

**Australian Government** 

# Connected

A guide on how wireless technology enables connectivity in your home and community



In Australia, electromagnetic energy (EME) that enables wireless connectivity is researched, regulated and safe.

Find out more at eme.gov.au

THE SCIENCE OF SEFE CONNECTION © Commonwealth of Australia 2025

ISBN: 978-1-922879-79-0 (Digital) ISBN: 978-1-922879-79-0 (Print)

### Ownership of intellectual property rights in this publication

Unless otherwise noted, copyright (and any other intellectual property rights, if any) in this publication is owned by the Commonwealth of Australia (referred to below as the Commonwealth).

#### Disclaimer

The material contained in this publication is made available on the understanding that the Commonwealth is not providing professional advice, and that users exercise their own skill and care with respect to its use, and seek independent advice if necessary.

The Commonwealth makes no representations or warranties as to the contents or accuracy of the information contained in this publication. To the extent permitted by law, the Commonwealth disclaims liability to any person or organisation in respect of anything done, or omitted to be done, in reliance upon information contained in this publication.

#### **Creative Commons licence**



With the exception of (a) the Coat of Arms; (b) the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts photos and graphics; (c) content supplied by third parties; (d) content otherwise labelled; copyright in this publication is licensed under a Creative Commons BY Attribution 4.0 International Licence.

#### Use of the Coat of Arms

The Department of the Prime Minister and Cabinet sets the terms under which the Coat of Arms is used. Please refer to the Commonwealth Coat of Arms – Information and Guidelines publication available at http://www.pmc.gov.au.

#### Contact us

This publication is available in PDF version. All other rights are reserved, including in relation to any departmental logos or trademarks which may exist. For enquiries regarding the licence and any use of this publication, please contact:

Email: eme@communications.gov.au

Website: www.eme.gov.au

## **Table of Contents**

Introduction	1
What is wireless and mobile connectivity and how is it used in my home	2
Understanding the different types of wireless technology	2
What is Wi-Fi?	2
What is wireless/mobile connectivity?	2
What are the main differences?	3
What about Bluetooth?	3
Wireless technology in your home	4
Getting the most out of your Wi-Fi connection	6
Wireless and mobile connectivity in your community	8
Emergency services	8
Retailers and businesses	11
Schools and learning institutions	11
How is this technology deployed in your community	12
Spectrum allocations	12
Location of telecommunications deployments	12
Powers and Immunities Framework	14
Need to expand or build new networks	14
Infrastructure sharing	15
Radio Frequency (RF) Electromagnetic Energy from telecommunications (EME)	15
The role of connectivity in enabling digital inclusion	16
Glossary	18

The Australian Government is committed to ensuring all Australians can benefit from a smarter more connected future.

0

## Introduction

Connectivity is crucial in today's increasingly digital world and a key part of modern society.

#### It provides access to essential services for people both inside and outside their home, and for critical workers in our communities.

This guide provides information on how wireless connectivity is used in your home and in communities across Australia, including tips on how to get the most out of your home network.

This resource has been developed to support the Australian Government's efforts in fostering a more inclusive and equitable society for all, in the digital age.

We all know that access to modern telecommunications technologies, such as wireless connectivity, is a fundamental enabler of social equity and opportunity. Australians expect this connectivity and deserve to be able to access it anytime and anywhere.

With more services and applications moving to online only models the need for reliable wireless networks is more important than ever, to support this increased demand.

Homes across Australia rely on this connectivity on a daily basis to access working from home facilities, remote learning, personal administration and telehealth support, as well as entertainment and other applications. But it isn't just your personal use that makes this connectivity essential – schools, hospitals, businesses and emergency services also rely on this technology to undertake daily operations in your community.

As our society becomes more digitally dependent on technology, it is crucial to ensure all Australians have access to the digital tools they need to actively participate in society, regardless of their socio-economic circumstances or geo-location. Prioritising connectivity is essential in bridging the digital divide as our reliance on this connectivity continues to evolve.

To support this increased demand for connectivity carriers often need to install new or upgrade their infrastructure to provide adequate and reliable coverage in communities. This includes a need for carriers to install telecommunications infrastructure in close proximity to the area they are intended to service, which is why you may see more telecommunications equipment being deployed in your community.

It is important to remember that in Australia there are strict safety regulations to ensure the electromagnetic energy or EME emitted, from telecommunications is researched, regulated and safe.

The Australian Government is committed to ensuring all Australians can benefit from a smarter more connected future.

## What is wireless and mobile connectivity and how is it used in my home

## Understanding the different types of wireless technology

In today's digital world, the terms "Wi-Fi" and "mobile/wireless connectivity" are often used interchangeably to describe wireless technology. However, they refer to different technologies and usage.

Understanding the differences between these technologies will help you make informed decisions about your connectivity needs. While both Wi-Fi and mobile/wireless connectivity provide essential access to the internet, they are used differently depending on their need.

### What is Wi-Fi?

Wi-Fi is technology that enables devices to connect to the internet and communicate with each other over a local area network (LAN), using radio waves. It operates primarily in the 2.4 GHz and 5GHz frequency bands.

Wi-Fi is used in homes, offices and public places, providing high-speed internet access simultaneously to multiple devices in the same location.

Key Features:

- Set-up: requires a wireless router or access point that connects to a broadband internet source.
- Devices: commonly used by smartphones, laptops, tablets, smart home devices that can include TVs, Fridges, security cameras and health monitoring systems (e.g blood glucose monitors).

- Range: it is possible for WiFi coverage to extend to a range of a few hundred metres, depending on environmental and signal obstacles, such as electrical interferences, other mobile devices, buildings and infrastructure e.g. walls, windows and some materials like concrete, metal and plaster to name a few.
- Speed: generally provides high-data transfer rates, which may vary depending on Wi-Fi standards (Wi-Fi 5, Wi-Fi 6).

### What is wireless/ mobile connectivity?

Wireless or mobile connectivity, refers to internet access enabled through mobile networks. This includes technologies such as 4G and 5G, and their predecessors (3G, 2G, 1G), which allow devices to connect remotely to the internet without needing a wired connection.

Key features:

- Set-up: requires a mobile device with a sim card or an enabled hot-spot feature, with no additional equipment needed.
- Devices: used mostly by smartphones, laptops, tablets and smartmetres.
- Range: coverage can extend to large areas, depending on your network provider's telecommunications infrastructure.
- Speed: can vary depending on the technology and strength of the signal (in Australia 5G, currently provides the fastest speeds available).

## While both Wi-Fi and mobile/wireless connectivity provide essential access to the internet, they are used differently depending on their need.

## What are the main differences?

#### Coverage and quality of connection

Wi-Fi: limited to specific locations (homes, cafes, offices, hospitals etc), connecting devices to the internet through a local network.

Wireless/Mobile connectivity: broader coverage enabling devices to connect to the internet remotely through cellular networks.

#### Speed and stability

Wi-Fi: ability to provide fast speeds for transfer of data and stable connection for local usage, pending quality of equipment to enable connection.

Wireless/Mobile connectivity: speed and stability can vary depending on network congestion and distance from telecommunications infrastructure (e.g. mobile base stations, towers and small cells).

#### Costs

Wi-Fi: usually fixed monthly costs included in home internet plans.

Wireless/Mobile connectivity: included in data plans that vary in price and features pending usage and network provider.

#### What about Bluetooth?

A different type of wireless technology which may be frequently used in your home is Bluetooth. Bluetooth uses short-range, device-to-device communication, while Wi-Fi provides Local area networking and internet access. Bluetooth ranges up to approximately 10 metres whereas the range of Wi-Fi is hundreds of metres.

All of these technologies use radiofrequency electromagnetic energy (RF EME or EME) to transmit information. The levels of EME emitted by these devices and the infrastructure or equipment that enables the connectivity is very low and well below the safety limits specified in Australia.

### Wireless technology in your home

Wireless technology is an essential part of every day life in homes across Australia.

The applications and devices using wireless technologies in our homes are continually evolving and provide enhanced functionality not only for home automation but to enable us to effectively participate in modern society.

The wireless technology mostly used in your home that enables these applications to operate effectively, is through a Wi-Fi network. Wireless routers enable access to the internet throughout your home through this network. It allows multiple devices including smartphones, tablets, laptops and entertainment devices to connect simultaneously. This connectivity allows us to work from home, study remotely and facilitates access to essential healthcare, Government and other services when needed.

Some of the other uses for this technology in your home include:

#### Smart home applications and devices

Every day, more and more homes are using smart applications and devices for home automation. This includes smart security cameras, televisions, lighting, heating and cooling systems that connect to your home Wi-Fi network and allow you to control them in 'real-time' remotely via your smartphone.

For example, modern security systems such as cameras, alarms and Smart doorbells use Wi-Fi technology in your home to connect directly to your Smartphone, allowing you to monitor activity from your device, receive security alerts and interact with visitors.

#### Entertainment

Wireless technology facilitates access to music and video streaming services from your own home device, such as Smartphones, Smart TVs, tablets and laptops through Wi-Fi networks (outside of streaming service costs).

#### Health monitoring devices

Some health and wellbeing monitoring devices such as Glucose monitors, fitness trackers, smart scales and other health monitors use Wi-Fi technology to integrate data from the applications to your Smart device (e.g. Smartphone or tablet).

This allows users to monitor and track their health data from anywhere in the home, without the need for wired connections.

#### **Energy management devices**

Some energy management systems such as Smart plugs and energy monitors use Wi-Fi connectivity to connect to your home network, track energy consumption and set usage schedules in real-time from their mobile device.

## Working from home and remote learning equipment

Equipment often used to support remote working operations and/or remote learning needs applications such as wireless printing and scanning are facilitated through Wi-Fi connectivity in your home.

Wireless printers allow you to print documents from anywhere within your home, using either your Smartphone, tablet, laptop or computer that are also connected to your home Wi-Fi network.

#### Smart gardening

Some homes use Smart gardening systems to care for their indoor plants. Through Wi-Fi networks in your home Smart gardening sensors transfer data via an application directly to your mobile device allowing you to monitor soil moisture, temperature, and light levels.

Wireless technology has transformed the way we interact in our homes and with society. There are a range of different uses, from allowing us to access essential services, to enhancing home security and facilitating working from home and remote learning. As this technology continues to evolve, so will our need for quality and reliable access to this connectivity. Wireless technology has transformed the way we interact in our homes and with society.

2

### Getting the most out of your Wi-Fi connection

Wi-Fi connectivity in your home is essential for communication, work, remote study and entertainment.

The following tips may help you get the most from your Wi-Fi connection.

#### Routers

#### **Router** location

The location of your router can have a significant impact on your Wi-Fi signal and strength.

For optimal connection, place your router in a central location, elevated and away from obstructions like furniture, appliances and walls.

You should also avoid placing it near metal objects and other devices that may cause electromagnetic interference, such as microwaves and baby monitors.

#### Upgrade your Router

If you are using an older router and are able to do so, you could upgrade to a newer router model that supports the latest Wi-Fi standards (e.g. Wi-Fi 6).

Newer router models generally provide improvements in speed, capacity and range.

#### Restart your Router regularly

Routers can benefit from regular restarts, just like other digital devices.

Restarting your router can help fix temporary issues and improve performance and connectivity.

#### **Bandwidth Usage**

Most modern routers come with Quality of Service (QoS) settings, that enable you to adjust bandwidth for specific devices and applications.

This can be useful in instances where a stable connection is important such as video conferencing or gaming.

#### Security

#### Protect your network

It is crucial to ensure your Wi-Fi network is password protected through a security key. Generally Wi-Fi networks use one of four types of network security keys, including: Wired Equivalent Privacy (WEP), Wi-Fi Protected Access (WPA), Wi-Fi Protected Access 2 (WPA2), or Wi-Fi Protected Access 3 (WPA3).

The network security keys are usually on the bottom or back of your router. It's usually labelled with either security key, passcode, password, or wireless password.

It's recommended to change your password from time to time. This will help keep your Wi-Fi network safe from hackers or other people trying to access your internet connection without your consent.

#### Managing external Interference

#### Change your Wi-Fi channel

To reduce interference from other devices in close proximity, such as neighbours, you should consider changing your Wi-Fi channel in your router setting.

Wi-Fi analysers and scanners can also provide you with useful information to help decrease interference and increase connection quality.



Wi-Fi connectivity in your home is essential for communication, work, remote study and entertainment.

#### Wired connectivity

Consider using Ethernet cables (wired connection) for devices that require a more stable connection such as desktop computers and gaming consoles.

You may find that wired connections can be more reliable than Wi-Fi for these devices.

#### Minimising connected devices

Having too many devices connected to your Wi-Fi network can put a strain on your bandwidth.

You should consider disconnecting the devices that are not in frequent use. This could also help manage your internet plan limits.

#### Wi-Fi Extenders and Mesh Networks

In areas with weak signals (dead zones) or for people with larger homes, you could consider using Wi-Fi extenders or a mesh network to ensure consistent coverage throughout your home. A Wi-Fi extender is a device used to increase the range of a wireless network. The extender receives Wi-Fi signals from a Wi-Fi router, and then re-transmits the router's data to wireless endpoints that may have trouble exchanging data directly with the router.

A Mesh network combines a Wi-Fi router with one or more mesh satellites to expand the coverage area of a single Wi-Fi network. In a Mesh network system, connected devices are seamlessly connected to the router or satellite with the strongest Wi-Fi signal in a given area.

If you are experiencing problems with your internet or network connection, the first step is to contact your network provider or internet service provider (ISP). They can help you troubleshoot the issue and determine if it's a problem on their end or if you need to take further steps.



## Wireless and mobile connectivity in your community

The Australian Government is committed to improving access to wireless and mobile connectivity, and expanding the digital landscape to ensure quality and reliable networks are available to all Australians, regardless of their location or socio-economic circumstances.

But it isn't just our personal use that makes wireless and mobile connectivity essential – schools, hospitals, businesses and emergency services also rely on this technology to undertake daily operations in our communities.

Poor wireless and mobile connectivity affect everyone in the community. In today's modern digital society, connectivity is not only crucial in fostering inclusion and building a strong economy but it's also essential in supporting safe communities.

### **Emergency services**

Emergency services such as ambulance, fire, police and other rescue operations can rely on wireless/mobile connectivity to ensure they are able to respond quickly in an emergency which can make a life-saving difference.

A lack of wireless and mobile connectivity can reduce emergency response times in your community, which in turn can pose a significant risk to life.

Wireless and mobile phone connectivity are essential for the operations of emergency services. These include:

- Callers access to emergency services (000) from their mobile device.
- Emergency services are able to identify the locations/site of the emergency, track their vehicles in real-time and receive traffic updates to determine the fastest route to an incident site.

• Facilitation of communication between hospitals, paramedics and emergency command centres.

Here are some examples on how this connectivity supports emergency operations in communities across Australia.

#### Fire and Rescue Services

To ensure access to information and critical communication when and where needed, fire and rescue services use a range of digital applications and devices that rely on mobile and wireless connectivity.

These devices can be fitted into response vehicles to assist incident management teams by enabling real-time tracking of incidents and vehicles (000 calls and incident mapping) to inform the emergency response and ensure the closest vehicle can respond to the site of an emergency. It also enables emergency personnel to maintain access to their mobile devices anytime and anywhere.

These vehicles can provide temporary wireless connectivity to areas where permanent infrastructure has been affected. They also provide access to power, radio and internet communications to support emergency response and recovery in areas with no coverage (e.g. tunnels, underground and inside buildings).

Other devices using this connectivity that facilitate emergency operations include drones and other remote piloted aircraft systems which provide aerial vision and data in difficult to access areas with limited visibility or increased danger for emergency personnel (e.g. bushfires, gas and chemical leaks).

Wireless and mobile connectivity also facilitates radio access for personnel to communicate with other emergency services during large scale and complex responses.

## In today's modern digital society, connectivity is not only crucial in fostering inclusion and building a strong economy but it's also essential in supporting safe communities.

#### Ambulances and Hospitals

Hospitals operate in a fast-paced environment and rely on quality, reliable wireless and mobile connectivity to streamline crucial information.

For example, it's crucial for paramedics in ambulances to communicate with medical personnel in hospitals to prepare for an in-coming patients' arrival. Effective communications between paramedics and the hospital in 'real-time' is critical in life-threatening situations.

Wireless/mobile connectivity fitted into an ambulance enables remote guidance from the hospital to the paramedic to effectively assess and perform essential procedures on the patient.

In hospitals, wireless medical devices rely on this connectivity for daily operations. These include monitors, pumps, scanners such as CT, MRI and ultrasound machines as well as bar code scanning to verify patient identity, medications and dosage.

Patients in hospitals also rely on mobile and wireless connectivity for their monitoring devices including glucose readers, and access to their mobile phones to stay connected to loved ones and access entertainment during their stay.

Visitors alike, rely on mobile/wireless connectivity when visiting patients in hospital to enable access to their mobile devices.

#### Surf lifesaving operations

In coastal areas, surf and lifesaving services rely on wireless and mobile connectivity to support daily incident response operations.

Some of these functions include the operation of drones and remote piloted aerial services that enable:

- Coastal Survey and Imagery for detailed risk assessment and mapping to assist with searches and shark patrol.
- Real-time live streaming to emergency control centres and mobile lifesaving response units.

Wireless and mobile connectivity is an essential part of today's digital landscape and supports traditional practices, including those keeping our community safe.



### **Retailers and businesses**

Wireless and mobile connectivity enables retailers and other businesses to operate in the community. This technology can improve the services and products available to consumers.

Today's consumers have come to expect wireless and mobile access whether visiting a hospitality venue such as a café or purchasing groceries at a local supermarket.

This connectivity is enabling businesses to streamline services and deliver products quickly. For example, supermarkets can perform inventories for pricing and sales in real time using wireless technologies. This helps to ensure that groceries are available when customers need them. Wireless mobile applications can also enable queue monitoring, to assess queue length and reassign staff as needed.

Wireless and mobile connectivity can also make possible EFTPOS payments from your phone, personalised experiences and other operational functions such as mobile order processes (e.g. digital menus, click and collect).

This technology is enabling faster transfer of information within businesses and between customers. For example, retailers can remotely check stock levels and other data.

Wireless connectivity is also crucial in the operation of security monitoring to help reduce incidents of theft and other offences.

Office-based businesses in our community also rely on this connectivity to work remotely while away from the office, allowing them the flexibility to undertake multiple tasks and boost productivity.

Given almost the entire Australian population now use a mobile phone as their main mode of communication<sup>1</sup>, businesses in the community have also evolved to respond to consumer demand for digital friendly services.

## Schools and learning institutions

Schools and learning institutions in your community are using wireless and mobile connectivity for their daily operations to enhance flexible learning approaches, maximise teaching efficiency, and reduce administrative costs.

Through this technology schools are able to establish digital and/or remote classrooms, incorporate digital learning into curriculum activities, as well as supporting administrative tasks, and student engagement.

Remote classrooms provide students with the opportunity to continue their education offsite in instances of distance learning, travel or other circumstances. This approach enables real-time participation, progress monitoring and access to feedback on exams and assignments.

This approach fosters collaboration among students and teachers, allowing students to work on group projects in real-time, exchange information and resources, and maintain offsite communication.

Teachers rely on this connectivity to access applications to gain insights and monitor student performance. This information supports customised educational plans to meet individual needs, including interactive applications, sharing online resources and other materials.

Access to these applications that are enabled by wireless/mobile connectivity allow schools to reduce administrative costs related to hardcopy textbooks, paper, and printing.

Schools also need to access real-time monitoring of school grounds through CCTV security cameras that allow fast responses to ensure student safety. These security systems rely on this connectivity to function effectively.

As our world continues to become increasingly digital, school's reliance on this connectivity will also continue to evolve, not only to support daily operations but also to meet the digital educational needs of our future generations.

1 Electromagnetic Energy Program, Telecommunications Usage Survey Report

## How is this technology deployed in your community

Connectivity is essential for driving national productivity growth and provides opportunities for all Australians regardless of where they live or work. To meet these connectivity needs, it is often necessary for carriers to deploy new infrastructure.

Wireless networks are central part of telecommunications infrastructure in Australia. These networks support a range of services, from mobile communication to broadband internet.

In Australia, the deployment of wireless networks involves a coordinated effort between telecommunications providers, the Australian Government and regulatory authorities, as well as local councils and land owners.

### **Spectrum allocations**

Spectrum is a critical component for the deployment of wireless networks. It refers to the range of electromagnetic energy (EME) frequencies that are used to transmit data through wireless networks.

The deployment of these wireless networks is driven by the three main Mobile Network Operators (MNOs), in Australia these are: Telstra, Optus and TPG/Vodafone. MNOs need to obtain spectrum licences. This is overseen by the Australian Communications and Media Authority (ACMA). Further information is available at: https://www.acma.gov.au/what-spectrum

# Location of telecommunications deployments

The location and timing for the deployment of new telecommunications facilities is a commercial decision determined by the relevant carrier, having identified areas which would provide the greatest coverage for use by the community. The Australian Government does not have a role in these decisions.

For a new telecommunications facility to be able to appropriately provide connectivity to an area, the facility needs to be situated near the relevant local area. Facilities installed at a substantial distance from the area intended to be serviced may not be able to provide suitable coverage.

The Australian Government is aware of coverage gaps across the country, particularly in regional, remote or recently developed areas, where there may be limited to no network coverage. In these regions, carriers need to build new infrastructure to provide coverage and connectivity. There are several Australian Government programs aimed at improving connectivity in these regions, please refer to page 16 for further information. Wireless networks are a central part of telecommunications infrastructure in Australia.



### Powers and Immunities Framework

Telecommunications companies have powers under Schedule 3 of the Telecommunications Act 1997 to inspect land, install 'low-impact' facilities, and to maintain any kind of telecommunications facility.

They also have immunity from some state and territory laws when carrying out these activities, such as planning laws. This is referred to as the carriers' powers and immunities framework. This framework has been in place for over 20 years, and is essential in enabling the efficient construction and maintenance of telecommunications networks in a nationally consistent way.

Low-impact facilities are those that are essential to the efficient operation of telecommunications networks, have low visual impact, and are unlikely to cause significant community disruption during installation or operation. For example, telecommunications companies use these powers to install and maintain antennae, dishes, fibre optic cables and other infrastructure used to deliver landline and mobile communications services to the local community.

## Need to expand or build new networks

The deployment of Australia's mobile network is driven by three MNOs who have invested in building and expanding wireless infrastructure, including mobile towers, base stations and the base network to provide mobile connectivity services.

MNOs need to expand or build new networks to meet increasing demands for connectivity to support growing populations, device proliferation and high-bandwidth applications that require more reliable connectivity.

In high density areas, such as cities and during events of connectivity demand, existing networks can become overloaded resulting in poor mobile connectivity and speeds. Expanding networks, including deployment of new telecommunications infrastructure near the areas they are intended to serve helps improve mobile coverage.

Upgrades from previous generations of wireless technology, for example 3G to 4G or 5G, and supporting emerging technologies such Internet of Things (IoT) and Smart Cities require the deployment of new infrastructure to provide reliable connectivity that can meet these demands. The Australian Government is committed to ensuring that all Australians can access modern, quality and reliable connectivity regardless of their location.

### Infrastructure sharing

To reduce costs and minimise duplicating efforts, carriers in Australia sometimes share space on each other's telecommunication's infrastructure (e.g. mobile towers) or on public infrastructure, such as light poles. This model helps carriers improve coverage in areas where there could be barriers to building new infrastructure, and helps to reduce broader visual amenity.

### Radio Frequency (RF) Electromagnetic Energy from telecommunications (EME)

The Australian Government strictly regulates EME emissions from telecommunications to protect the health and safety of all members of the public. In Australia, all telecommunications infrastructure and facilities are required by law to comply with these regulations. Further information is available from www.eme.gov.au

## The role of connectivity in enabling digital inclusion

As Australian society becomes more reliant on digital technology, it is crucial to ensure that all Australians can access these technologies, and are able to use them effectively, regardless of their socioeconomic circumstances, location or ability.

Without access to digital connectivity, individuals and communities are at risk of falling behind in employment, education and social participation.

There are several barriers that impact an individual's ability to reap the full benefits of digital connectivity, including:

- Access geographic disparities, such as regional and remote areas lacking infrastructure
- Affordability socioeconomic challenges, such as affordability of services and devices; and
- Digital ability digital literacy, which is the ability for individuals to use technology confidently.

In Australia, the most digitally excluded groups include remote First Nations communities, older Australians, and people on lower incomes.

Facilitating access to digital connectivity for these groups can significantly improve their circumstances by:

- Enabling access to information, services and resources online including education, healthcare and government services to bridge the gap in knowledge, opportunity and empower individuals.
- **Providing economic opportunities** through online engagement and access to training and skills development resources including digital literacy, to support participation in a modern workforce.

- Improving educational outcomes through digital tools to enable participation in online and remote learning, and access to educational resources and collaboration spaces with peers.
- Fostering social inclusion to address barriers to social isolation due to geographic or social challenges through access to online communities, social media and virtual support groups.

The Australian Government recognises the need to address barriers to connectivity to ensure all Australians, particularly our most digitally excluded groups, have access to quality and reliable connectivity as well as the skills to use online technologies.

The following programs are being implemented to help address the digital divide, and ensuring our efforts are helping to achieve true digital inclusion in our country.

#### **First Nations Digital Inclusion**

The Australian Government is committed to achieving Target 17 of the National Agreement on Closing the Gap, which aims for equal levels of digital inclusion for Aboriginal and Torres Strait Islander people by 2026. This Target underpins Outcome 17, which focuses on First Nations Australians accessing information and services needed to make informed choices about their lives and communities. More information at: https://www.infrastructure.gov.au/ media-communications-arts/first-nations-digitalinclusion

## Facilitating access to connectivity for digitally excluded groups can significantly improve their circumstances.

#### Better Connectivity Plan for Regional and Rural Australia

The Better Connectivity Plan is a key initiative and part of the Australian Government's telecommunications agenda and is providing more than \$1.1 billion to rural and regional communities. More information at: https://www.infrastructure.gov.au/ media-communications-arts/better-connectivityplan-regional-and-rural-australia

#### **Regional Connectivity Program**

The Regional Connectivity Program (RCP) is a grants program funding the delivery of 'place-based' telecommunications infrastructure projects to improve digital connectivity across regional, rural and remote Australia. The RCP is supported by co-contributions from state, territory and local governments, as well as grantees and other third parties. More information at: https://www.infrastructure. gov.au/media-communications-arts/internet/ regional-connectivity-program

#### Peri-Urban Mobile Program (PUMP)

The Peri-Urban Mobile Program (PUMP) targets long standing mobile coverage and reception issues in the peri-urban fringes of Australia's major cities, including on the underserved fringes of large regional cities like Geelong, the Gold Coast, and Newcastle.

The peri-urban fringe is where the bush meets the edges of the suburbs, creating natural disaster risks for those living and working in those areas. More information at: https://www.infrastructure.gov.au/ media-communications-arts/phone/ mobile-services-and-coverage/ peri-urban-mobile-program

#### Mobile Black Spot Program (MBSP)

The Mobile Black Spot Program (the MBSP) is a Government initiative that invests in telecommunications infrastructure to improve mobile coverage and competition across Australia.

Under the MBSP to date (Rounds 1 to 7), the Australian Government's commitment has generated a total investment of more than \$1 billion, to deliver up to 1,400 new mobile base stations across Australia. More information at: https://www.infrastructure. gov.au/media-communications-arts/ phone/mobile-services-and-coverage/ mobile-black-spot-program

## Better help for people who are unable to pay their phone bill

If you are experiencing financial difficulties, you may be considered a financial hardship customer. Your telco must tell you about their payment assistance policy and discuss options to help you and keep you connected. Further information at: https://www.acma.gov.au/help-if-you-cant-pay-y our-phone-or-internet-bill

## Glossary

**Wi-Fi:** Wireless networking technology that uses radio waves to enable computers, smartphones, or other devices to connect to the internet or communicate with one another.

**EME:** In telecommunications EME is the term used to describe the type of energy emitted by radio waves in the frequency ranges spanning 100 kilohertz (kHz) to 300 gigahertz (GHz).

**Connectivity:** The ability of devices, systems, or networks to establish communication and exchange data with each other, typically facilitated through wired or wireless means. Connectivity enables seamless interaction and collaboration between devices, allowing users to access resources, share information, and communicate across various platforms and environments.

**Devices:** Devices encompass a broad range of digital equipment, such as smartphones, tablets, smartwatches, medical readers, and security cameras.

**Infrastructure:** Infrastructure relates to telecommunications equipment and facilities that enable interconnected hardware, software, and networks for the storage, processing, and transmission of digital data and services.

**Mobile:** Mobile refers to a portable device, such as a phone handset or computing device, that relies on wireless connectivity capabilities, such as Wi-Fi, Bluetooth, and cellular networks, to enable access to the internet, make calls, send messages, and run various applications. **Telecommunications:** The transmission of information over long distances using electronic means, encompassing various technologies and methods such as telephone networks, internet protocols, and wireless communication systems. Telecommunications enable real-time exchange of voice, data, and multimedia content between individuals, businesses, and organisations, facilitating global connectivity and collaboration.

Wireless: A technology that enables communication and data transmission without the need for physical wired connections, typically utilising radio waves or electromagnetic signals. Wireless technology facilitates mobility in various applications such as mobile phones, Wi-Fi networks, Bluetooth devices, and satellite communications, allowing for connectivity across different environments and devices.



