Measuring Broadband Australia Program

Thirty-third Report, June 2026

The Measuring Broadband Australia program provides information on the real-world performance of broadband plans. The program aims to better understand how Australians are experiencing internet performance in their homes, provide Australian consumers with accurate and independent information about broadband performance to assist their purchasing decisions, and encourage greater performance-based competition and better internet performance.

These reports are prepared quarterly by SamKnows, an independent testing provider appointed by the Australian Competition and Consumer Commission (ACCC). The metrics are also presented in a public dashboard on the ACCC's website. Report 33 is based on data measurements taken from 1st March to 31st March 2026.

The program relies on volunteers who host a testing device called a Whitebox on their broadband connection. The Whiteboxes, which are supplied by SamKnows, perform tests to measure internet performance using test servers maintained by SamKnows and hosted in Australia. More information about the program is available on the ACCC's website. Underlying data for this report can be found at www.data.gov.au.

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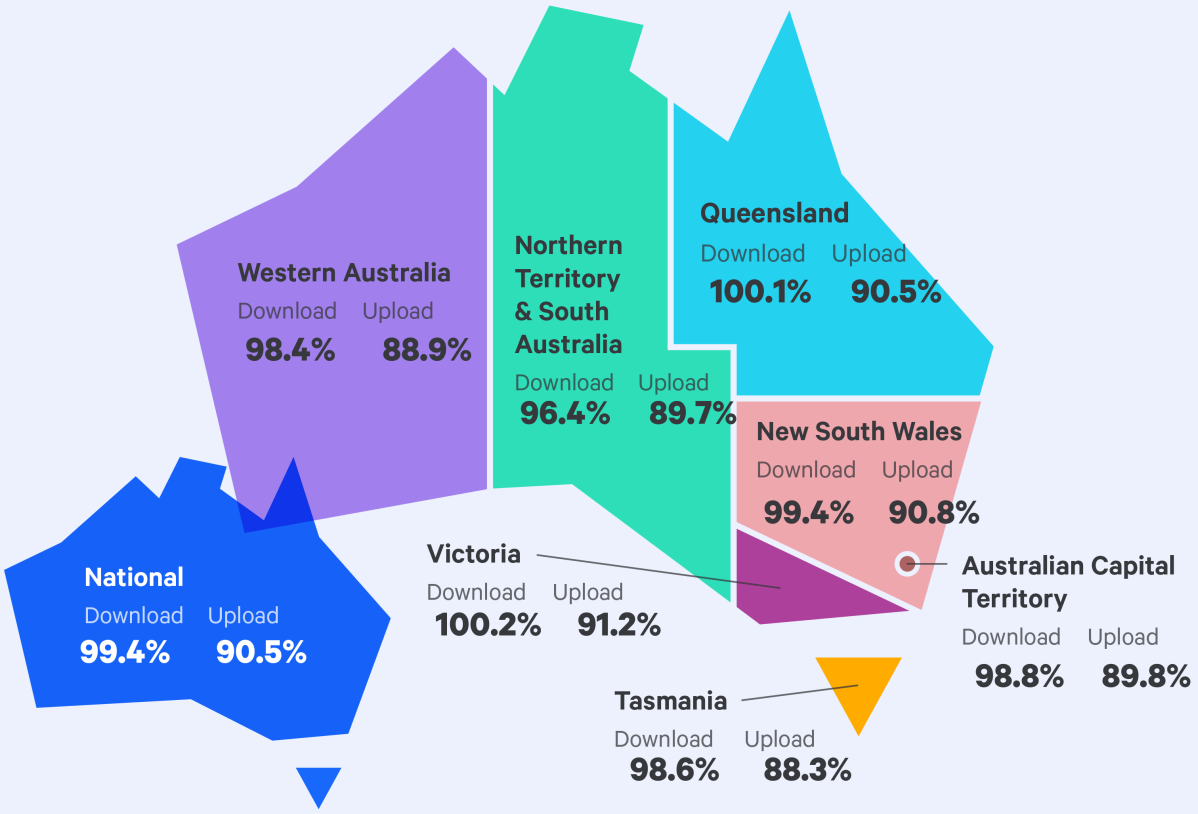
Key results - March 2026

Performance during busy evening hours by state and territory

Average NBN fixed-line performance during busy hours (7-11 pm, Monday to Friday) by state/territory. Including underperforming and impaired services, excluding very high speed services.

The speeds ranged from 96.4%-100.2% of plan speed for download and 88.3%-91.2% for upload.

Download and upload speeds as a % of plan speed



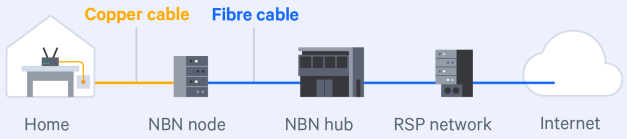
NBN access technology

Download speeds during busy hours (7-11 pm, Monday to Friday), including underperforming and impaired services.

Results are presented only for speed tiers and technologies having a sufficient panel size.

FTTN

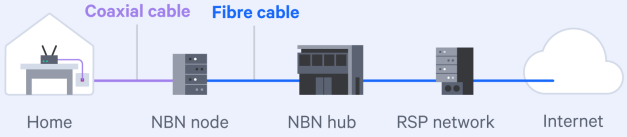
Fibre to the Node



Plan	Avg download	% of plan
25	25.8 Mbps	103.2%
50	47.6 Mbps	95.2%
100	89.4 Mbps	89.4%

HFC

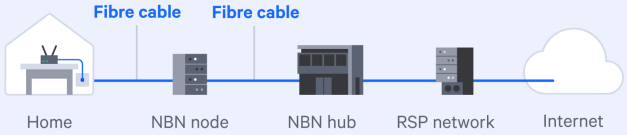
Hybrid Fibre Coaxial



Plan	Avg download	% of plan
50	51.8 Mbps	103.6%
500	491.2 Mbps	98.2%
Very high speed services	856.4 Mbps	

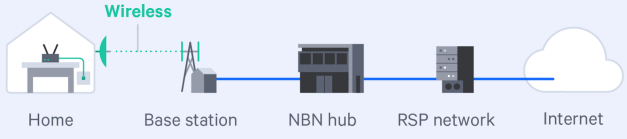
FTTP

Fibre to the Premises



Plan	Avg download	% of plan
50	52.5 Mbps	104.9%
500	504.7 Mbps	100.9%
750	721.6 Mbps	96.2%
Very high speed services	867.9 Mbps	

Fixed wireless



Plan	Avg download	% of plan
Fixed Wireless Plus	99.4 Mbps	99.4%
Fixed Wireless Home Fast	160.5 Mbps	64.2%

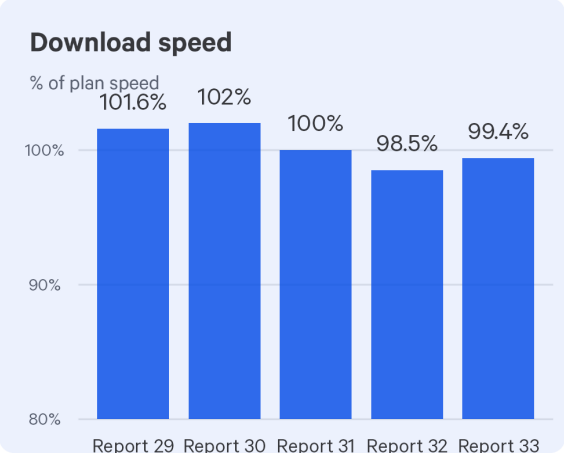
Quality of experience

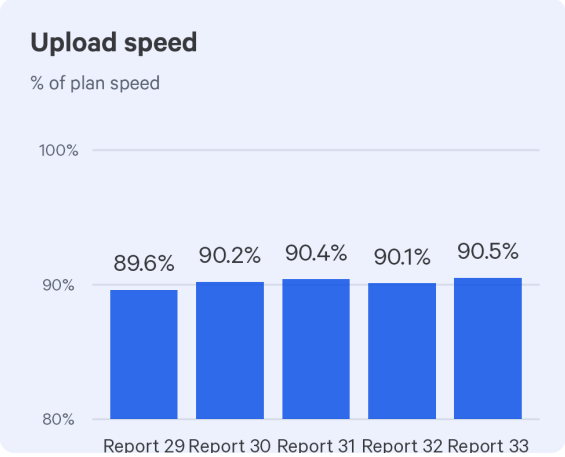
Streaming full high definition (FHD) and ultra-high definition (UHD) video during busy hours (7-11 pm, Monday to Friday), including underperforming and impaired services.[1]

NBN plan speed	% that can reliably stream FHD & UHD videos from Netflix									
25	HD 100.0%	HD 100.0%	HD 100.0%	HD 98.7%	HD 69.2%	0.0%	0.0%	0.0%	4-5	Concurrent **FHD** video streams
	UHD 100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0-1	Concurrent **UHD** video streams
50	HD 100.0%	HD 100.0%	HD 100.0%	HD 100.0%	HD 100.0%	HD 98.0%	HD 95.0%	HD 91.0%	7+	Concurrent **FHD** video streams
	UHD 100.0%	UHD 98.0%	UHD 84.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2-3	Concurrent **UHD** video streams
100	UHD 100.0%	UHD 100.0%	UHD 95.5%	UHD 88.6%	UHD 76.1%	UHD 55.7%	17.0%	0.0%	5-6	Concurrent **UHD** video streams
500	UHD 99.8%	UHD 99.7%	UHD 99.5%	UHD 99.0%	UHD 98.4%	UHD 97.6%	UHD 95.0%	UHD 94.9%	7+	Concurrent **UHD** video streams
Fixed Wireless Plus	UHD 97.0%	UHD 84.8%	UHD 71.2%	UHD 63.6%	UHD 51.5%	37.9%	28.8%	15.2%	4-5	Concurrent **UHD** video streams

Long-term trends

NBN fixed-line services, during busy hours, including underperforming and impaired services.





[1] This test runs on an idle connection, results may be affected with simultaneous usage. Following the twenty-third report, FHD is measured at 5 Mbps, and UHD at 15 Mbps in accordance with Netflix guidelines.

Overview

Further metrics available on ACCC website

Further metrics beyond those included in this report are available on the ACCC's broadband performance data dashboard.

Testing period

This report is based on measurements collected from 1st March to 31st March 2026.

Access networks

This report includes results for NBN fixed-line services (fixed-line plans up to 750 Mbps download), other superfast access networks (fixed-line plans up to 750 Mbps download), NBN very high speed services, NBN fixed wireless services and satellite services (NBN Sky Muster and Starlink) as regular items.

Volunteers using speed constrained in-home equipment

As with previous reports, this report includes all services and plans that may be affected by a 100 Mbps link within the volunteers' homes. A common cause of this is customer premises equipment[2] (CPE) or other network devices that have Ethernet ports with a physical limit of 100 Mbps. Other potential causes are damaged Ethernet cables, intermediate devices that only support 100 Mbps (such as old switches and hubs) and configuration of network equipment within the home. Consumers affected by this issue are unable to receive the full benefit of plans with download speeds above 100 Mbps. The ACCC encourages RSPs to reach out to their customers who may be using a constrained network device.

For further information on broadband speed issues, see the ACCC's website.

[2] Network equipment provided by an RSP (generally including a home router/gateway).

Important terms

The table below defines important terms in the report, explaining their significance to provide greater context about the report's findings.

Term	Definition	Significance
Advertised speed	The speed claim made by a retail service provider (RSP) for a given plan during a Measuring Broadband Australia reporting period. May be the same as or lower than the plan speed.	This metric presents download speed results against RSPs' advertised speed claims to show consumers whether units on our panel achieved the speed advertised by their RSP.
All hours	Data labelled "all hours" includes tests conducted at any time of the day.	
Busy hours	Data labelled "busy hours" includes only tests conducted between 19:00:00 and 22:59:59, Monday to Friday. For calculating the busiest hour and for determining the % of busy hours where the speed claim was attained, "busy hours" include 19:00:00 and 22:59:59, Monday to Sunday	Networks experience higher user activity during busy hours. As a result, network performance can deteriorate compared to other times of the day.
Busiest hour	The fifth-lowest hourly average download speed across each busy hour by RSP during the monitoring period. For this calculation, busy hours include tests conducted between 19:00:00 and 22:59:59, Monday to Sunday.	The busiest hour indicates the performance of each RSP when its network is under the highest levels of demand. When the busiest hour speeds are significantly lower than the average busy hour speeds, then the service may be more affected by particularly high demand peaks.
Confidence intervals	Indicates how certain we are that the true average for a metric lies between the upper and lower boundary indicated by the thin black lines. For example, if an RSP had an average download performance of 99.3% with a 95% confidence interval of ±2.2%, this means that if we were to repeat our sampling 100 times, we would expect the average performance to fall between 97.1% and 101.5% in at least 95 cases.	Narrower confidence intervals indicate a more stable estimate than larger ones.
Download and upload speed	Download speed is the speed at which data can be transferred from the SamKnows test server to the consumer's computer, measured in megabits per second (Mbps). Upload speed is the speed at which information is transferred from the consumer's computer to the SamKnows test server, measured in Mbps.	The download and upload speeds associated with each retail plan are used by consumers to select a plan. Upload speed is especially relevant for applications where a user sends significant amounts of data to the internet, for example uploading files to cloud storage or running multiple simultaneous video conferencing sessions.

Term	Definition	Significance
Download and upload performance	Measured download or upload speed expressed as a percentage of plan speed. e.g. for an NBN50 service, 100% download performance would be 50 Mbps.	This metric expresses how well a unit performs compared to the plan speed. Expressing results as a percentage of plan speed also allows results across different plan speeds to be aggregated. Prior to NBN Co overprovisioning the downlink, both the download and upload speeds were capped at 100% for the fixed-line plans. Since NBN Co began overprovisioning the downlink for fixed-line services, download results above 100% are common.
Impaired services	Fibre to the node services where the maximum attainable download speed measured by NBN Co is below the plan download speed.	Consumers on an impaired service are unable to achieve the full download speed of their plan (see "underperforming services"). These services require rectification of technical issues to improve performance. If this is not possible, it may be advisable for the consumer to move to a lower speed plan that is achievable. This report presents results both including and excluding impaired and underperforming services. This information allows consumers to better understand the reported download and upload speed measures by removing the effect of services which, due to physical limitations, would be better assigned to another plan. At the same time, this comparison provides stronger incentives for service providers to improve service quality for customers on impaired and underperforming services.
Geosynchronous Equatorial Orbit (GEO)	GEO satellites remain in a fixed position relative to the Earth's surface, providing consistent coverage over a specific area.	NBN Sky Muster is an example of a service that uses geosynchronous satellites to provide internet connectivity, particularly to remote and rural areas in Australia where terrestrial infrastructure is impractical or too costly to deploy.
Latency	The average time required to send a packet of data to the SamKnows test server and back to the consumer's computer, measured in milliseconds (ms).	The lower the latency, the better. Lower latency results in faster responses, providing a more reliable experience when using real-time applications such as video conferencing and online gaming. High latency may result in a lag or delay when using real-time applications.
Low Earth Orbit (LEO)	Low Earth Orbit satellites operate at altitudes ranging from approximately 480 to 1,200 kilometres above the Earth's surface. These satellites move rapidly relative to the Earth's surface, requiring a constellation of satellites to provide continuous and global coverage.	Starlink, developed by SpaceX, is an example of a service that uses a constellation of LEO satellites to deliver high speed internet access worldwide, including remote and underserved areas.

Term	Definition	Significance
NBN fixed-line	Monitored connections on NBN Co's fixed-line networks that utilise a physical line to connect the household to the NBN. There are a number of fixed-line technologies: fibre to the premises (FTTP), fibre to the curb (FTTC), fibre to the node (FTTN), fibre to the building (FTTB) and hybrid fibre-coaxial (HFC) access technologies. In this report, the NBN fixed-line section includes results for major NBN plans, reflecting the expanded range of speed tiers now available, including those up to 750 Mbps download speed. It excludes results from very high speed services, which are presented separately. FTTN and FTTB access technologies are treated as identical.	
NBN fixed wireless	Monitored connections on NBN Co's fixed wireless network. These services transmit data over radio signals to connect a household to the NBN using technology similar to mobile networks. Data travels from a transmission tower to an outdoor antenna fitted at the household.	Fixed wireless allows households to be connected to the internet without having to establish a physical, wired connection. This type of service is more prevalent in regional and remote areas, but consumers in outer metropolitan centres may also use this service.
NBN very high speed services	Services on the NBN Home Ultrafast plan, which has download/upload plan speeds of 1000/100 Mbps.	
Other superfast access networks	Refers to households served by fixed-line networks other than the NBN, for example, Uniti's Opticomm network.	
Outages	This metric tracks how many times per day a broadband connection goes offline for at least 30 seconds. Outages between 12 am and 5 am are excluded, as this is when network maintenance typically occurs.	Outages can impact user experience, subject to their frequency and duration.
Overprovisioning	Refers to NBN Co providing higher data rates than the plan speed.	The purpose of overprovisioning is to accommodate protocol overhead. The protocol overhead contains address and other information required to enable data transfer to/from the end user and the internet. Overprovisioning compensates for the bandwidth taken up by protocol overhead, as it enables consumers to experience speeds closer to the maximum of their plan. Currently, NBN Co overprovisions certain plans on the downlink only. Hence download speeds may be closer to, or above plan speed, whereas upload speeds remain below plan speeds.

Term	Definition	Significance
Packet loss	Packet loss counts packets that are sent over a network and don't make it to their destination, measured as a percentage of packets lost out of all packets sent.	At levels above 1%, packet loss can cause issues for certain types of applications. This may be detrimental to user experience.
Plan and plan speed	Plan refers to the retail broadband product. Each plan has an associated download and upload speed. For example, a 100/20 Mbps plan includes a 100 Mbps download plan speed and a 20 Mbps upload plan speed. The term "NBN100" refers to a download plan speed of 100 Mbps, but the upload plan speed may vary.	RSPs may advertise a maximum attainable speed and also state a different typical busy period speed that consumers are likely to experience, which may be the same or lower than the maximum attainable speed.
Underperforming services	Services that reach above 75% of plan speed in no more than 5% of download tests. These are services which rarely or never attain plan speed.	This metric effectively identifies services with maximum attainable speeds that fall closer to the maximum speed of a lower plan than to the maximum speed of the consumer's current plan. This is often, but not always, caused by a known physical impairment to FTTN services (see impaired services).
Video streaming (Netflix)	The number of Netflix videos at Full High Definition (FHD) and Ultra High Definition (UHD) that can be streamed on a certain plan simultaneously. Following the twenty-third report, FHD is measured at 5 Mbps, and UHD at 15 Mbps in accordance with Netflix guidelines.[3]	
Webpage loading time	The time it takes for a specific webpage to fully load. This is a combination test that includes download, latency and DNS in one test that accurately mimics real-world usage. This metric combines test results for eight popular Australian-based webpages.	

[3] https://help.netflix.com/en/node/306

NBN fixed-line services

Download speed test results

This section includes results for major NBN plans up to the new NBN Home Superfast plan (750/50 Mbps). It excludes results from very high speed services (i.e., NBN Home Ultrafast), as these are presented separately.

Figure 1A shows that users on NBN fixed-line services attained an average download performance of 100.0% of plan speed during all hours in this measurement period. This decreased to 99.4% during busy hours (Monday–Friday). These results are in line with the previous report, where the corresponding figures were 99.2% of plan speed during all hours and 98.5% during busy hours.

The measurement period had a total of 31 days with 4 busy hours per day, totalling 124 busy hours (Monday–Sunday) in the month. The busiest hour download speed results in Figure 1B are lower than the busy hour download speeds shown in Figure 1A. This indicates that periods of higher demand affected network performance.

The range of speeds for the busiest hour (Figure 1B) varied from 93.6% to 100.6% of plan speed. Some RSPs were more affected by high demand peaks than others. All RSPs achieved busiest hour speeds above 93% of plan speed.

Further details on hourly average download and upload performance results for the main NBN fixed-line plans are available on the ACCC's dashboard.

Figure 1: Average download performance by RSP

NBN fixed-line plans. Including underperforming services. Error bars indicate 95% confidence intervals of the mean.

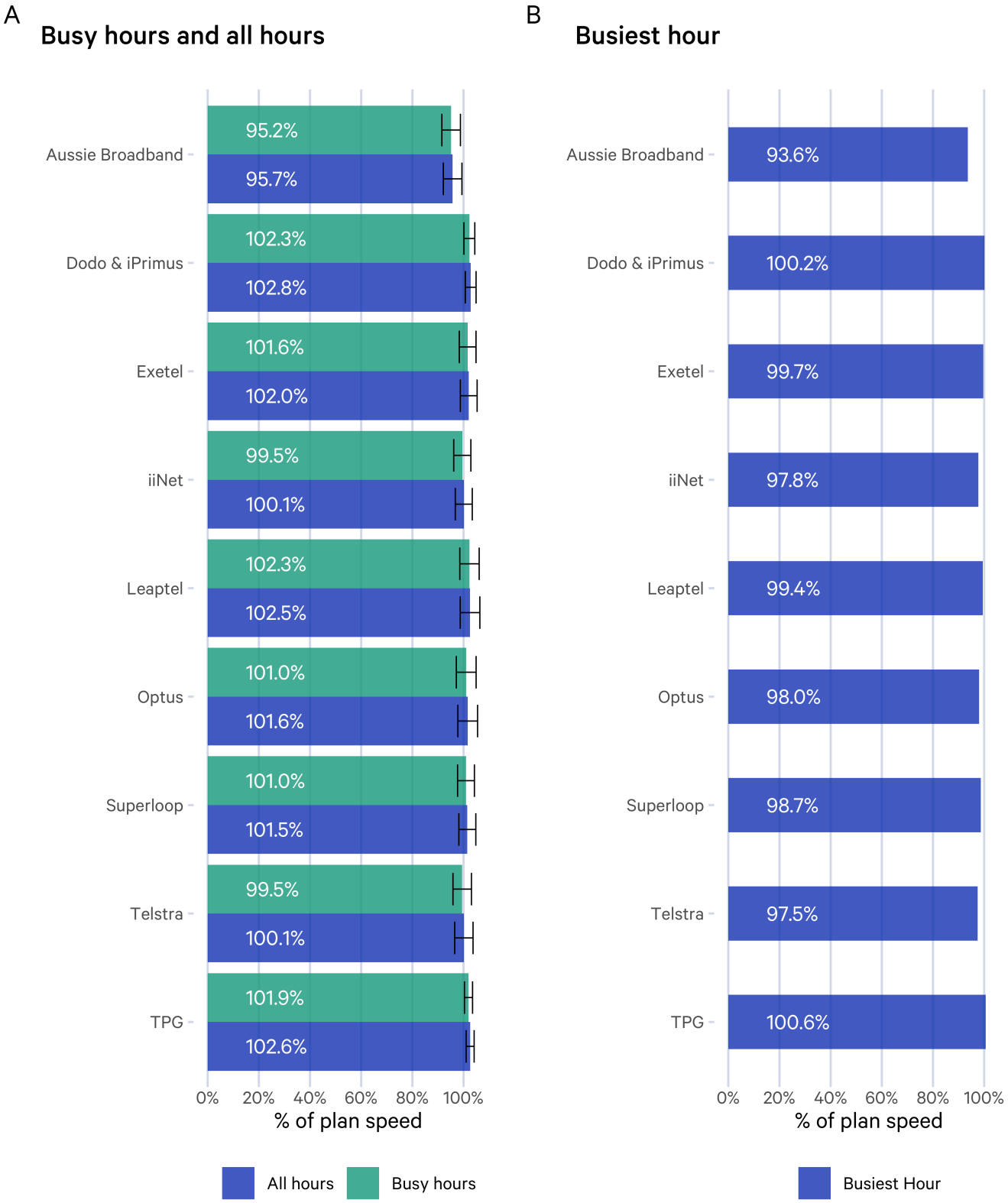
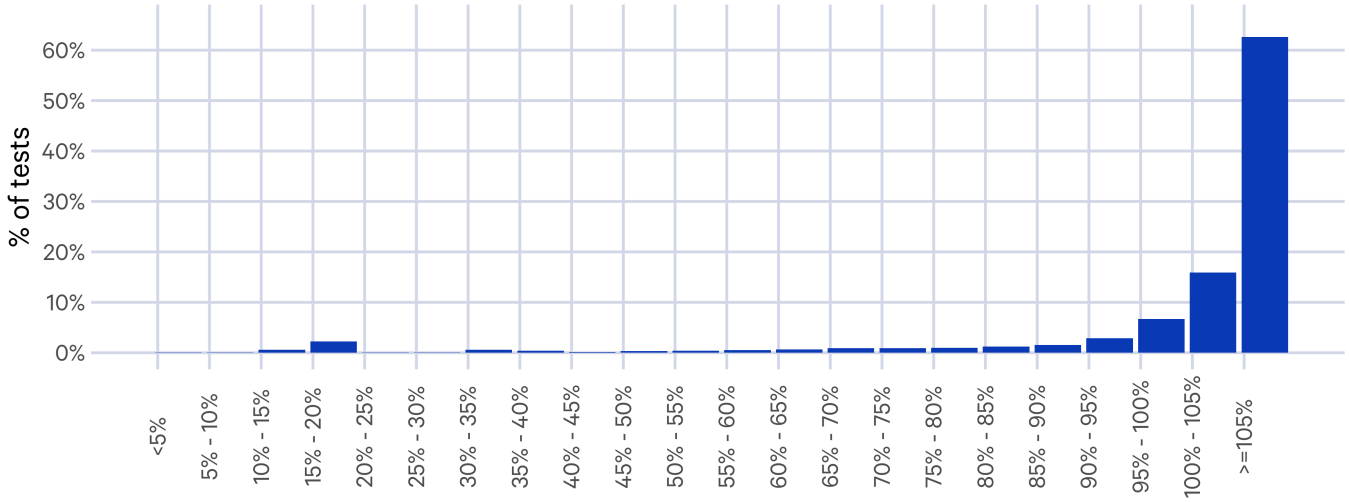


Figure 2 shows the distribution of 254,406 download speed tests performed across 1156 Whiteboxes connected to fixed-line NBN infrastructure during this period.

Of these tests, 78.6% achieved at least 100% of plan speed, and only 4.6% of tests achieved less than 50% of plan speed. In the previous report, 77.3% of tests were at plan speed or higher, and 4.9% of tests failed to meet the 50% mark.

Figure 2: Frequency of download speeds attained during tests

NBN fixed-line plans. All hours. Including underperforming services.



Underperforming Services

In Figure 3, we present separate download performance results including and excluding underperforming services. Underperforming services represented 5.6% of the 1156 NBN services tested for this report, compared to 6.4% in the previous report.

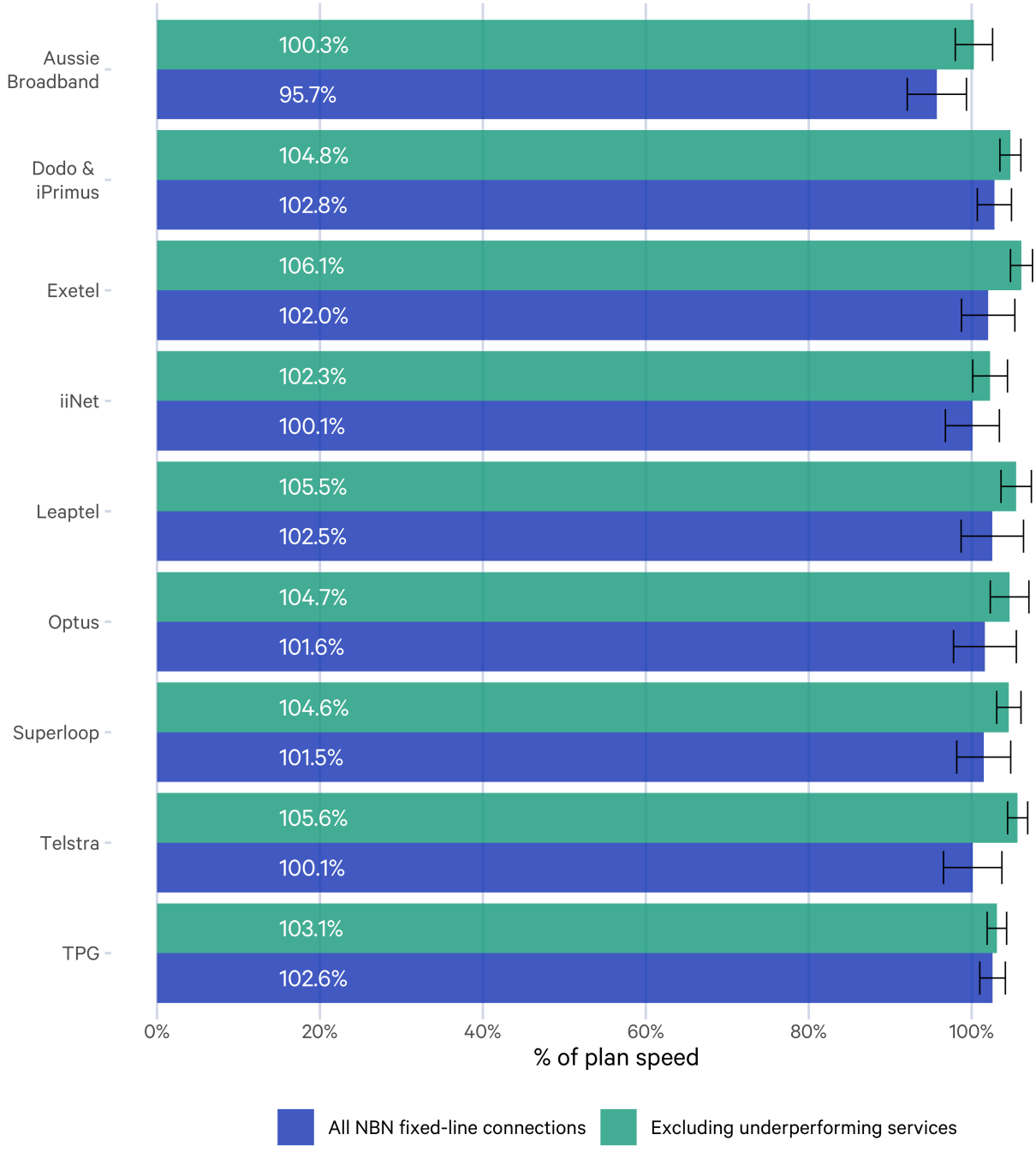
In our sample, 10.7% of all NBN services with an FTTN connection were underperforming. FTTN services accounted for most of the underperforming services in previous reports. However, there is now a greater incidence of underperforming services with FTTP and HFC connections in our sample after NBN Co introduced higher speed plans for these technologies in September 2025. For example, 5.0% of NBN services with plan speeds of 500/50 Mbps were underperforming during the monitoring period.

Once underperforming services are excluded, the average download performance during all hours is 103.6% of plan speed compared with 100.0% for all services. Had underperforming services been remediated before the measurements were collected, the

overall download performance would have been 3.6 percentage points higher during the period.

Figure 3: Average download speed by RSP - inclusive and exclusive of underperforming services

NBN fixed-line plans. All hours. Error bars indicate 95% confidence intervals of the mean.



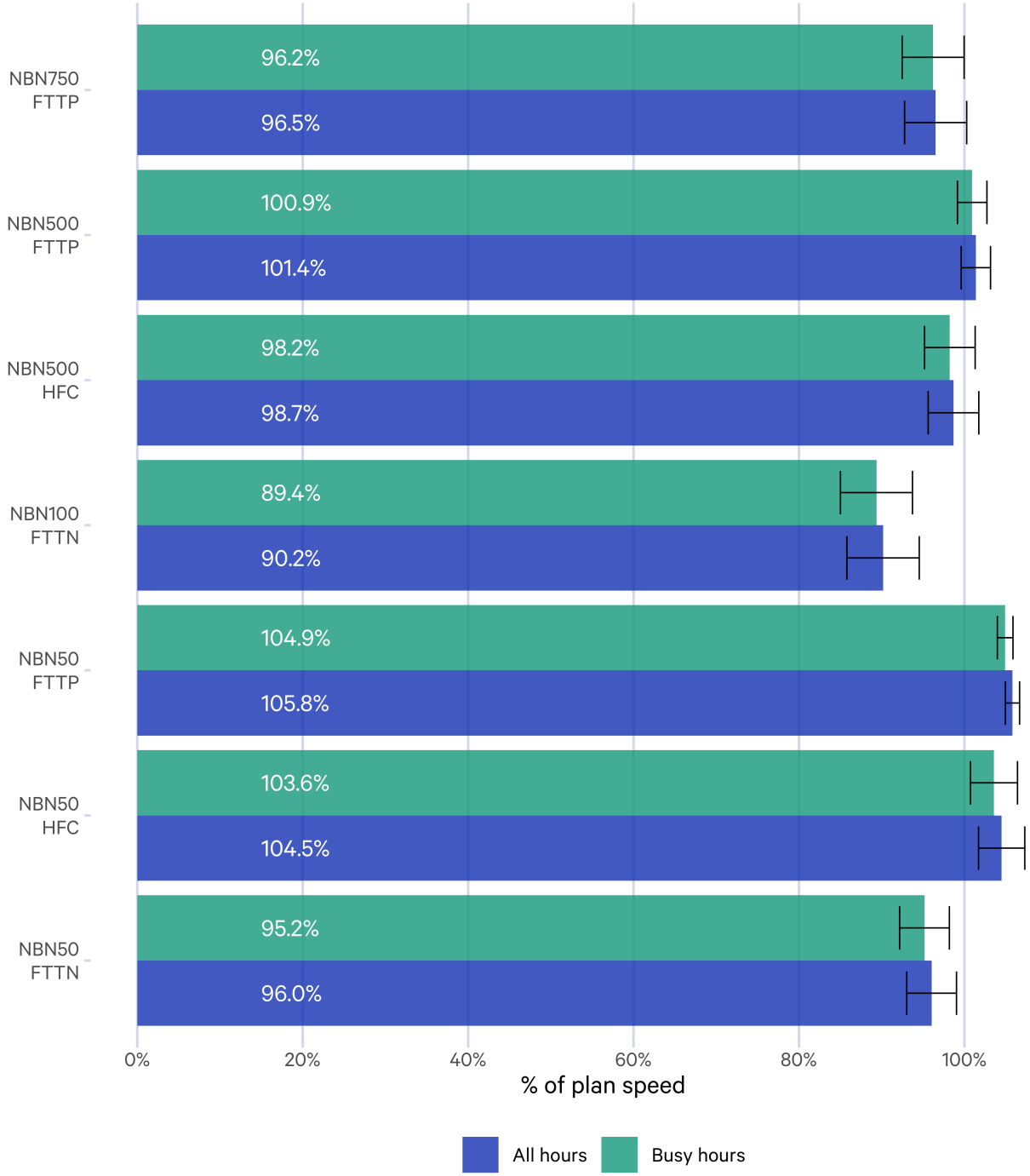
Download performance by plan and access technology

Figure 4 measures the average download performance by plan and access technology for all speed tiers and technologies with a sufficient panel size.

Within the NBN50 plan, FTTN services had an average download speed of around 10% of plan speed lower than other technologies which is consistent with previous reports. The NBN100 FTTN panel also recorded the lowest average speeds as a percentage of plan speed compared to other plan speeds and technologies.

Figure 4: Average download speed by plan and technology

NBN fixed-line plans. Including underperforming services. Error bars indicate 95% confidence intervals of the mean.



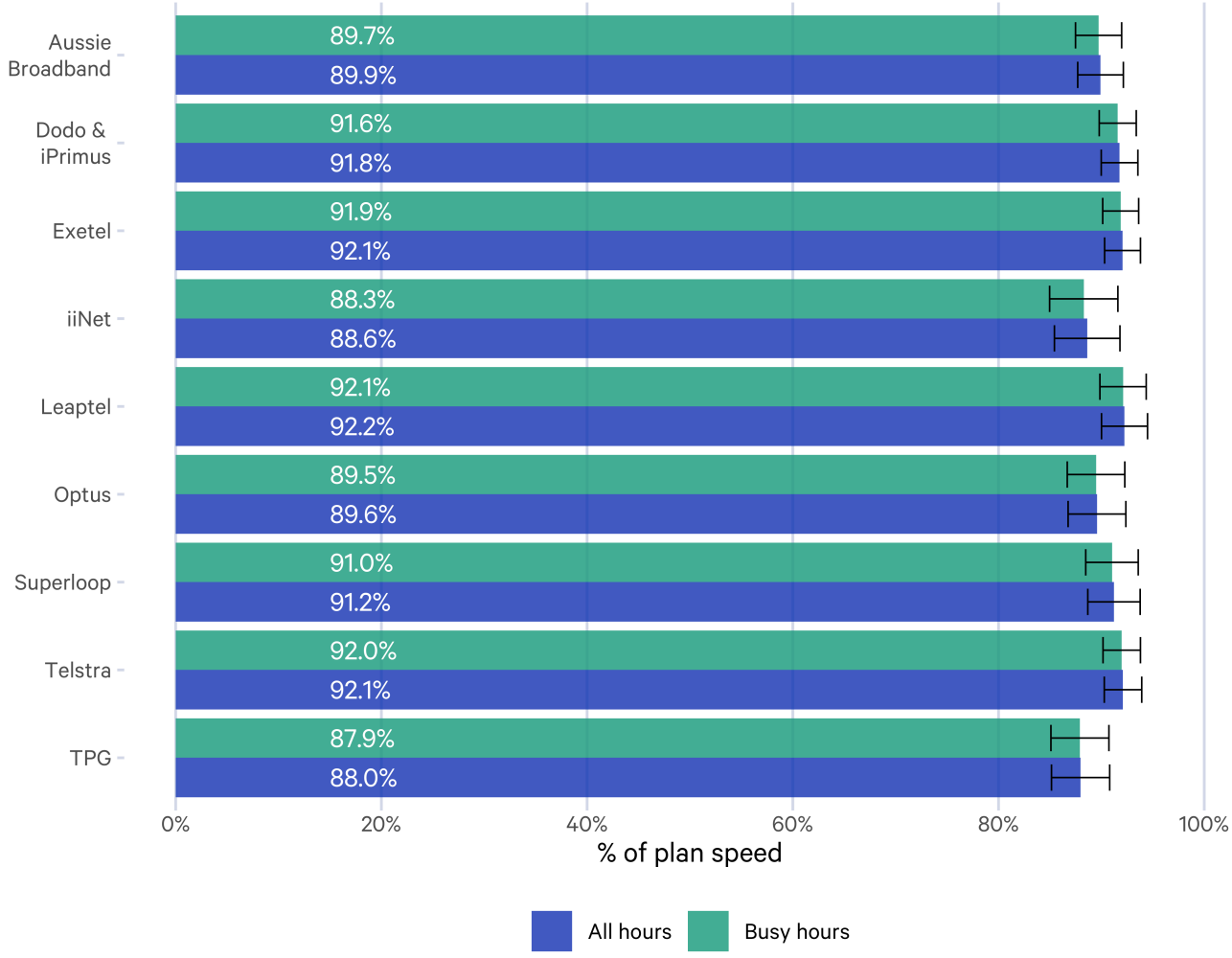
Upload speed test results

Figure 5 shows average upload performance for the main NBN fixed-line RSPs and plans. Average upload performance ranged between 88.0% and 92.2% of plan speed during all hours across RSPs. The results are in line with the previous report.

NBN fixed-line services achieved an overall average upload performance of 90.7% of plan speed during all hours, compared to 90.3% in the previous report. During busy hours (Monday–Friday), NBN fixed-line services achieved an average upload performance of 90.5% of plan speed compared to 90.1% in the previous report. As the uplink is not overprovisioned, upload performance results are lower than download performance results.

Figure 5: Average upload speed by RSP

NBN fixed-line plans. Including underperforming services. Error bars indicate 95% confidence intervals of the mean.



Other metrics

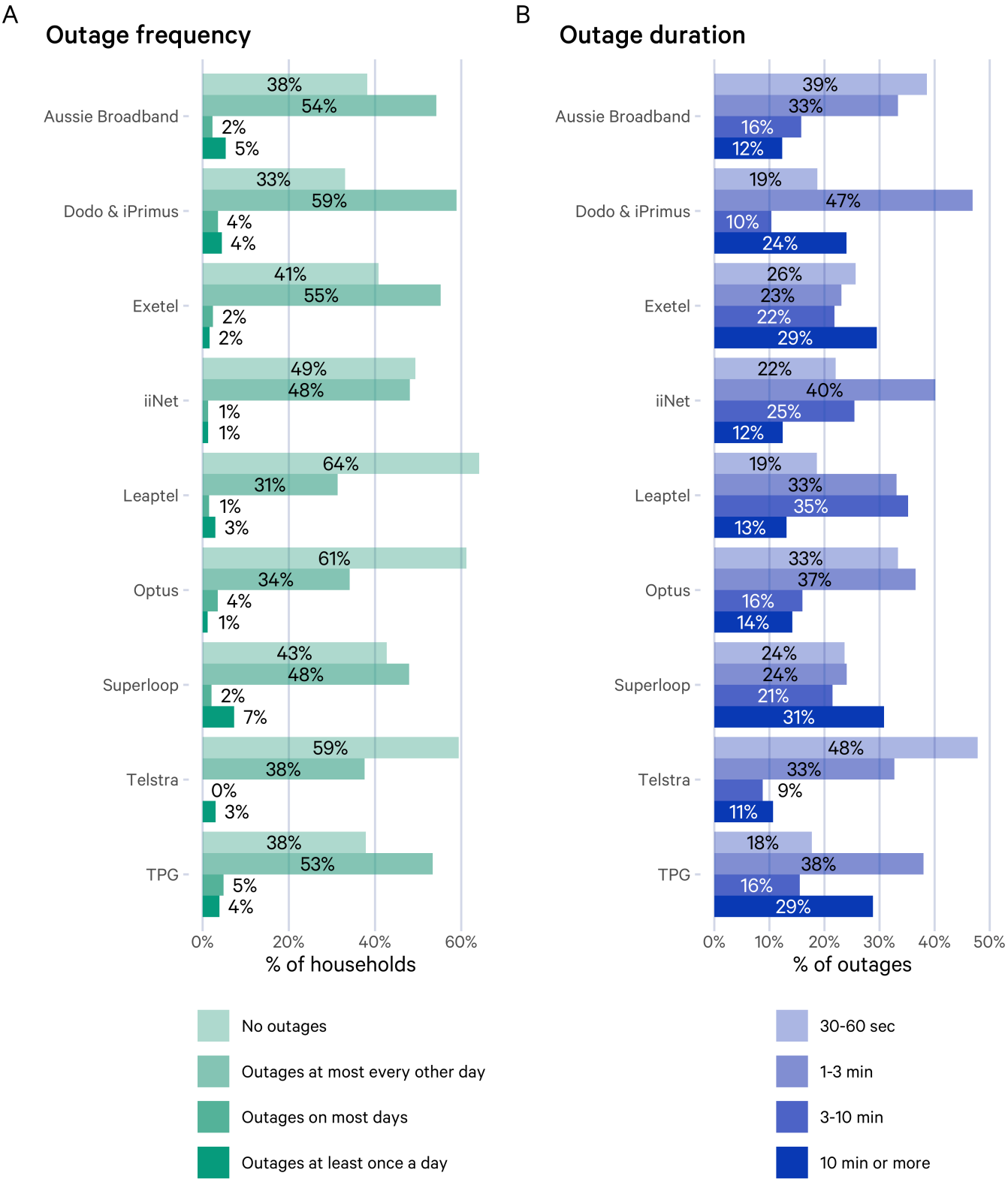
Average daily outages, latency and webpage loading results for each RSP were in line with results from previous reports, as were packet loss results across all NBN services. These results are available on the ACCC's dashboard.

Figure 6 shows the distribution of outage rates and the distribution of outage durations for each RSP. These metrics indicate respectively how often outages occurred and the severity of outages' impact on user experience.

The average daily rate of outages on NBN plans was 0.33 outages per day. 96% of households experienced fewer than 1 outage per day, and 69% of outages did not last longer than 3 minutes.

Figure 6: Outage characteristics by RSP

NBN fixed-line services. All hours.

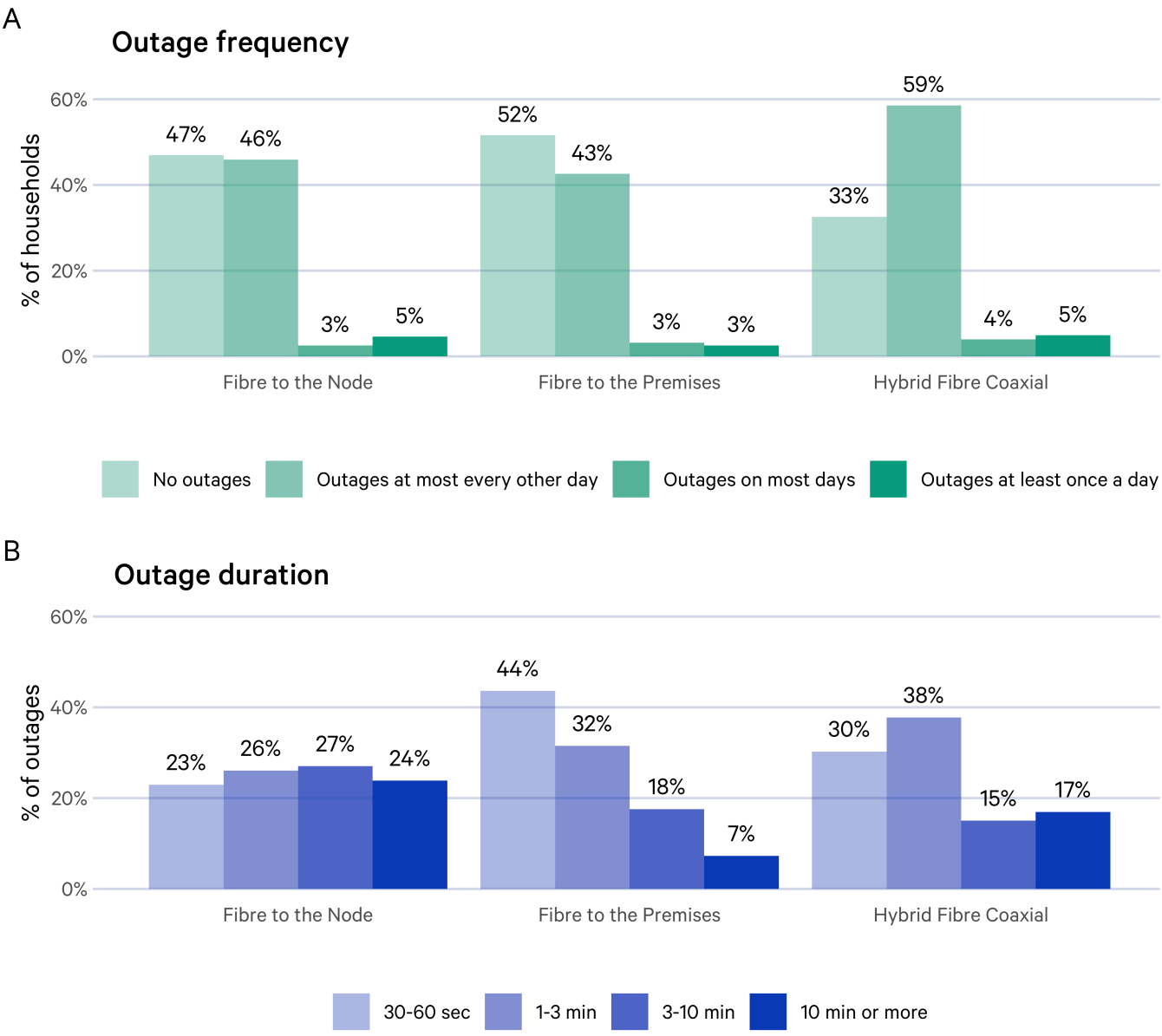


The volunteer panels of different RSPs have different access technology compositions, which may contribute to the differences between RSPs' results.

Figure 7 shows the distribution of outage rates and the distribution of outage durations for different access technologies.

Figure 7: Outage characteristics by access technology

NBN fixed-line services. All hours.



Other superfast access networks

This section presents data on 41 services on other superfast access networks on a variety of plans: 12/1 Mbps (1 unit), 25/5 Mbps (3 units), 50/20 Mbps (7 units), 100/20 Mbps (5 units), 100/40 Mbps (4 units), 250/25 Mbps (2 units), 500/50 Mbps (16 units) and 750/50 Mbps (3 units). The results presented for this section include fixed-line connections on Uniti's Opticomm network. Download and upload speeds are expressed as a percentage of plan speed.

These results are indicative only and should not be used to draw inferences about the performance of other superfast access networks.

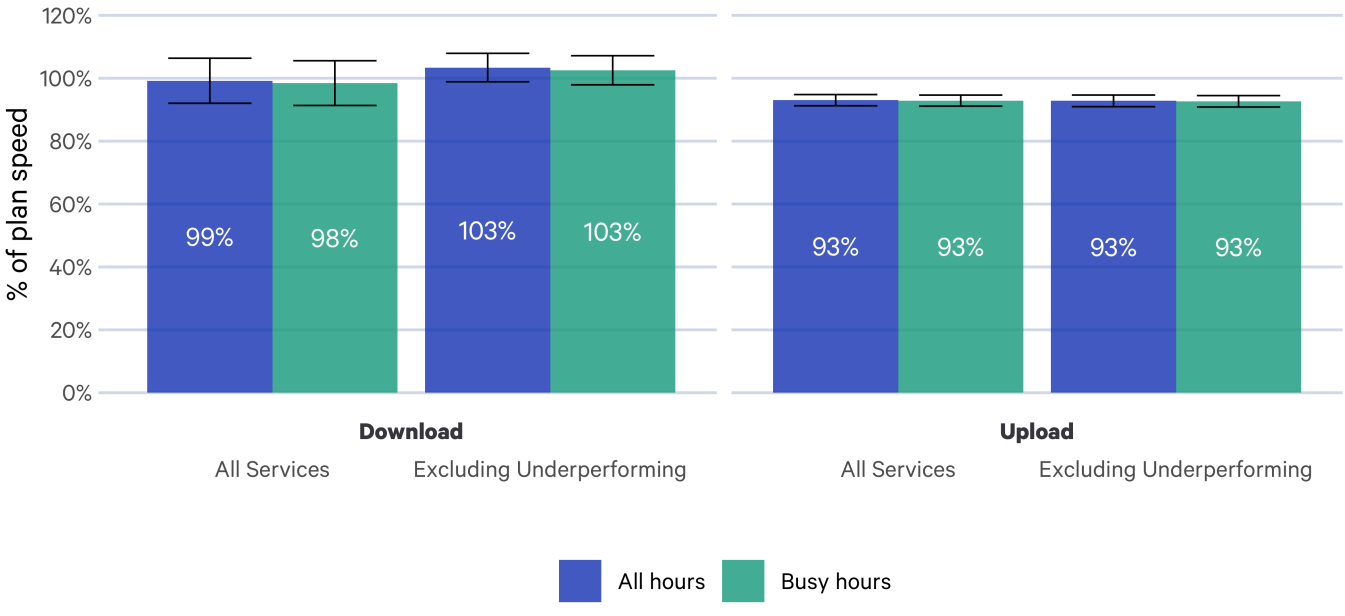
Speed test results

In this measurement period the sampled households on other superfast access networks attained an average download performance of 99% of plan speeds during all hours and 98% during busy hours (Monday–Friday) across all services.

The sampled services on other superfast access networks attained an average upload performance of 93% of plan speeds during all hours and busy hours (Monday–Friday) across all services.

Figure 8: Average download and upload speeds

Other superfast access networks. Error bars indicate 95% confidence intervals of the mean.



Other metrics

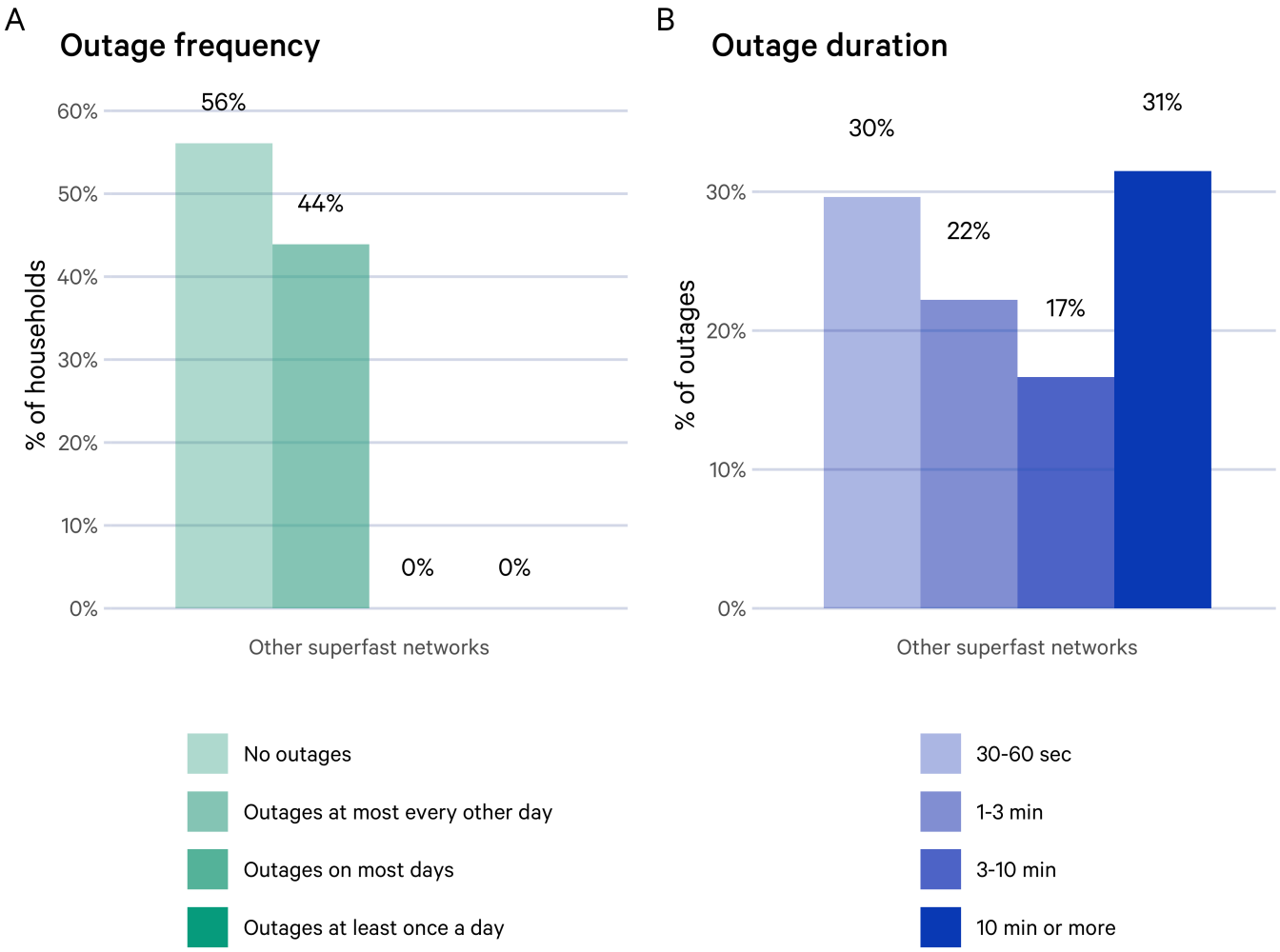
Latency, packet loss and webpage loading results were in line with results from previous reports. These results are available on the ACCC's dashboard.

Figure 9 shows the distribution of outage rates and the distribution of outage durations for other superfast access networks during all hours.

The average daily rate of outages in this measurement period on other superfast networks was 0.04 outages per day. 100% of households experienced fewer than 1 outage per day, and 52% of outages did not last longer than 3 minutes.

Figure 9: Outage characteristics

Other superfast access networks. All hours.



NBN very high speed services

This section is based on a total of 280 monitored services on the NBN Home Ultrafast plan with wholesale plan speeds of 1000/100 Mbps. The results include data from services where we identified that the volunteer most likely had a 100 Mbps link within the home and was unable to receive the full benefit of their very high speed plan (please refer to “Volunteers using speed constrained in-home equipment” on page 6).

Unlike other NBN plans, NBN Co does not currently overprovision the download component of very high speed services. Coupled with the fact that the Whitebox connects via gigabit Ethernet to the home gateway, this means that the end-to-end link is limited to 1 Gbps. After deducting network/transport protocol overheads, the fastest speed we expect to observe on these plans is around 940 Mbps. NBN Co now offers a new NBN Home Hyperfast residential speed tier with wholesale speeds of 2000/200 Mbps for FTTP connections, and 2000/100 Mbps for HFC connections. However, these services do not feature in our reporting as the Whiteboxes deployed by the program cannot measure these speeds.

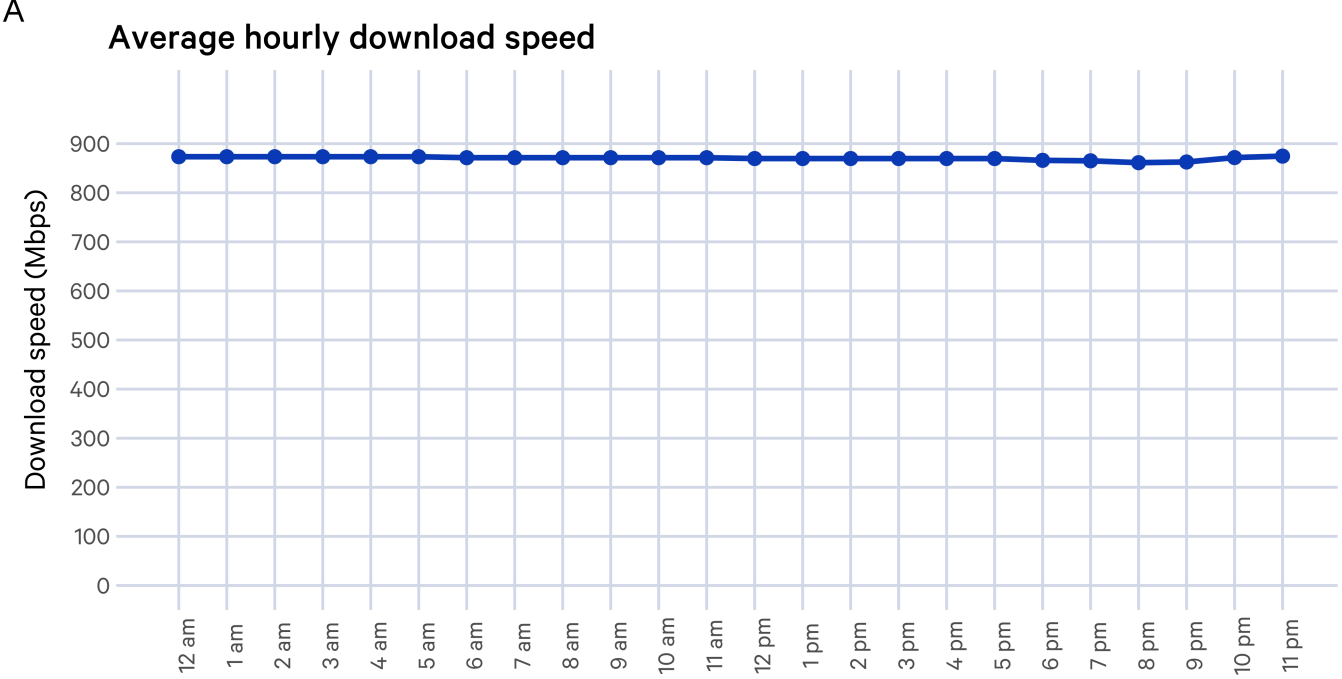
The hourly average download speeds attained by NBN very high speed services ranged across the day from 861 Mbps to 875 Mbps as illustrated in Figure 10A. Speeds typically started to decrease during the evening, dipping to 14 Mbps below the day’s maximum speed by 8 pm, and recovering later at night. These download speeds are in line with the previous report’s range of 880 Mbps to 891 Mbps.

Figure 10B shows the distribution of 59,100 download speed tests performed across 280 Whiteboxes connected to very high speed services on fixed-line NBN infrastructure. Of these tests, 79.0% achieved a download speed of at least 900 Mbps.

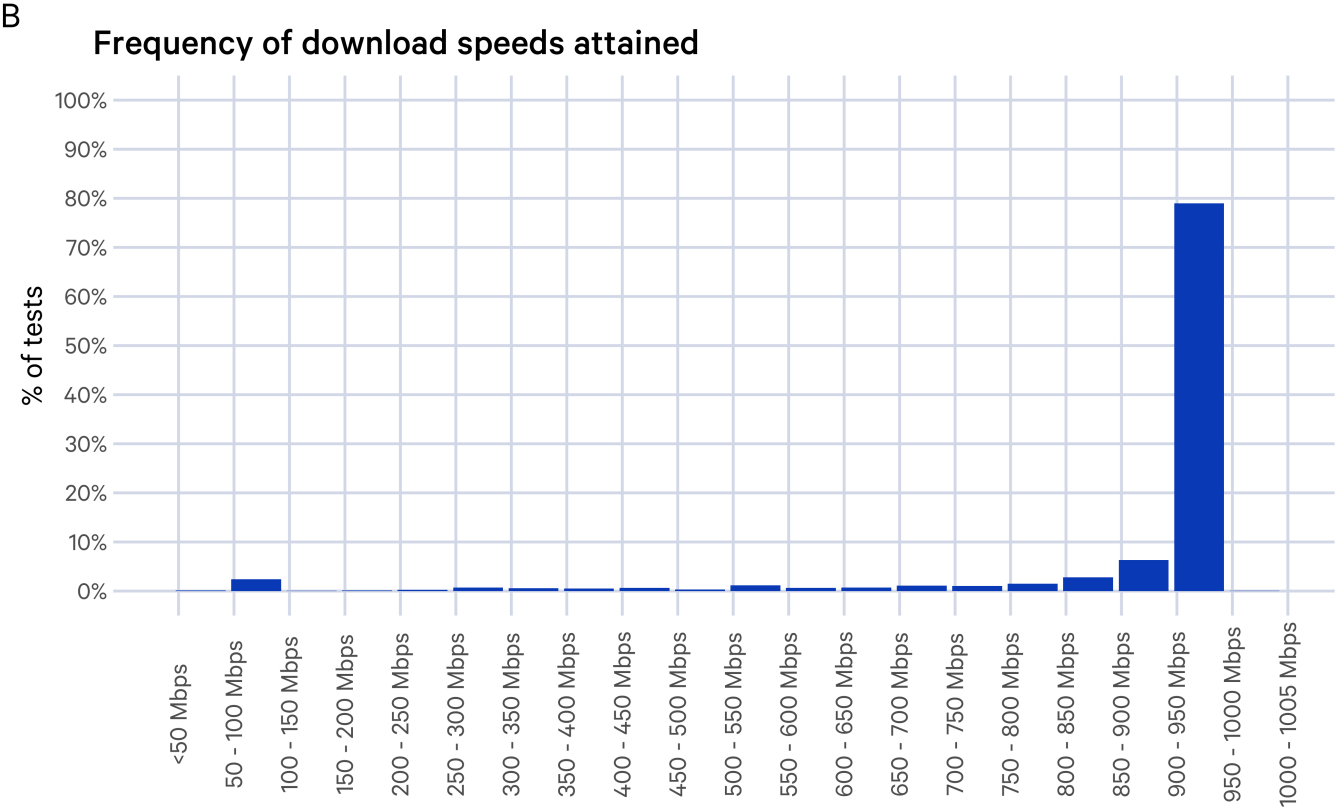
Figure 10: Download speed test results for very high speed services

NBN very high speed services.

A



B



Other metrics

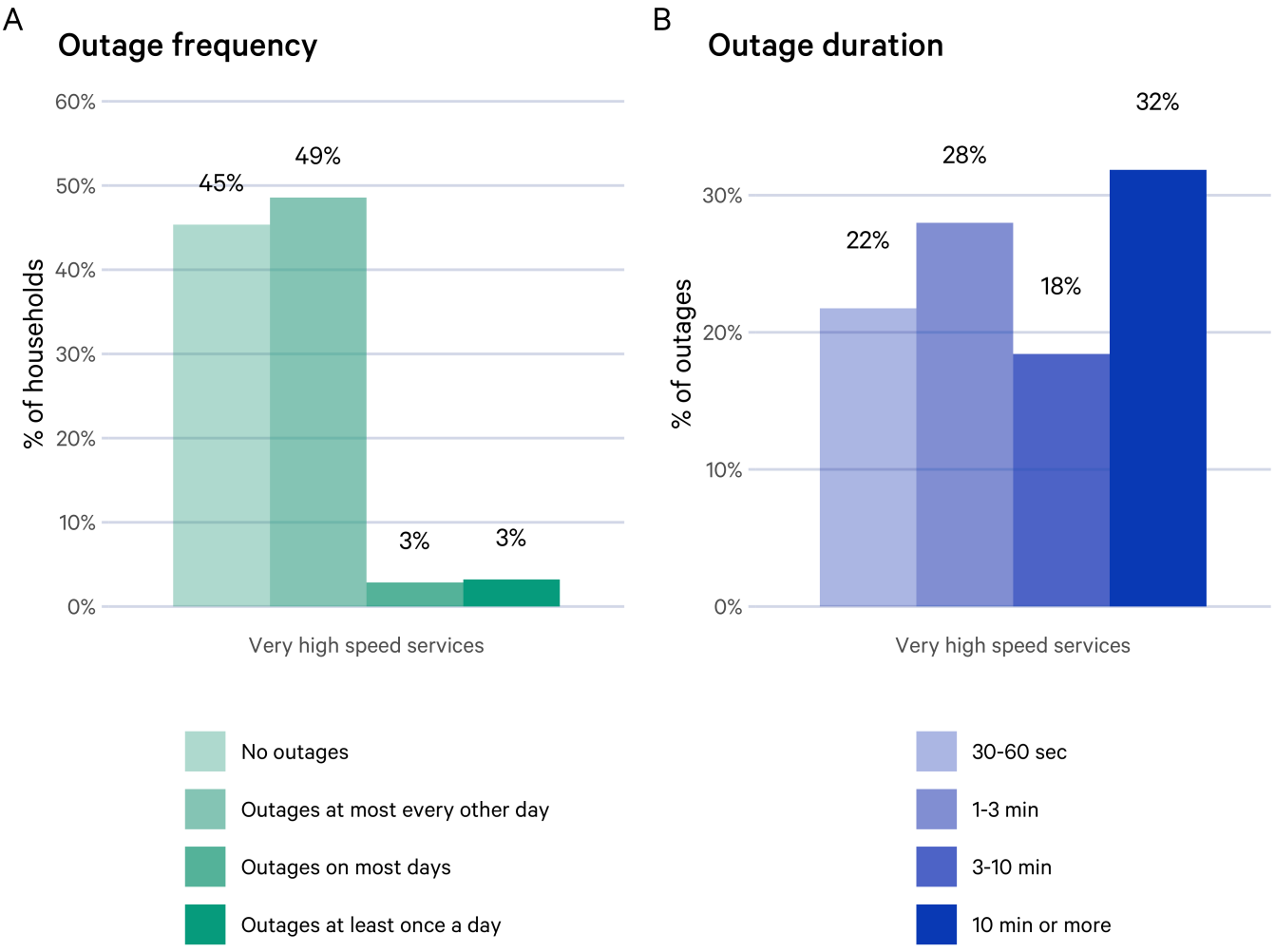
Latency, packet loss and webpage loading results were in line with results from previous reports. These results are available on the ACCC's dashboard.

Figure 11 shows the distribution of outage rates and the distribution of outage durations for very high speed services during all hours.

The average daily rate of outages in this measurement period for NBN very high speed services was 0.18 outages per day. 97% of households experienced fewer than 1 outage per day and 50% of outages did not last longer than 3 minutes.

Figure 11: Outage characteristics

NBN very high speed services. All hours.



NBN fixed wireless services

The following sections summarise key metrics from our NBN fixed wireless sample. This includes services using the 12/1 Mbps (1 unit), 25/5 Mbps (10 units), the Fixed Wireless Plus (67 units), the Fixed Wireless Home Fast (56 units) and the Fixed Wireless Superfast plans (19 units).

NBN fixed-line services and NBN fixed wireless services utilise different technologies that are not directly comparable in terms of performance.

The quality and maximum speed of a fixed wireless connection is often more variable than fixed-line technology. The following factors may affect fixed wireless performance:

- The distance of the consumer's premises to the fixed wireless tower.
- If there is a clear line of sight between the antenna on the roof of the premises and the fixed wireless tower, or if there is an obstruction (such as foliage).
- Weather conditions such as extreme heat or heavy rain.
- Network congestion. Each fixed wireless cell has a finite amount of capacity (e.g. a certain number of megabits per second), that is shared between the households connected to that cell. Where more households in an area connect to a particular cell and/or those households increase their usage towards the limit of the cell, the cell can become congested. The impact of network congestion on the fixed wireless network is typically most noticeable during busy hours.

Speed test results

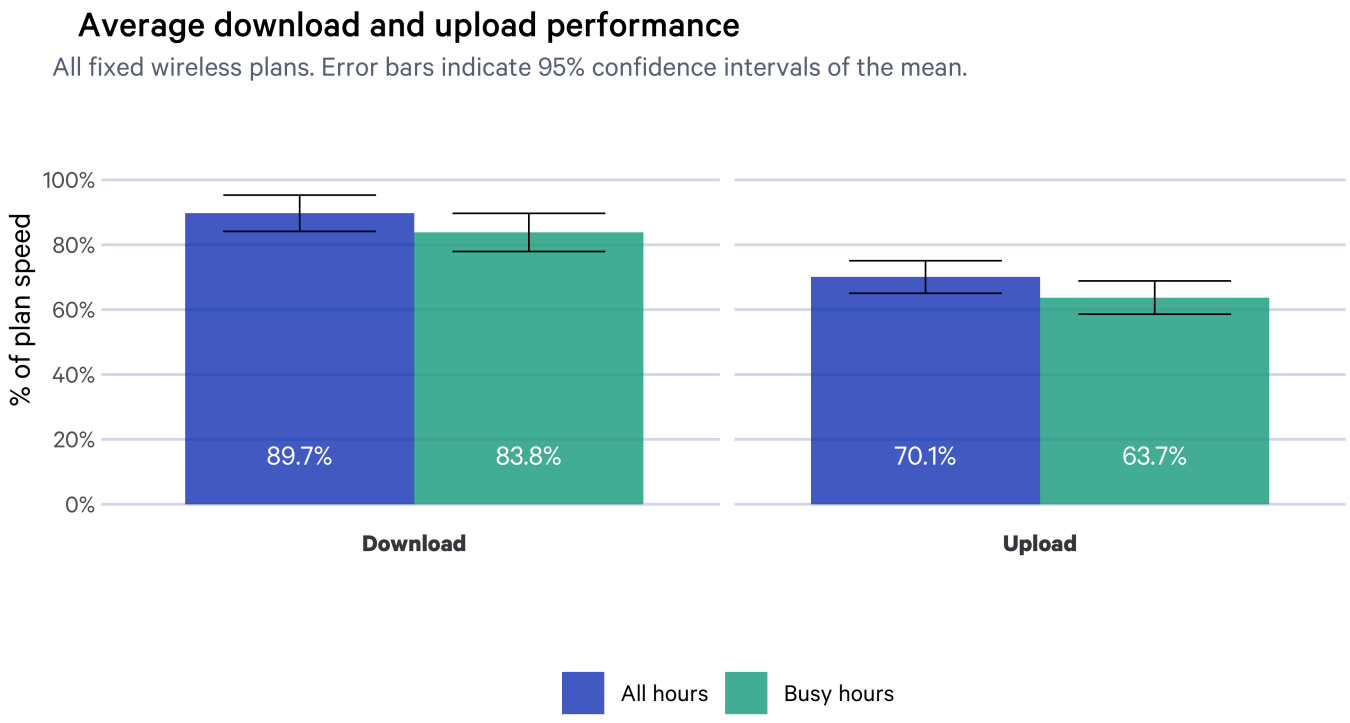
Performance for each Fixed Wireless plan is benchmarked against its maximum wholesale plan speeds.

The results in Figure 12 are expressed as a percentage of plan speed for a total of 153 NBN fixed wireless services across all measured Fixed Wireless plans.

During this period, users on NBN fixed wireless services attained an average download performance of 89.7% of plan speeds during all hours, decreasing to 83.8% during busy hours (Monday–Friday). In the previous report, average download performance was 90.1% of plan speeds during all hours and 85.4% during busy hours.

NBN fixed wireless services attained an average upload performance of 70.1% of plan speed during all hours, decreasing to 63.7% during busy hours. In the previous report, average upload performance during all hours was 70.6% of plan speed decreasing to 65.8% during busy hours.

Figure 12: Average download and upload performance — NBN fixed wireless



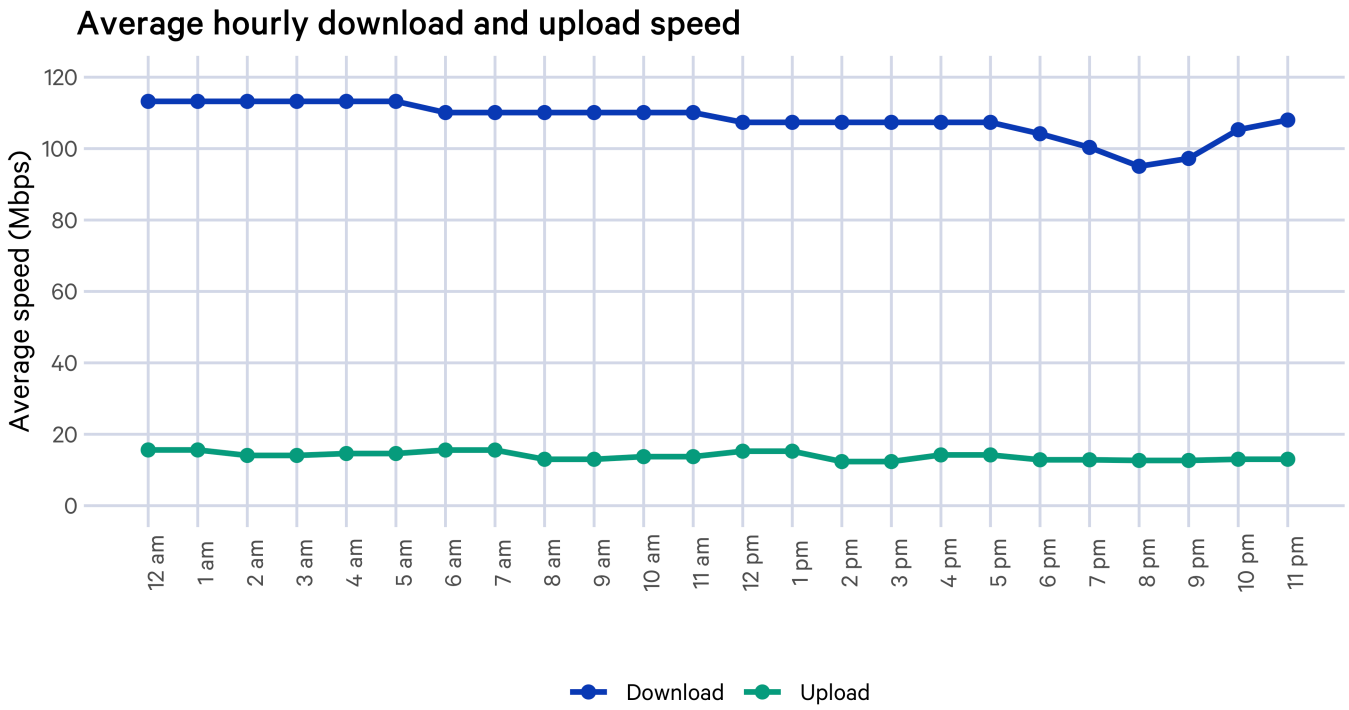
Fixed Wireless Plus

The Fixed Wireless Plus plan remains the largest fixed wireless cohort in this report's sample. Figure 13 shows the variation in average download and upload speeds during the day across 67 units on this plan. Download speeds typically started to decrease during the evening, dipping to 18 Mbps below the day's maximum speed by 8 pm, and recovering to higher levels later at night.

The average download speed for the Fixed Wireless Plus plan was 105.2 Mbps during all hours, decreasing to an average of 99.4 Mbps during busy hours (Monday-Friday). The average download speeds were 103.3 Mbps and 98.8 Mbps respectively in the previous report.

The average upload speed for the Fixed Wireless Plus plan was 13.7 Mbps during all hours and 12.6 Mbps during busy hours. In the previous report, the average upload speed was 13.8 Mbps during all hours, and 12.9 Mbps during busy hours.

Figure 13: Speed test results for the Fixed Wireless Plus plan



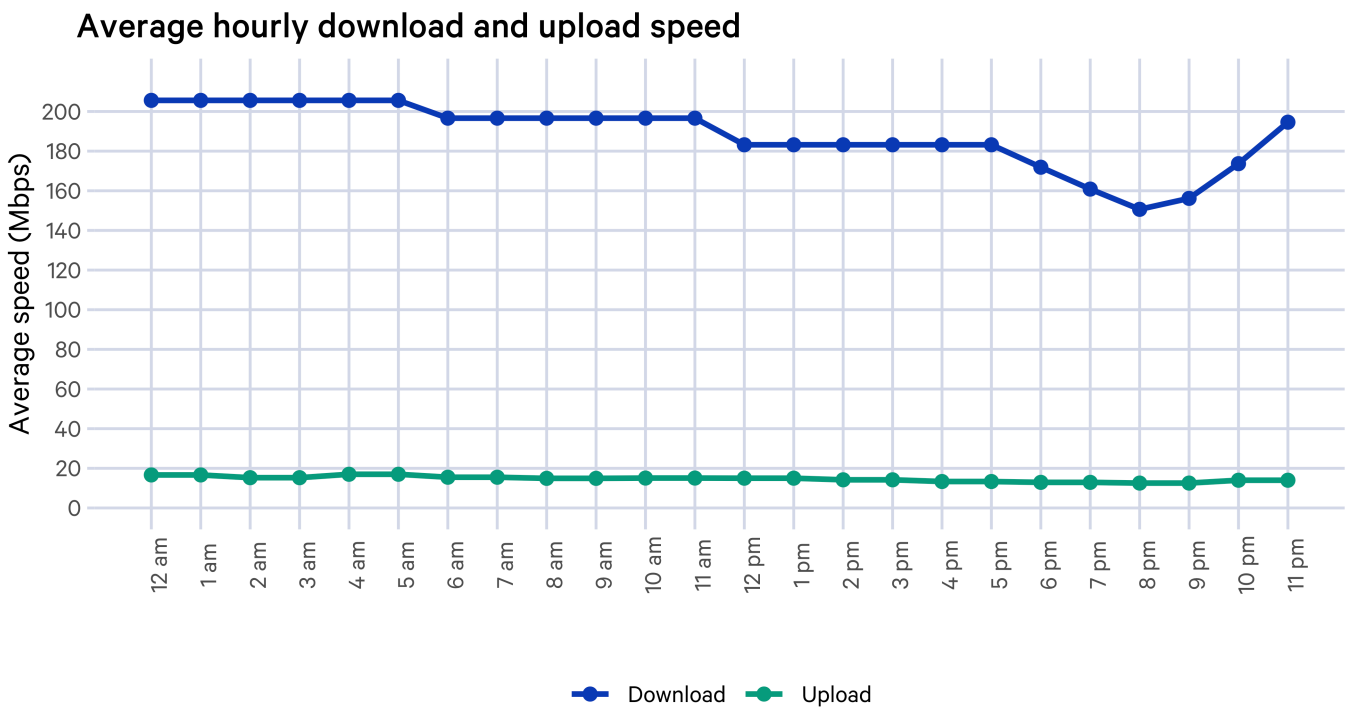
Fixed Wireless Home Fast

Figure 14 shows the variation in average download and upload speeds during the day for the Fixed Wireless Home Fast plan, which now has a sample size closer to Fixed Wireless Plus at 56 units. Download speeds typically started to decrease during the evening, dipping to 55 Mbps below the day's maximum speed by 8 pm, and recovering later at night.

The average download speed for the Fixed Wireless Home Fast plan was 176.6 Mbps during all hours, decreasing to an average of 160.5 Mbps during busy hours (Monday-Friday).

The average upload speed for the Fixed Wireless Home Fast plan was 14.3 Mbps during all hours and 12.6 Mbps during busy hours.

Figure 14: Speed test results for the Fixed Wireless Home Fast plan



Other metrics

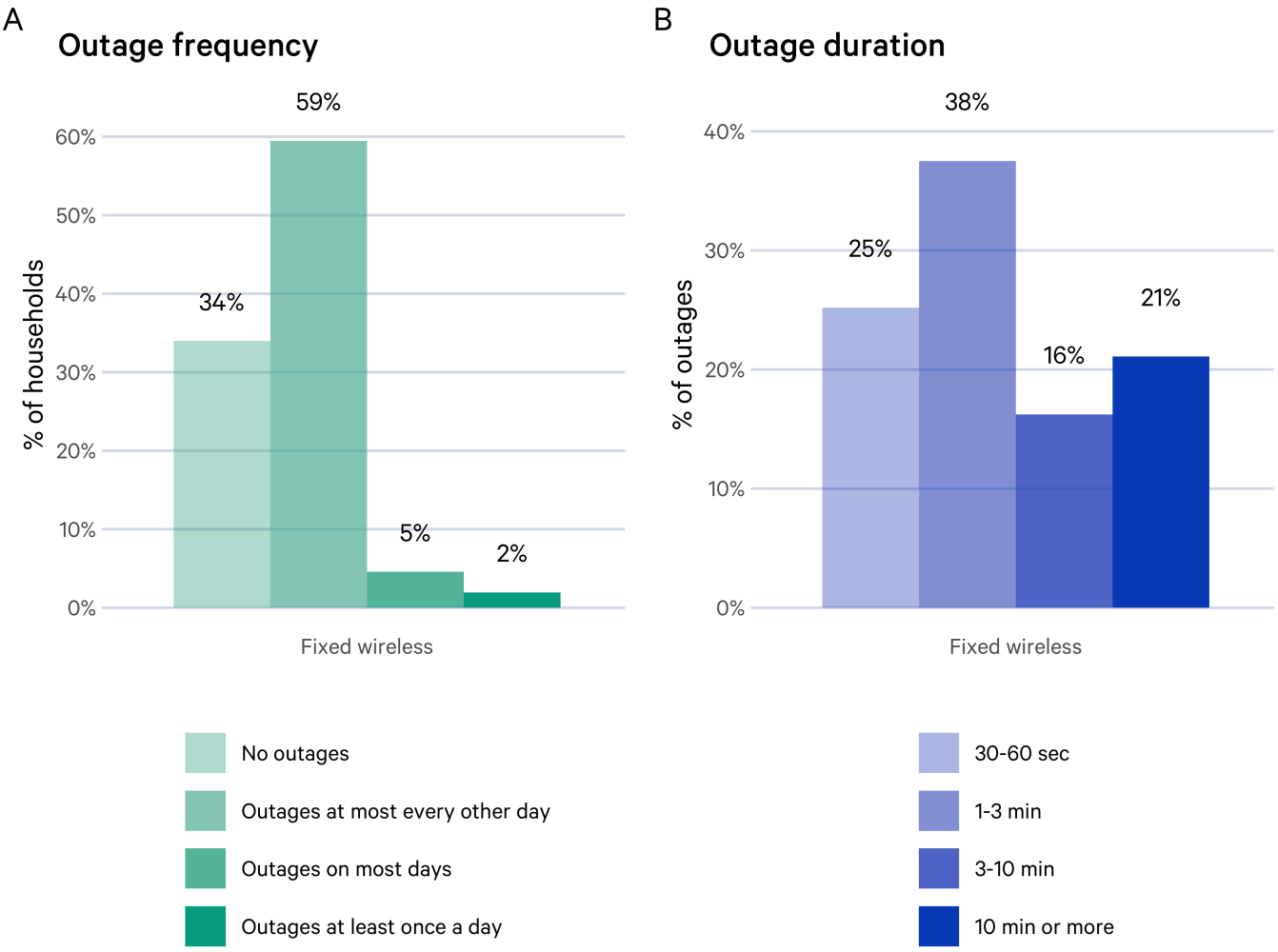
Latency, packet loss and webpage loading results were in line with results from the previous report. These results are available on the ACCC's dashboard.

Figure 15 shows the distribution of outage rates and the distribution of outage durations for fixed wireless services during all hours.

The average daily rate of outages in this measurement period for NBN fixed wireless services was 0.12 outages per day. 98% of households experienced fewer than 1 outage per day and 63% of outages did not last longer than 3 minutes.

Figure 15: Outage characteristics

NBN fixed wireless. All hours.



Satellite services

This section measures performance on two prominent satellite internet technologies: NBN Sky Muster, which leverages geosynchronous equatorial orbit (GEO) satellites, and Starlink, which utilises a constellation of low earth orbit (LEO) satellites.

NBN Sky Muster

NBN Co's Sky Muster service utilises two GEO satellites positioned approximately 35,786 kilometres above the equator. These satellites maintain a fixed position relative to the Earth's surface, enabling them to deliver consistent coverage over vast areas of Australia, including outback regions, islands, and other hard-to-reach locations.

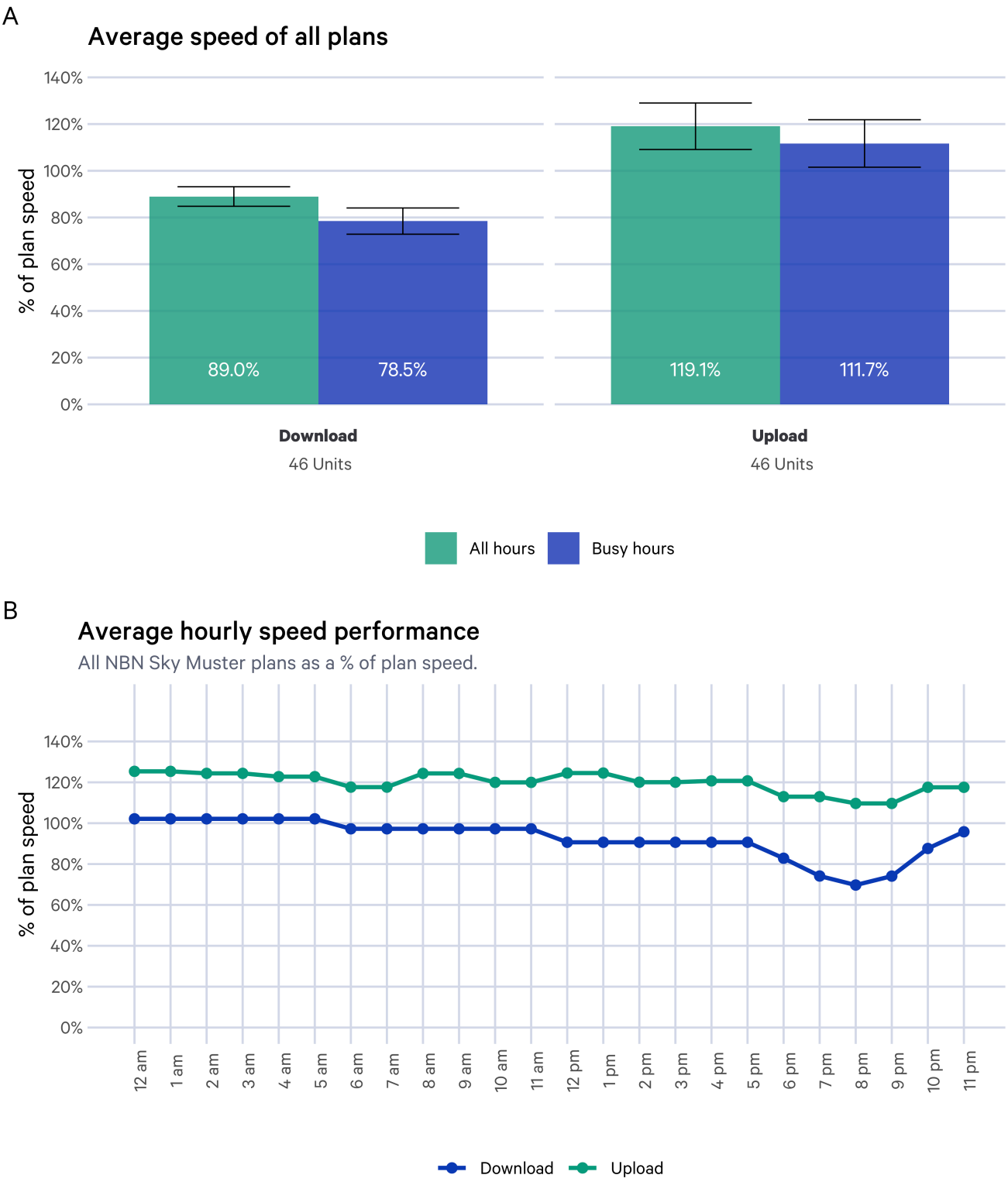
NBN Co's website advises that there are three tiers of maximum wholesale speeds available for its Sky Muster service which include the entry-tier (25/5 Mbps), the mid-tier (50/5 Mbps) and the high-tier (100/5 Mbps). NBN Co also states that the mid and high tiers support burst upload speeds "up to 10 Mbps" in optimal conditions. Services on these plans frequently recorded upload speeds of 10 Mbps, meaning that an upload speed of 10 Mbps was more appropriate for benchmarking performance. Like previous reports, NBN Sky Muster download and upload performance is measured against 3 speed tiers with varying sample sizes. These are the 25/5 Mbps plan (15 units), the 50/10 Mbps plan (14 units) and the 100/10 Mbps plan (17 units). These are grouped together in the following charts.

Figure 16A shows the average download and upload speeds for NBN Sky Muster services as a percentage of plan speed. Comparatively, upload speeds achieve a far greater percentage of plan speed, recording an average speed well above 100% in all hours and during busy hours. The average download speed was 89.0% of plan speeds across all hours, dropping to 78.5% during busy hours. This is similar to the previous report, where the average download speed was 86.1% of plan speeds across all hours, decreasing to 74.7% during busy hours.

Figure 16B shows how speeds vary across the hours of the day. Average hourly download speeds decreased during the evening, dipping 32.4% below the day's maximum by 8 pm to 69.7% of plan speeds. While NBN Sky Muster services on different plans follow a similar

daily pattern, the difference between the maximum and minimum average hourly download speeds can vary between speed tiers. The lower speed tiers often experience far less of a drop in performance compared to the higher speed tiers as a percentage of plan speed.

Figure 16: Speed test results for NBN Sky Muster

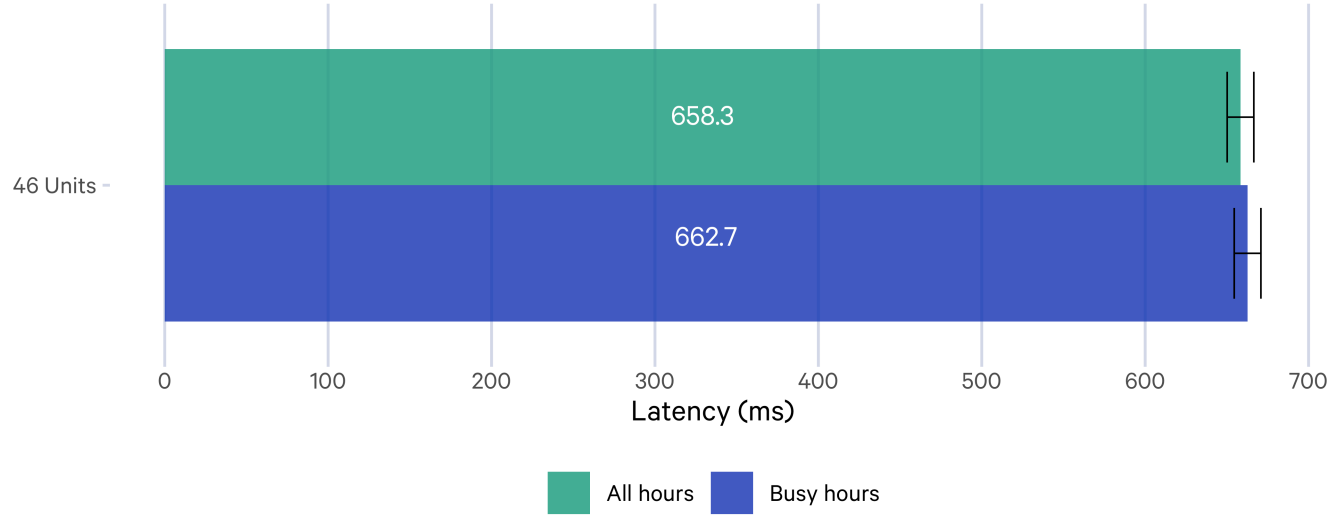


Latency

Figure 17 shows the average latency for all NBN Sky Muster services measured. The high latency of the Sky Muster satellite service is primarily due to the significant distance that signals must travel to and from the satellite's geostationary orbit, approximately 35,786 km above the Earth's equator. This journey includes an uplink from the user's device to the satellite, a relay to a ground station, and a return trip. While the latency is stable during busy hour congestion, its high duration is likely to hinder activities that require real-time responsiveness. Users relying on Sky Muster for such applications may experience delays, but the service remains predictable in its performance.

Figure 17: Average latency of NBN Sky Muster

Error bars indicate 95% confidence intervals of the mean. All plans.

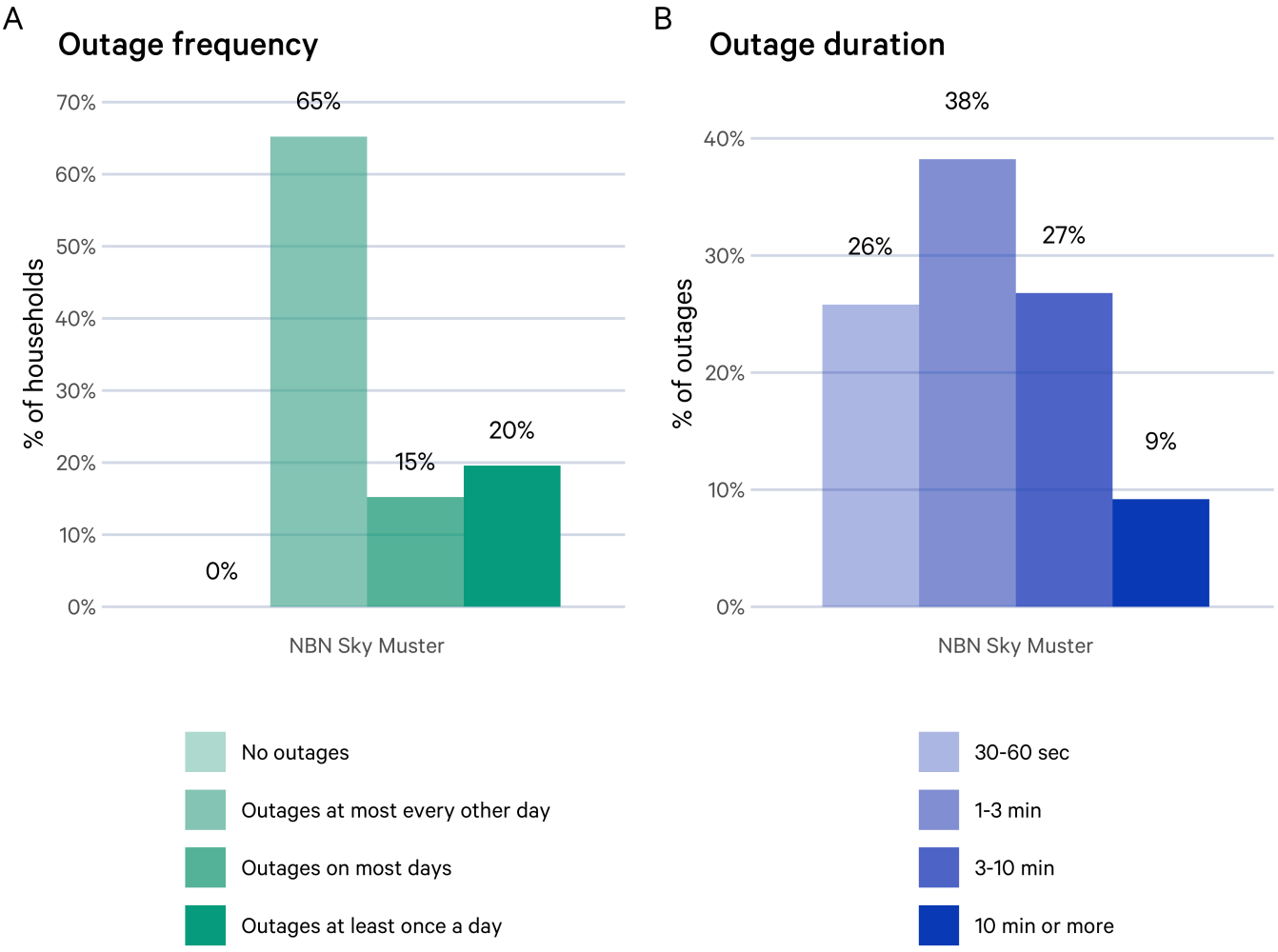


Outages

The average daily rate of outages in this measurement period for NBN Sky Muster services was 0.66 outages per day. 80% of households experienced fewer than 1 outage per day and 64% of outages did not last longer than 3 minutes.

Figure 18: Outage characteristics

NBN Sky Muster. All hours.



Starlink

Starlink's LEO satellites operate at altitudes ranging from 480 to 1,200 kilometres above the Earth's surface. This proximity to Earth allows for reduced latency and faster data transmission compared to GEO satellites. In this sample, there were 48 units on the Residential Max plan and 3 units on the Residential 100 Mbps plan. The download and upload speed results that follow only include services on the Residential Max plan. Latency and outage results include units on both the Residential Max and Residential 100 Mbps plans.

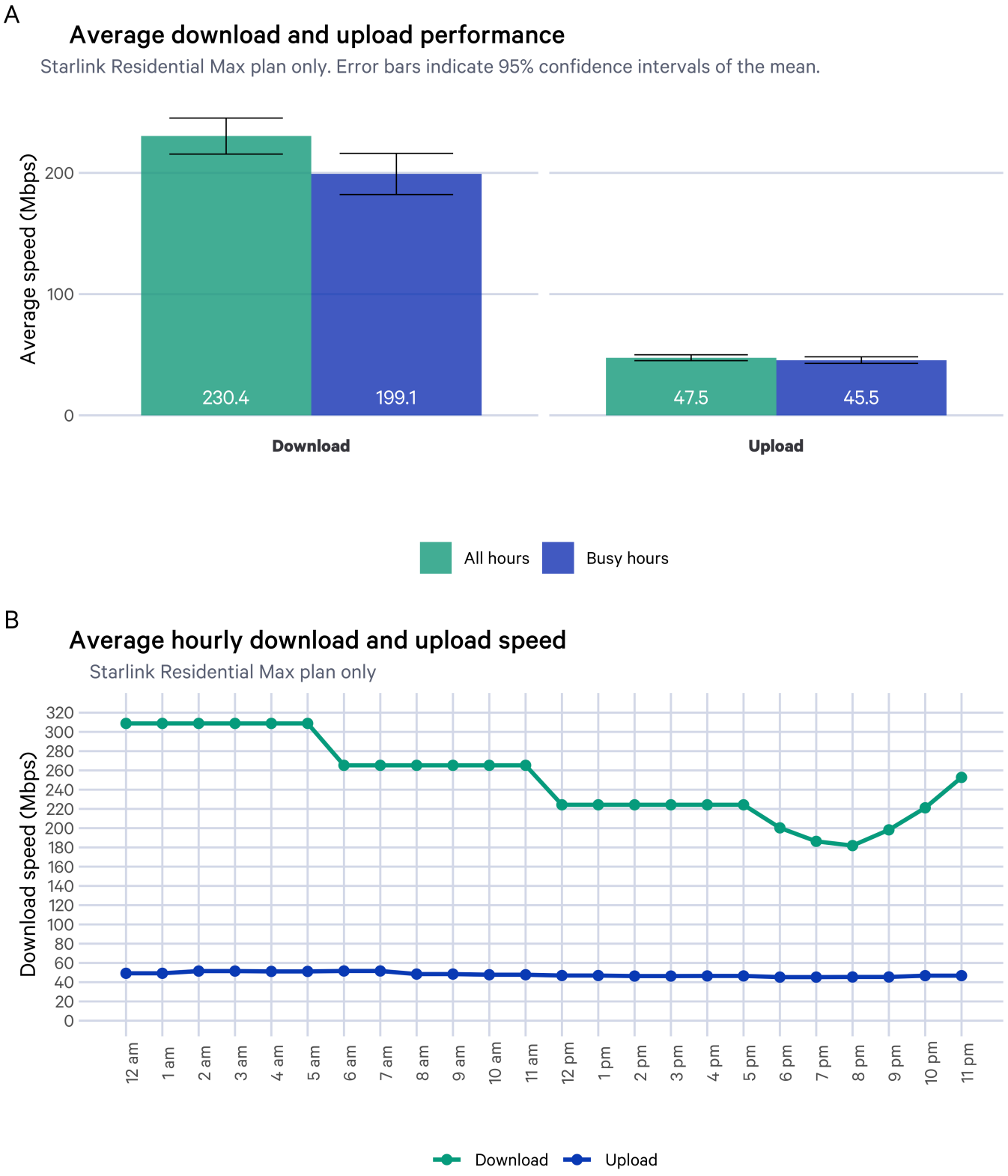
Speed test results

As illustrated in Figure 19A, Starlink Residential Max services recorded an average download speed of 230.4 Mbps during all hours, decreasing to 199.1 Mbps during busy hours (Monday–Friday). In the previous report, the average download speed was 225.8 Mbps during all hours and 197.3 Mbps during busy hours.

Upload speeds on Starlink Residential Max services were comparatively more consistent throughout the day, attaining an average speed of 47.5 Mbps during all hours and 45.5 Mbps during busy hours. These results are in line with the previous report, where the corresponding figures were 48 Mbps during all hours and 45.9 Mbps during busy hours.

Figure 19B shows the variation in average download and upload speeds on Starlink Residential Max services throughout the day. Download speeds typically started to decrease during the evening, decreasing 126.9 Mbps below the day's maximum speed by 8 pm, and recovering later at night. By comparison, upload speeds showed little variation throughout the day.

Figure 19: Speed test results for Starlink

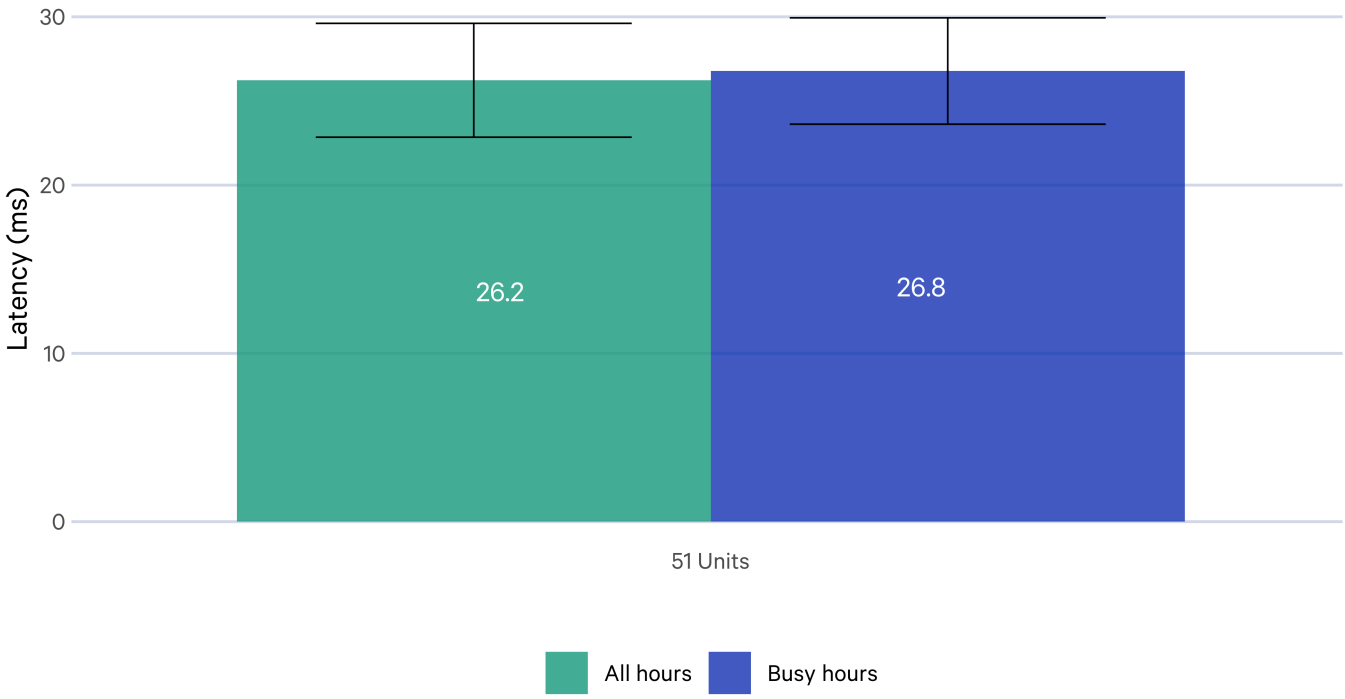


Latency

Latency for Starlink services is far lower than latency for NBN Sky Muster services, as expected due to LEO satellites being significantly closer to the Earth's surface than GEO satellites. As illustrated by the confidence intervals in Figure 20, latency is stable for all recorded units. The average latency for Starlink services was 26.2 ms during all hours and 26.8 ms during busy hours, consistent with the previous report's averages of 25.4 ms during all hours and 26.2 ms during busy hours.

Figure 20: Average latency of Starlink

Error bars indicate 95% confidence intervals of the mean. Starlink all plans.



Outages

The average daily rate of outages in this measurement period for Starlink services was 2.05 outages per day. 98% of households experienced fewer than 1 outage per day and 91% of outages did not last longer than 3 minutes.

The average daily rate of outages for Starlink services would instead be 0.07 outages per day if the calculation does not include a unit that recorded a disproportionate number of outages. The large number of outages between 30 and 60 seconds was also affected by this unit.

Figure 21: Outage characteristics

Starlink all plans. All hours.