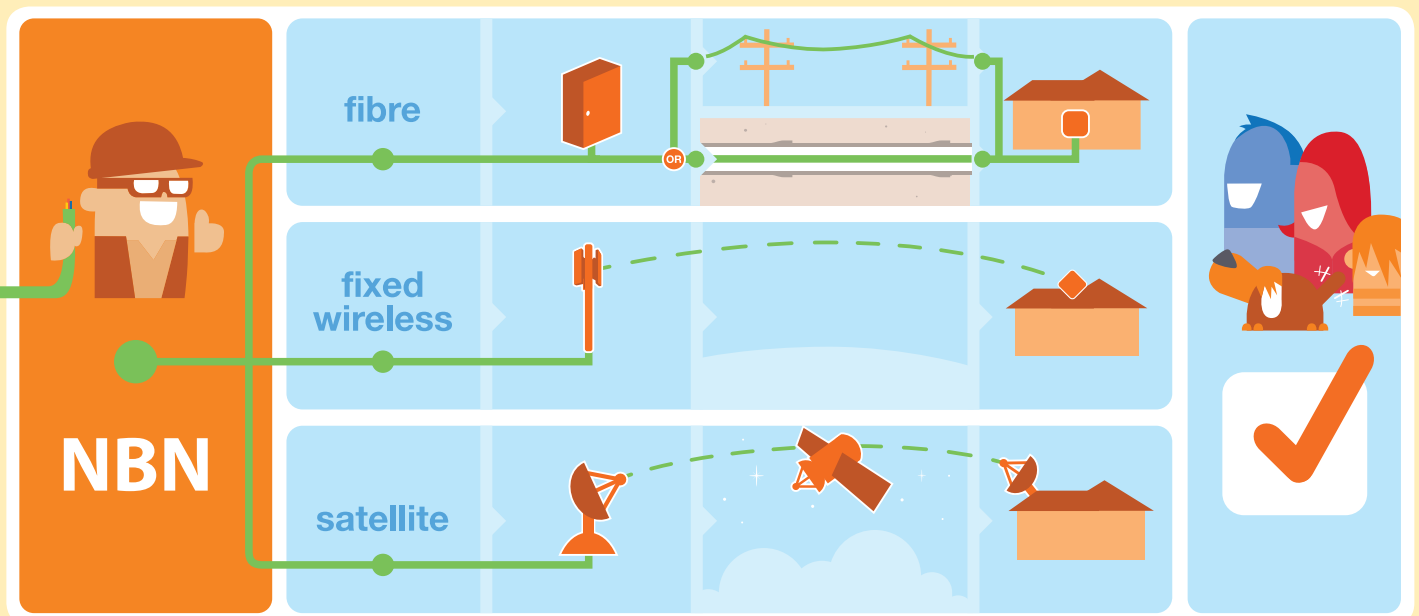


# The Three NBN Technologies

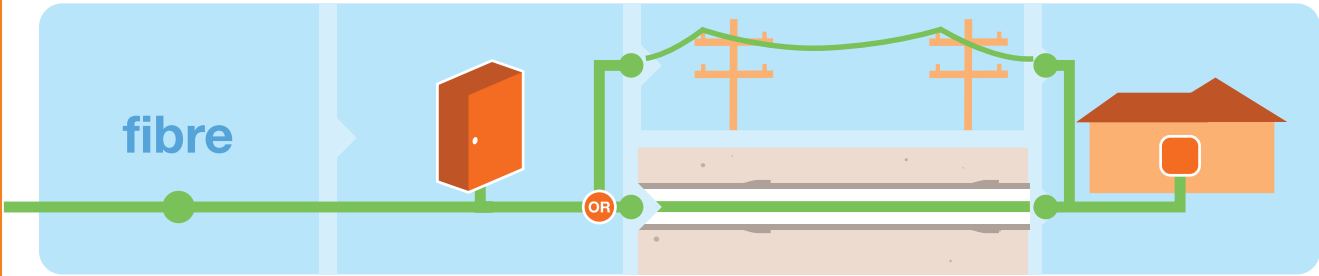


## Overview

To connect every house, school, hospital and business in Australia to the high-speed National Broadband Network (NBN), three different technologies are being used to pass 100 percent of Australian homes and businesses: fibre optic cabling, fixed wireless and satellite.

(To find out more about what the NBN is and why it's happening see the Fact Sheet "The NBN – what is it and why is it so important?")





## Fibre optic cabling

Fibre optic cable is a tried-and-tested technology that has been around for nearly 30 years. Once laid, the fibre is expected to last 40 - 50 years or longer.

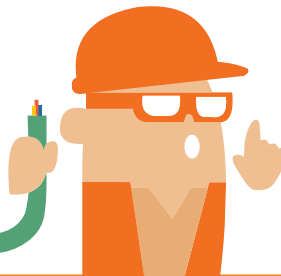
Fibre optics (optical fibres) are long, thin strands of very pure glass about the diameter of a human hair. Hundreds or thousands of these optical fibres are arranged in bundles, called optical cables, and used to transmit light signals over long distances. These light signals carry voice, video and information to people's computers and/or phones all at the same time and at very fast speeds.

The NBN aims to connect ninety-three per cent of Australians living and working in cities and regional centres to high-speed fibre optic cabling. A fibre network can offer our wholesale customers broadband speeds of up to 100 Megabits per second (Mbps). Of course the actual speeds will depend on the Internet Service Provider, the equipment customers have and the way their connections are set up in their building.



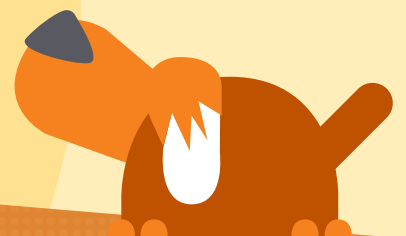
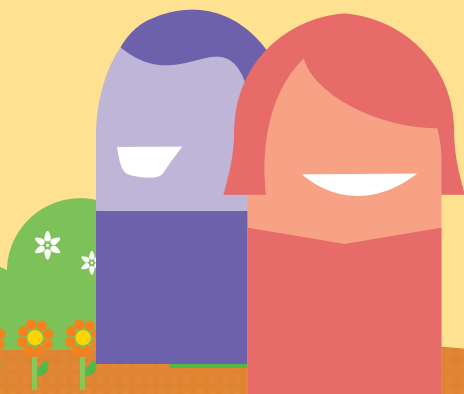
### FUN FACT 1

Fibre optic cables are made of glass. Glass is very stable and it does not corrode when in contact with water, air or chemicals, unlike copper.



### FUN FACT 2

Australians living in rural and remote areas will be among the first in the country to experience the benefits of high-speed broadband delivered via the NBN Fixed-wireless and satellite services.



## fixed wireless



## Fixed wireless

Fixed-wireless services are delivered through the air by radio communications by way of antennas that transmit a signal direct to a small outdoor antenna attached to a premise.

NBN's fixed-wireless network uses 4G technology and is designed to deliver services to a fixed number of premises within a coverage area. This is different from current mobile wireless services where speeds can be affected by the number of people moving into and out of the coverage area. The speed available in a fixed-wireless network is designed to be relatively steady and better quality.

To reach everyone in our vast country, a combination of high speed fixed-wireless and satellite services will be used in addition to the fibre network.

Leading edge fixed-wireless services are planned to reach the four per cent of Australians who will not receive fibre or satellite services. This technology is designed to provide real improvements.

## satellite



## Satellite

For the three per cent of Australians who live and work in the very remotest areas, NBN Co plans to use purpose-built satellite services to provide the high-speed broadband so that ISPs can provide improved to their customers. The satellites, which are planned to launch in 2015, will be designed to reach Australians living in outback areas and Australia's external territories such as Norfolk Island, Christmas Island, Macquarie Island and the Cocos Islands.

Until the two satellites are launched, an Interim Satellite Service (ISS) has already been introduced for people in homes, small businesses, schools, health services, local government facilities and indigenous communities in some of the most remote areas of Australia. These people previously had no access to metro-comparable broadband services and they are amongst the first users of an NBN satellite service.



# From NBN to you

NBN Co, the company set up by the Australian Government to build and operate the broadband network, will charge telephone and internet service providers (TISPs - like Optus, Telstra, Vodafone, iiNet etc) to use the different broadband technologies (fibre, fixed wireless and satellite services) to deliver their internet and telecommunications services to everyone in Australia. Just like how your family or businesses, currently purchase gas, water or electricity from a service provider, you won't buy broadband services directly from NBN Co.

To connect to the NBN there are three steps:

## Step 1: Call

Once your street has access to the NBN, you can purchase a broadband and/or phone service by contacting a TISP of your choice.



## Step 2: Select

Compare the internet and phone packages available and select the right option for you.



## Step 3: Connect

Once you've selected your service, your service provider (TISPs) should coordinate a time to install equipment (if it isn't already installed) and/or activate your service.



## For more information

To check out what sort of technology will be used to connect you to the NBN high-speed broadband network have a look at the coverage maps for each state and territory at:

<http://www.nbnco.com.au/rollout/coverage-maps.html>

For more information on fibre optic technologies go to:

<http://www.abc.net.au/science/articles/2010/10/21/3044463.htm>