Forum Inc. (2012) Code Compliance Framework (CCF), available at: <https://www.tcf.org.nz/assets/codes/tcf-code-compliance-framework-endorsed-march-2012.pdf>.

⁷⁴ Spark NZ (2018) Service Levels, available at: <https://www.spark.co.nz/help/other/terms/policies/servicelevels/>.

⁷⁵ NBN Co Ltd. (2017) Australia & New Zealand broadband: Comparing apples with oranges..., available at: <https://www.nbnco.com.au/blog/the-nbn-project/australia-and-new-zealand-broadband-comparing-apples-with-oranges.html>.

⁷⁶ Ministry of business, Innovation and Employment (2017), Review of the *Telecommunications Act 2001*, available at: <http://www.mbie.govt.nz/info-services/sectors-industries/technology-communications/communications/regulating-the-telecommunications-sector/review-of-the-telecommunications-act-2001/final-decisions-june-2017>.

3.5.1 Connection

Telephone connections

There do not appear to be any publicly available minimum standards set out by regulatory bodies relating to connections across fixed line telephone and mobile services.

Internet connections

Given the recent rollout of the Ultra-fast broadband scheme and associated fibre lines, the New Zealand Telecommunications Forum has developed a code relating to customer experience during the transfer to this new fibre connection known as the *Customer Transfer Code for Fibre Services*. This aims to ensure customers can be actively using their fibre line within one business day of the transfer process.⁷⁷ The *Customer Transfer Code for Regulated Services* sets out practices that all providers in the supply chain must comply with. This sets out some timeframes that must be met by both the 'losing' and 'new' service provider.⁷⁸

3.5.2 Outages and faults

Whilst there appear to be no clear standards or rules set out by the Commerce Commission or New Zealand Telecommunications Forum relating to outages and faults, some telecommunication providers have set their own internal standards for this process. Table 12 outlines internal service targets set for service restoration across a range of different services by Spark (NZ's largest supplier of fixed phone lines, internet and mobile phones).⁷⁹

Table 12: Spark (NZ service provider) internal quality of service indicators⁸⁰

Service	Service Target (during normal service hours - Monday to Friday, 8am to 5.30pm)
Voice and Network Services	24 hours (reasonable endeavours)
Spark mobile network services	6 hours (reasonable endeavours)
Dedicated Internet Access Services	Major Metropolitan Areas: 6 hours Other Areas: 8 hours
Data network services.	6 hours (reasonable endeavours)

⁷⁷ NZ Telecommunications Forum Inc. (2016) Customer Transfer Code for Fibre Services, available at: <https://www.tcf.org.nz/industry/standards-compliance/customer-experience/customer-transfer-fibre/>.

⁷⁸ NZ Telecommunications Forum Inc. (2013) Code for Transfer of Telecommunications Services, available at: <https://www.tcf.org.nz/industry/standards-compliance/customer-experience/customer-transfer-regulated-services/regulated-customer-transfer-code.PDF>.

⁷⁹ Spark NZ (2018) Service Levels, available at: <https://www.spark.co.nz/help/other/terms/policies/servicelevels/>.

⁸⁰ Spark NZ (2018) Service Levels, available at: <https://www.spark.co.nz/help/other/terms/policies/servicelevels/>.

3.5.3 Penalties for non-compliance

The New Zealand Telecommunications Forum has developed a Code Compliance Framework, under which members/service providers become signatories on selected codes. One of the objectives of the Code Compliance Framework is to 'provide strong incentives for Code Signatories to comply; and sanctions for non-compliance'.⁸¹

These codes include measures regarding the connection process when consumers are beginning new services. Sanctions applied for non-compliance are not financial in nature. The level of the sanction is graded depending on the level of impact, code category and/or failure for the non-compliant provider to implement remedial action.

There are nine sanctions detailed within the Code Compliance Framework. These range from initiating an investigation, announcing a breach on the New Zealand Telecommunications Forum website, public announcements and escalation to the Commerce Commission for action.⁸²

In addition to these sanctions, consumers are covered under the *Consumer Guarantees Act 1993* for phone, mobile and internet services. This Act gives consumers the right to claim for compensation for any losses arising from breaches of services guarantees.⁸³

⁸¹ NZ Telecommunications Forum Inc. (2012) Code Compliance Framework (CCF), available at: <https://www.tcf.org.nz/assets/codes/tcf-code-compliance-framework-endorsed-march-2012.pdf>.

⁸² NZ Telecommunications Forum Inc. (2012) Code Compliance Framework (CCF), available at: <https://www.tcf.org.nz/assets/codes/tcf-code-compliance-framework-endorsed-march-2012.pdf>.

⁸³ New Zealand Government (2018) Customer Protection -Phone and broadband services, available at: <https://www.consumerprotection.govt.nz/help-product-service/phone-broadband-services/>

3.6 Singapore

In Singapore, the Infocomm Media Development Authority (IMDA) is responsible for regulating ‘the converging Infocomm and media sectors, alongside safeguarding consumer interests.’ The IMDA is a statutory board within the Singapore government, established under the *Info-communications Media Development Authority Act 2016*⁸⁴. It was formed in 2016, replacing two legacy bodies in response to the growing convergence of information technology and telephony.⁸⁵

The IMDA has regulatory authority over a variety of industries. In the telecommunications industry, its core responsibilities relate to licensing of industry participants and regulatory tools to safeguard service reliability within the *Telecommunications Act 1999*.⁸⁶

IMDA’s stated ambition is to facilitate the deepening of regulatory capabilities for the Infocomm media sector, safeguarding consumer interests and fostering pro-enterprise regulations. IMDA is complemented by the Personal Data Protection Commission, which has the mandate of safeguarding personal data.⁸⁷

IMDA sets and monitors quality of service measures to ensure the performance of key service providers against basic telecommunications, mobile, internet access and fibre connection services. Operators are required to submit periodic reports of their service quality to the regulator, based on the quoted quality of service standards. These quality of service reports are split by service type:

- Mobile (2G and 3G services)
- Broadband Access Services
- Basic Telecommunications Services
- Fibre Connection Services (Netlink Trust is the sole appointed ‘Network Company’ for Singapore’s Next Generation NBN).

The sections below outline reliability standards which operators are measured against, by service type. The regulator regularly reviews the requirements to take into account industry and technology changes, as well as changes in consumer demand, to ensure that the requirements remain relevant. Where standards are not explicitly monitored against a quantitative standard, they are publicly reported to promote self-regulation.

3.6.1 Connection

Telephone connections

The IMDA has set standards which telecommunications service providers either must abide by or which are used for monitoring purposes.

The primary measure for fixed telephone services in Singapore relates to new service connection time, with call success rate, call setup time and call drop-out rate used in relation to mobile telephone services.

⁸⁴ Singapore Government: Info-communications Development Authority of Singapore (2018) Acts and Regulations, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/acts-and-regulations>.

⁸⁵ Singapore Government: Info-communications Development Authority of Singapore (2016) Role of GovTech and Role of IMDA, available at: <https://www.tech.gov.sg/IDA.html>

⁸⁶ Singapore Government Info-communications Media Development Authority (2018) Home, available at: <https://www.imda.gov.sg/>.

⁸⁷ Singapore Government: Info-communications Media Development Authority (2018) What We Do, available at: <https://www.imda.gov.sg/about/what-we-do>.

Table 13: Telephone quality of service indicators – Singapore⁸⁸

Standard	Fixed telephone service	Mobile service
New service connection times	95% within 3 working days and 100% within 7 working days (for fibre connections) 95% within 5 working days or 100% within 9 working days (for copper or co-axial connections)	n/a
Call success rate	n/a	>99% across all localities >95% in the busiest call localities >70% for each cell locality
Average call set up time	n/a	For monitoring only
Call drop-out rate	n/a	<1% on average <2% during busy hour and hour with worst performance

Data connections

Broadband services have measures that include network latency, utilisation and packet loss, though packet loss is only used for monitoring purposes.

Table 14: Data quality of service indicators – Singapore⁸⁹

Standard	Broadband
New service connection times	NetLink Trust (a large provider): ≤ 98% within 3 business days of the service order or request for activation. 100% within 7 business days. All other services are for monitoring only
Network latency (local/international)	≤ 50 milliseconds (ADSL or cable - local) or ≤30 milliseconds (local fibre - local) ≤ 300 milliseconds (international)
Bandwidth utilisation	≤ 90% (not to exceed 90% for three or more consecutive months)
Packet loss (local/international)	Relates to fibre services (for monitoring only)

⁸⁸ Singapore Government: Info-communications Development Authority of Singapore (2018) Quality of Service Reports, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-the-sale-of-telecommunication-equipment/compliance-to-imda-standards/quality-of-service>.

⁸⁹ Singapore Government: Info-communications Development Authority of Singapore (2018) Quality of Service Reports, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-the-sale-of-telecommunication-equipment/compliance-to-imda-standards/quality-of-service>.

1.3.3 Outages and faults

The number of faults and associated repair times in Singapore are only measured in relation to fixed telephones services. Metrics for mobile and internet services are measured in terms of outage times.

Other metrics used are network availability, congestion (used for mobile services but only used for monitoring) and customer service (measured for fixed telephone connections by average waiting time and internet services by number of complaints). Both of these metrics however, are only used for monitoring purposes rather than strict compliance.

Table 15: Telephone quality of service indicators – Singapore⁹⁰

Standard	Fixed telephones service	Mobile service	Internet services
Fault repair time	At least 90% within 24 hours At least 99.9% within 72 hours	n/a	n/a
Number of faults reported	Less than 0.5%	n/a	n/a
Outages time	n/a	For monitoring purposes only (3G services only)	<0.01%
Customer service	Average waiting time (for monitoring purposes only)	n/a	Number of customer complaints received per 1,000 subscribers (for monitoring purposes only)
Network availability and congestion	n/a	For monitoring purposes only (3G services only)	n/a

3.6.4 Penalties for non-compliance

The Singaporean regulator has the power to impose financial penalties on service operators who fail to comply with the telecommunications quality of service standards. These judgements are based on the periodic quality of service reports submitted. Financial penalties range from S\$5,000 (~AUD\$ 4,955) to a maximum of S\$50,000 (~AUD\$49,550) for each individual instance of non-compliance on a monthly basis. Both the magnitude of the fault and mitigating factors are considered when determining the level of penalty. This includes:

- the extent of impact of the non-compliance
- the cause of the non-compliance
- the efforts taken by the service providers to meet the quality of service standards
- any challenges faced by the service providers in meeting the quality of service standards.

In situations of serious failure and/or repeated compliance breaches, the regulator has the authority to impose financial penalties greater than S\$50,000⁹¹ (~AUD\$49,550).

⁹⁰ Singapore Government: Info-communications Development Authority of Singapore (2018) Quality of Service Reports, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-the-sale-of-telecommunication-equipment/compliance-to-imda-standards/quality-of-service/quality-of-service-reports>.

3.7 United Kingdom (UK)

Ofcom is the communications regulator in the UK. It is responsible for the regulation of a number of communication streams; TV, radio and video-on demand sectors, fixed line telecommunications, mobiles, postal services and the airwaves over which wireless devices operate.⁹²

Ofcom is responsible for determining a set of voluntary codes of practice to enable a high standard of telecommunication services, to which service providers can become signatories. As of March 2019 there will be five voluntary codes:

- New Voluntary Codes of Practice on Broadband Speed (from 1 March 2019)
- Voluntary Code of Practice: Business Broadband Speeds 2016
- Voluntary Code of Practice: Residential Broadband Speeds (updated) 2015
- Voluntary Industry Code of Practice for the sales and marketing of subscriptions to mobile networks
- Customer Codes of Practice for handling complaints and resolving disputes.

To support the functioning of a competitive telecommunications market in the UK, Ofcom completes a review of competition in the provision of leased lines in the UK every three years, called the 'Business Connectivity Market Review'. This Review serves to identify operators that display significant market power. Following this Review, Ofcom has the option to provide regulations designed to address concerns of significant market power. The latest review was conducted in 2016 with Ofcom finding that strategic market power was held by both KCOM and BT in different geographical regions and across different technologies. As a result of this finding Ofcom has included limits on the prices that BT can charge for services and targets set for certain elements relating to reliability. Some of the elements include the speed of completing orders (ie connection times) and proportion of faults fixed within a certain timeframe.⁹³ This follows the 2014 decision where the regulator identified there was sufficient competition in some geographic areas and thus regulations would be rolled back in those areas.⁹⁴

In 2017, Ofcom consulted on a proposal to introduce an automatic compensation scheme to protect landline and broadband consumers. As part of the consultation process, service providers put forward suggestions for an industry-led scheme which has now been accepted by Ofcom as meeting the needs for a fair and effective automatic compensation scheme. The scheme is expected to come into effect from early 2019.⁹⁵

In addition to the protections outlined above, Ofcom publishes an annual service quality report comparing service quality across a number of channels, enabling customers to make informed decisions and giving providers an incentive to improve the quality of service they provide.

⁹¹ Singapore Government: Info-communications Media Development Authority (2018) Quality of Service, available at: <https://www.imda.gov.sg/regulations-licensing-and-consultations/licensing/licences/licence-for-the-sale-of-telecommunication-equipment/compliance-to-imda-standards/quality-of-service>.

⁹² Ofcom (2018) What is Ofcom? available at: <https://www.ofcom.org.uk/about-ofcom/what-is-ofcom>.

⁹³ Ofcom (2016) Business Connectivity Market Review – Volume I, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0015/72303/bcmr-final-statement-volume-one.pdf.

⁹⁴ Ofcom (2014) Consultation on Draft QoS Policy and Draft QoS Regulatory Framework, Annex 3, available at: <http://www.motc.gov.qa/sites/default/files/documents/Annex%203%20-%20QoS%20benchmark%20report.pdf>.

⁹⁵ Ofcom (2017) Automatic Compensation Protecting consumers from service quality problems, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0026/107693/Statement-automatic-compensation.pdf.

3.7.1 Connection

Telephone connections

New installation appointments met

There do not appear to be any minimum standards providing for the installation of a new service in the UK. However, in its annual service quality report, Ofcom publishes the average number of days taken for landline and broadband services to be provided within their annual service quality report. In their 2017 report, it reported an average of 13 calendar days for a landline or broadband order to be delivered. The report details the proportion of appointments missed relating to installation of landline or broadband services for Openreach and Virgin Media.⁹⁶

Under the new automatic compensation scheme, there will be greater focus on the time taken to connect services. For example, compensation will be available to the consumer where there is a delay in the commencement of a landline and/or broadband service beyond the date committed to by the service provider.

Data connections

The voluntary Codes of Practice on Better Broadband Speeds do not explicitly set out the minimum speed or quality of service, instead focusing on a number of key principles including providing consumers with more realistic speed estimates at the point of sale (including estimates for peak times).

While there are no clearly defined standards set out for quality within these codes, consumers have the right to exit their contract if the delivered speed falls below the contracted speed over a sustained period. This consumer protection within the code applies to all customers regardless of their broadband technology.⁹⁷

In addition to these codes, Ofcom requires annual reporting by service providers against quality and performance, which Ofcom publicly releases.⁹⁸

Ofcom also provides an interactive tool that enables consumers to identify their speed of broadband and mobile availability from four main service providers at different geographical locations, filtering for voice or data services, inside or outside use and with or without 4G coverage.⁹⁹

New installation appointments met

New installation appointment keeping requirements for broadband services will be covered under the automatic compensation scheme from 2019. As outlined above, compensation will be available to the consumer where there is a delay in the commencement of a broadband service beyond the date committed to by the service provider.

⁹⁶ Ofcom (2017) Automatic Compensation Protecting consumers from service quality problems, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0026/107693/Statement-automatic-compensation.pdf.

⁹⁷ Ofcom (2018) Better Broadband Speeds Information: Voluntary Codes of Practice, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0024/111696/statement-broadband-speeds.pdf.

⁹⁸ Ofcom (2018) Choosing the best broadband, mobile and landline provider Comparing Service Quality 2017, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0023/113639/full-report.pdf.

⁹⁹ Ofcom (Accessed June 2018) Mobile and broadband checker, available at: <https://checker.ofcom.org.uk/mobile-coverage>.

3.7.2 Outages and faults

There do not currently appear to be any minimum standards set out for telecommunications service providers in repairing outages and faults. However, Ofcom details the importance of quick resolutions should any service faults occur and acknowledge that often these issues can originate at home, therefore requiring effective customer service to resolve these problems. In its most recent annual report, Ofcom did not provide information on the time taken for landline and broadband providers to repair faults, however it will start reporting on this in 2019.¹⁰⁰

Whilst not providing the actual time taken to repair faults, the report detailed the proportion of appointments missed by major service providers, Openreach and Virgin Media. Across landline, broadband and mobile providers, Ofcom provide customer service metrics including the average call waiting time and customer satisfaction with service provider complaints handling.¹⁰¹

In the statement released by Ofcom relating to the 2019 automatic compensation scheme, Ofcom announced that any repair that is not fully fixed within two full working days will incur automatic compensation. It also sets out compensation in relation to missed appointments.¹⁰²

3.7.3 Penalties for non-compliance

The 2019 automatic compensation scheme will provide compensation to consumers in cases where there are delayed repairs, installations and missed appointments. The indicative levels of compensation will be in line with Table 16.¹⁰³

¹⁰⁰ Ofcom (2017) The Office of Communications Annual Report & Accounts For the period 1 April 2016 to 31 March 2017, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0021/104358/annual-report-2016-accessible.pdf.

¹⁰¹ Ofcom (2018) Choosing the best broadband, mobile and landline provider Comparing Service Quality 2017, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0023/113639/full-report.pdf.

¹⁰² Ofcom (2017) Automatic Compensation Protecting consumers from service quality problems, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0026/107693/Statement-automatic-compensation.pdf.

¹⁰³ Ofcom (2017) Automatic Compensation Protecting consumers from service quality problems, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0026/107693/Statement-automatic-compensation.pdf.

Table 16: Proposed levels of consumer compensation (to come into effect from 2019)¹⁰⁴

Problem	A landline or broadband customer would be entitled to compensation if...	Amount of compensation
Delayed repair following loss of service	Their service has stopped working and it is not fully fixed after two full working days	£8 (~\$AUD14) for each calendar day that the service is not repaired
Missed appointments	An engineer does not turn up for a scheduled appointment, or it is cancelled with less than 24 hours' notice.	£25 (~\$AUD45) per missed appointment
Delays with the start of a new service	Their provider promises to start a new service on a particular date, but fails to do so.	£5 (~\$AUD9) for each calendar day of delay, including the missed start date

Ofcom publicly releases data on the performance of providers in its annual service quality report. This serves as a means to 'name and shame' poor performance, complementing the ability of consumers to exit contracts without penalty if downloads remain below a minimum guaranteed speed. This serves to reward those providers who are reliable and perform well.

¹⁰⁴ Ofcom (2017) Automatic Compensation, Protecting consumers from service quality problems, available at: https://www.ofcom.org.uk/data/assets/pdf_file/0026/107693/Statement-automatic-compensation.pdf

3.8 United States of America (USA)

In the USA, service reliability, as a component of service quality, is a combined responsibility of the federal government and each individual state government.

The Federal Communications Commission (FCC) is responsible for overall regulation of interstate and international telecommunications across the 50 states, the District of Columbia and USA territories. The FCC provides a set of best practices that providers are encouraged to follow, with over 1,000 listed, relevant to a number of services.¹⁰⁵ The Commission is advised by a series of advisory committees, with the primary committee relating to the reliability of telecommunications services being the Communications, Security, Reliability and Interoperability Council.

Intrastate telecommunications, on the other hand, are regulated by different bodies within each state, such as the Public Utility Commission in Texas.¹⁰⁶ Under the *Telecommunications Act 1996*, service quality standards fall under intrastate regulation, and are therefore the purview of individual states. Each state appears to implement mechanisms differently. Some states apply particular instruments to individual service providers, often in response to issues with the quality of their service; for instance, the state of New York established a service quality incentive plan with Verizon, one of the main service providers, due to low levels of service quality.¹⁰⁷ Other states, like California, require all service providers to be part of public reporting against service quality standards.

3.8.1 Connection

The FCC provides a number of best practices relating to the quality and performance of telecommunications service providers. But consistent with legislation, states are responsible for establishing specific standards or requirements; these could not reasonably be identified for all states through a desktop review of publicly available information.¹⁰⁸

Within the FCC's customer service standards, there are also minimum standards relating to the installation of cable systems. The standards state that installations which are located up to 125 feet (~38m) from existing distribution systems must be performed within seven days of the order being placed. These standards must be met at least 95 per cent of the time under normal operating conditions.¹⁰⁹

¹⁰⁵ Federal Communications Commission (2018) CSRIC Best Practices, available at: <https://opendata.fcc.gov/Public-Safety/CSRIC-Best-Practices/qb45-rw2t/data>.

¹⁰⁶ DLA Piper Intelligence (2016) Telecommunications laws of the world - United States, available at: <https://www.dlapiperintelligence.com/telecoms/index.html?c=US&c2=&go-button=GO&t=overview>.

¹⁰⁷ Proceeding on Motion of the Commission to Consider the Adequacy of Verizon New York Inc.'s Retail Service Quality Processes and Programs (Accessed June 2018), available at: <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CD5BCD03FE89ACA085257687006F389F?OpenDocument>.

¹⁰⁸ See: NY Department of Public Service (Accessed June 2018) Telecommunications – Home, available at: <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/7F830C1FF90AB31285257687006F388D?OpenDocument>.

¹⁰⁹ Federal Communications Commission (2016) Customer Service Standards, available at: <https://www.fcc.gov/media/customer-service-standards>.

Data connections

The FCC also provides an annual report into the performance of fixed broadband providers across a number of different technologies. The report provides both the maximum advertised speed and median speed delivered, the time taken for one data packet to travel from one point to another in a network (known as latency), and a range of other technical safeguards of performance.¹¹⁰ A public report of this nature supports consumer choice by making transparent the performance of different service providers and therefore brings about accountability.

3.8.2 Outages and faults

The FCC provides a set of customer service standards to ensure the quality of customer service by cable operators. This standard states that the cable operator must begin working on a service interruption no later than 24 hours after being notified of the problem. The standards state that metrics relating to outages must be met at least 95 per cent of the time.¹¹¹ There do not appear to be any FCC standards associated with outages involving other forms of telecommunications.

In addition, the FCC provides a set of best practices that they encourage providers to abide by. The majority of best practices relating to outages and faults are intended to support continuity of critical services.

Again, any specific quality standards or requirements are established by individual States.

3.8.3 Penalties for non-compliance

The FCC has seven bureaus that assist in delivering its required functions. Under the *Telecommunications Act of 1996* and FCC rules, the Enforcement Bureau has broad responsibility for enforcing sanctions and penalties in the telecommunications industry. The FCC provides an annual report on the performance of fixed line providers, which in effect identifies those providers not operating at a high level.

Under the Act, individual States across the USA are responsible for enforcing telecommunications service quality standards or requirements. It may be the case that enforcement can be escalated to the FCC at a certain point, but this was not clear from publicly available information.¹¹²

¹¹⁰ Federal Communications Commission (2016) Measuring Fixed Broadband Report - 2016, available at: <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-report-2016>.

¹¹¹ Federal Communications Commission (2016) Customer Service Standards, available at: <https://www.fcc.gov/media/customer-service-standards>.

¹¹² NY Department of Public Service (Accessed June 2018) Telecommunications – Home, available at: <http://www3.dps.ny.gov/W/PSCWeb.nsf/All/7F830C1FF90AB31285257687006F388D?OpenDocument>.

4. Reliability in the Australian energy market

The section below outlines the reliability safeguards and frameworks in place within the Australian energy market. For the purposes of this report, the energy market consists of the electricity and gas markets in Australia.

4.1 Energy sector

Australia's energy industry is regulated by the Australian Energy Regulator (AER). The AER is established under the *National Electricity (South Australia) Act 1996*, which applies in all states and territories (despite being established under South Australian law) to the wholesale and retail electricity network and covered gas pipelines, with the exception of Western Australia. The AER's role is complemented by the Australian Energy Market Commission (the AEMC), which is also established under the Act, and is responsible for policy advice and rule making. The AEMC has responsibility for overseeing reliability in the energy sector, governed by a Reliability Panel as part of its institutional arrangements¹¹³.

The energy market in Australia is regulated at the state level. However, the Council of Australian Governments established the AEMC to make decisions which are implemented by the AER. These are binding on states that have passed the National Energy Retail Law.

The AER also has a 'Reliability Panel', which forms part of the AEMC's institutional arrangements, reviews and reports on the safety, security and reliability of the national electricity system.

The Panel is comprised of members who represent a range of participants in the national electricity market, including consumer groups, generators, network businesses, retailers and the Australian Energy Market Operator. The Panel determines standards and some of the guidelines used by AEMO and participants which help to maintain a secure and reliable power system for consumers.

The national Service Target Performance Incentive

The national Service Target Performance Incentive Scheme (STPIS) is intended to balance the incentives to reduce expenditure with the need to maintain or improve service quality. It achieves this by providing financial incentives to distributors to maintain and improve service performance where customers are willing to pay for these improvements.¹¹⁴

The STPIS establishes targets based on historical performance, and provides financial rewards for distributors exceeding performance targets and financial penalties for distributors failing to meet targets. These rewards and penalties are calculated by taking into account the value of customer reliability. This aligns the distributors' incentives with the long term interests of consumers, which is consistent with the National Electricity Objective.

The STPIS has two components, the s-factor component and the guaranteed service levels (GSL) scheme. The s-factor component adjusts the revenue that a distributor earns depending on reliability of supply and customer service performance. The GSL scheme sets threshold levels of service for distributors to achieve and requires direct payment to customers who experience service levels below those at the predetermined level.

¹¹³ S38, *National Electricity (South Australia) Act 1996*, available at: [https://www.legislation.sa.gov.au/LZ/C/A/NATIONAL%20ELECTRICITY%20\(SOUTH%20AUSTRALIA\)%20ACT%201996.aspx](https://www.legislation.sa.gov.au/LZ/C/A/NATIONAL%20ELECTRICITY%20(SOUTH%20AUSTRALIA)%20ACT%201996.aspx).

¹¹⁴ Australian Energy Regulator (2009) Electricity distribution network service providers—service target performance incentive scheme.

4.2 Connection

As of July 2005, the AER assumed the ACCC's responsibilities for the regulation of transmission revenues in the National Electricity Market. Clause 6.2.4 of the National Electricity Rules states that the regulator may establish service standards for electricity transmission network service providers.¹¹⁵

New service connection times

New connections or changes to existing connections in the energy market can sometimes take several months.¹¹⁶ States and territories in Australia have set GSLs which relate to targets around the timeliness of connections, reconnections and notices of planned interruptions. For instance, Victoria requires that:

- New connections are made at least 10 business days after request (where no date is agreed with the customer).¹¹⁷
- Where the distribution entity does not attend an appointment, the customer is eligible for a payment.¹¹⁸ Consumers may be eligible for payments should the criteria not be met. Different states have different criteria and payments for breaches. For instance, Victoria specifies that if a distributor is more than 15 minutes late for an appointment, it must pay the customer \$30.¹¹⁹

4.3 Outages and faults

The AER (Retail Law) Performance Reporting Procedures and Guidelines set out the manner in which regulated entities must report information to the AER. This information feeds into the annual performance report; however, within this guideline there does not appear to be reporting of outages relating to faults.¹²⁰

The report does, however, provide customer service metrics for each individual retailer. These include the percentage of calls answered in 30 seconds, average time before a call is answered and percentage of calls abandoned before being answered.¹²¹

¹¹⁵ Australian Energy Regulator (accessed June 2018) Service standards guidelines, available at: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/service-standards-guidelines>.

¹¹⁶ Australian Energy Regulator & Australian Competition and Consumer Commission (2013) Energy - Connection electricity or gas to your property for the first time. Canberra.

¹¹⁷ Essential Services Commission of South Australia (2015) Electricity Distribution Code, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/512/20141007-Elec-DistributionCodeEDC12.pdf.aspx?Embed=Y>.

¹¹⁸ Queensland Government (2018) Electricity Distribution Network Code, available at: <http://www.qca.org.au/Electricity/Reviews/Electricity-Distribution-Network-Code/Final-Report/Current-version-of-the-Electricity-Distribution-Ne#finalpos>.

¹¹⁹ Essential Services Commission of South Australia (2015) Electricity Distribution Code, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/512/20141007-Elec-DistributionCodeEDC12.pdf.aspx?Embed=Y>.

¹²⁰ Australian Energy Regulator (2018) AER (Retail Law) Performance Reporting Procedures and Guidelines, available at: https://www.aer.gov.au/system/files/AER%20%28Retail%20Law%29%20Performance%20Reporting%20Procedures%20and%20Guidelines%20-%20April%202018_0.pdf.

¹²¹ Australian Energy Regulator (2017) Annual report on compliance & performance of the retail energy market 2016–17.

4.4 Penalties for non-compliance

The AER is responsible for monitoring, investigating and enforcing compliance in line with relevant legislation and laws across both the wholesale and retail sectors. Section 15 of the *Electricity Law* and Section 27 of the *Gas Law* outline the Regulator's functions and powers in the wholesale market and the *Retail Law* includes the regulators responsibility in ensuring regulated entities meet their obligations in the retail market.^{122, 123}

The annual performance report published by the Regulator details the number of infringements relating to breaches of Retail Law and Retail Rules. In 2016–17 there were 21 infringement notices that totalled \$420,000 paid by businesses.¹²⁴

The Electricity Distribution Network Code sets out GSL.¹²⁵ In each jurisdiction, penalties are payable to consumers should certain criteria outlined in the GSL not be met.¹²⁶ These are usually small payments for each breach payable directly to the consumer, ranging from \$28 to \$605 depending on the type and duration of the infringement.¹²⁷ Jurisdictions may also apply caps to the amounts payable to each consumer in a given year under the scheme.

¹²² Australian Energy Regulator (Accessed June 2018) Enforcement matters - Wholesale market, available: <https://www.aer.gov.au/wholesale-markets/enforcement-matters>.

¹²³ Australian Energy Regulator (Accessed June 2018) Compliance - Retail Market, available at: <https://www.aer.gov.au/retail-markets/compliance>.

¹²⁴ Australian Energy Regulator (2017) Annual report on compliance & performance of the retail energy market 2016–17.

¹²⁵ Queensland Competition Authority (Accessed June 2018) Electricity Distribution Network Code, available at: <http://www.qca.org.au/Electricity/Reviews/Electricity-Distribution-Network-Code>.

¹²⁶ Victorian Government: Environment, Land, Water and Planning (Accessed June 2018) Customer Compensation, available at: <https://www.energy.vic.gov.au/safety-and-emergencies/power-outages/customer-compensation>.

¹²⁷ Collected Guaranteed Service Level information (Accessed June 2018) available at:
<https://www.energy.vic.gov.au/safety-and-emergencies/power-outages/customer-compensation>
<https://www.essentialenergy.com.au/about-us/customer-and-regulatory-information/guaranteed-service-level-scheme>
https://www.powerwater.com.au/networks_and_infrastructure/power_networks/guaranteed_service_levels
<https://www.tasnetworks.com.au/about-us/policies/supply-reliability-guarantee/>.

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