



# Senate Standing Committee on Rural and Regional Affairs and Transport: Inquiry into the Shutdown of the 3G Network

## Telstra Response: Questions on Notice

1 August 2024



## Executive Summary

Telstra welcomes the opportunity to provide more information in response to questions taken on notice, and additional information sought by the committee. responding to those questions taken on notice. Please note, this document contains answers to questions 1, 3-7, 9-12, 15 and 17.

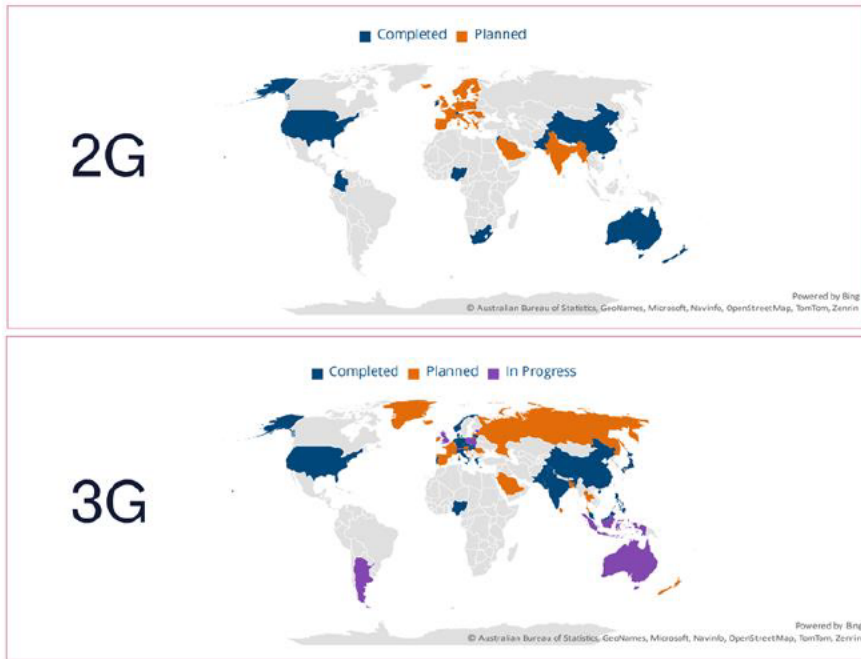
### **Question 1: Has any country in the world closed its 2G and 3G networks.**

The Mobile Suppliers Association (GSA) which is a global body representing mobile suppliers and associates, and, operators, published a report in late 2023, that sets out information on the global progress and plans of 2G and 3G closures. Please find this report **attached**.

This is the most credible consolidated and independent source of network closure information that Telstra is aware of.

In summary, by the end of November 2023, GSA had identified 177 completed, planned, or in progress 2G and 3G network closures across 59 countries and territories. Examples of national operators in the world that have fully closed both 2G and 3G include AT&T and Verizon in the US and SingTel in Singapore, which is currently in the process of decommissioning their network. We are also aware that Canada is set to phase out 2G and 3G too.

Furthermore, the images set out below display areas where 2G and 3G are now closed and include the United States and China as well as developing nations like Nigeria as having completed closure for both technologies. In Europe, Germany, Italy, Greece, Portugal, Denmark, Norway, and Ireland, are shown to have closed 3G too.



(Note this map does not include countries that never deployed 2G, and some countries where exits are currently in progress but not reported to the GSA)



**Question 3: What are the number of roaming devices that are 3G.**

For the period between 1-28 July 2024, there was a total of just over 2.3 million international roaming devices connected to Telstra’s network. Telstra is not able to provide a definitive number of 3G-only international roaming devices, due to how international roaming operates.

For example, network usage is controlled by roaming agreements between carriers, with some agreements being 3G based. While these devices will work post-3G closure with our developed solution, they will likely prefer 3G while the network remains available.

Secondly, 4G voice calls are managed by the home network with no record within the roaming network, e.g. Telstra. Therefore, we cannot confirm the 4G voice calling capability of these devices.

Given these considerations, two numbers are provided, noting that both are inflated due to the points above.

- 914 (0.04% of all International Roaming devices) are “3G only” as they made >1 3G voice call and had data usage only on the 3G network. (Inflated by devices preferring 3G due to Roaming Agreement).
- 71k (3.0% of all International Roaming devices) are indeterminate as they made >1 3G voice call but had zero or 4G only data usage recorded. (Inflated by compliant mobile handsets able to use 4G, but due to varying calling conditions and handset scanning used the 3G network because it was available and was selected, only a subset are devices of primary focus – 4G Data & Voice/3G 000).

**Question 4: How many Triple Zero calls were made via 3G.**

Telstra can confirm most calls to Triple Zero calls are made from compliant mobile handsets able to use 4G, however, due to varying calling conditions and handset scanning, some 4G-enabled devices still connect to Telstra’s 3G network because it was available and was selected first. These are not a concern when the 3G network shuts down, as they will use the available 4G network.

Devices classified as “non-compliant” are the variants that have been reported in regular reporting. These include devices that are 3G only or are 4G capable but are hardwired to make voice calls on 3G. We are yet to analyse the call data to extract the subset of devices that use 4G for voice and data but are hardwired to use 3G for Triple Zero calls.

Between 1 July – 28 July 2024, the number of the non-compliant devices using the Telstra network that made calls to Triple Zero were:

- 3627 (0.9% of total calls to 000) Telstra customers.
- 6698 (1.7% of total calls to 000) camp-on customers (Optus, TPG, devices without SIM cards).
- 930 (0.2% of total calls to 000) international roamers.



**Question 5: Can Telstra provide new handset sales figures.**

In the quarter ending June 30, 2024, Telstra recorded sales of 463,135 handsets through our branded and non-branded channels, a slight increase from the 461,453 sold in the previous corresponding period.

It's important to highlight that these figures exclusively represent sales from our direct channels and do not account for devices sold through third-party marketplaces such as Amazon or Kogan.

**Question 6: Has Telstra specifically engaged with the handset providers (Samsung or Google) to ask them to do a software update to address the VOLTE issue.**

Telstra has an ongoing relationship and partnership with most leading device manufacturers and has collaborated closely with Samsung and Google to assess device upgrade capabilities.

Theoretically, all devices with 4G and appropriate band support could receive software updates to enable Voice over Long Term Evolution (VoLTE) and emergency calling over VoLTE. However, from a practical perspective many devices are either too outdated to fall within the manufacturers' support window or are from manufacturers that no longer operate.

Additionally, many of the devices in the affected groups are grey imports from international vendors. Typically, no Australian carrier, including Telstra, has established relationships with these overseas suppliers, which can complicate support and upgrade processes for these imported devices.

It is important to note that since 2016, Telstra has mandated that all devices sold by us must support emergency calling over VoLTE and this is validated via a rigorous testing program before ranging.

**Question 7: During their appearance at the hearing on 23rd July 2024, the National Farmers Federation (NFF) stated that they had requested from Telstra a fast and dedicated pathway to resolve post-coverage shutdown issues which went above the business-as-usual approach. Is Telstra open to this request.**

We announced the closure of 3G in October 2019 and have provided our customers with almost 5 years' notice so they can take the action needed to check and upgrade their devices before this transition takes place. We committed that we would not switch off the 3G network until we could provide equivalent 4G coverage via our 4G network.

It is important to remember that for over 97 percent of our customers, the closure of our 3G network will not require any action on their part to retain coverage and service.



However, we understand the importance of continuing to engage with our customers and provide support once Telstra's 3G network is closed. One of the ways we're supporting our customers is through routing incoming calls. When customers dial Telstra's general number (13 22 00) we can automatically recognise that they are impacted by the 3G closure. Callers will then be asked via the Interactive Voice Response (IVR) whether their enquiry relates to the 3G network closure. If the customer confirms this, they will be automatically routed to a customer care team skilled in 3G closure. This is the best approach for customers to get specialised 3G support on questions or issues they may have, there is no separate 1800 number to directly connect customers to the 3G dedicated team, instead, we utilize the Interactive Voice Response (IVR) routing as explained above. Our specialised 3G closure team can quickly triage a customer's enquiry and either support them directly or route their call to one of our assurance experts.

For First Nations people, we have established our First Nations Connect phone line (1800 444 403), dedicated to helping Aboriginal and Torres Strait Islander customers, and respecting culture and community. This phone service has access to interpreter services for approximately 50 different First Nations languages and dialects, and our staff are trained and familiar with our 3G closure, and the actions we need our customers to undertake.

To further support our vulnerable customers, there is a separate 1800 number that has been provided to these customers as part of our communications, where they will be connected to the dedicated 3G team who are trained to triage the customer's enquiry and be able to resolve or connect the customer to further support.

More information relevant to this question is set out in **question 9**.

**Question 9: What post-shutdown plans and support measures for affected customers will be in place after the shutdown, and for how long? Will there be a dedicated number that customers can call to seek advice on the issue of the shutdown.**

We appreciate that despite our ongoing efforts to communicate to our customers the need to upgrade their devices, there will inevitably be customers who will not do so before the network closes.

Telstra is committed to continuing to support our customers and we are ready to manage any additional demand or support required for the period post-closure. The measures we will have in place include, but are not limited to:

**Device supply:**

Our demand and supply planning teams are actively engaged with our device vendors and logistics partners to maintain an ample stock of devices that are typically used by our customers.

This commitment extends from the current phase through the transition's culmination and the subsequent months, guaranteeing continued accessibility to devices that align with customer preferences.

**Trained customer service agents:**

Our customer agents will be trained to support customers with 3G network closure advice and support.



### **3G Dedicated Call Centra via Interactive Voice Response (IVR) routing**

Customers can dial Telstra's general number (13 22 00) where we can automatically recognize that they are impacted by the 3G closure. We will then ask via the Interactive Voice Response (IVR) whether their enquiry is related to the 3G network closure. If the customer confirms that the call relates to 3G, they will be automatically routed to a customer care team skilled in 3G closure. This measure will continue post-closure to support customers contacting us with 3G-specific issues.

### **Billing treatment**

Telstra confirms there will be no charges to consumer customers using a device that cannot make calls when the 3G network is closed. For prepaid services, refunds will be issued to customers who contact us with a long-life recharge expiry. Auto-recharge direct debit payments will also be cancelled from 31 August, and, customers who contact Telstra regarding a credit that expires after 31 August, will be offered a recharge credit when they upgrade their device.

Telstra postpaid customers' monthly service charge will be waived for two months and all postpaid services using incompatible handsets will be disconnected from 1 October.

**Question 10: If a customer reports to Telstra after the shutdown that the 4G coverage is not equivalent to the 3G coverage they were receiving (regardless of whether your coverage map indicates otherwise), does Telstra have a documented process of resolution that will be consistently applied. If through this process the customer is found to be correct, will Telstra offer a discount on alternative connectivity options.**

We're committed to delivering 4G coverage to areas where 3G is currently available as set out in Telstra's network coverage maps. However, Telstra cannot guarantee that a user experiencing fortuitous coverage via 3G, will receive the same via 4G following the closure of Telstra's 3G network. It's common for there to be areas beyond the fringe of our predicted and published coverage that have a usable signal due to irregularities in the local environment and terrain that permit the signal to extend further than expected. We refer to such coverage as 'fortuitous coverage'. We don't include such areas in our published coverage, as the coverage is unpredictable and vulnerable to change over time due to local environmental factors (e.g. vegetation growth or building activity) and small signal changes that may result when our mobile sites are upgraded, optimised, or maintained.

It's also important to note that the device customers use can impact the user experience of equivalency. What this means is that there is a requirement to use an equivalent device (e.g. Blue Tick 4G if previously using Blue Tick 3G). This also applies to the use of mobile coverage extension devices.

However, we remain committed to assisting our customers post-closure on a range of matters including mobile coverage. Where a complaint is not resolved to the satisfaction of the customer or cannot be resolved by our usual investigative process and troubleshooting advice, the complaint can be escalated to a specialised resolution team for further investigation.

For our rural and remote customers, we have a dedicated mailbox for community related issues and Local Relationship Managers to assist with the resolution of complaints.

For any complaints requiring more complex network investigation and analysis, we have a dedicated customer complaint escalation portal in our Network Optimisation and Performance Group.



In the event coverage inequivalence is determined to be present, we will work to remediate and support customers with advice on the best possible solutions for their user requirements.

**Question 11: Do Telstra and Optus have specific roll-out plans for introducing satellite technology, such as Starlink, to areas of Australia that do not have coverage, and are there estimates on how much additional coverage satellite technology will be able to provide in future.**

Earlier this year, Telstra announced that we signed an agreement to become the first provider in the world to offer broadband plus fixed voice powered by Starlink. The service is available to rural and remote Telstra customers in Australia. Customers will be billed via their Telstra account and have local support

Our Starlink offering is for fixed broadband and voice. It does not support mobile coverage, although mobile devices can connect to the Starlink broadband service using WiFi.

Technology involving satellite connectivity direct to mobile handsets is evolving rapidly and we will continue to seek new technologies that will further expand voice and broadband coverage around Australia.

Limited Direct to Handset (DTH) capabilities are already available for Telstra customers using the latest iPhone in the form of Apple SoS that allows messages to be sent to 000 and Find my Friend which allows a friend to see a customer's location even when the device is outside the mobile coverage footprint.

Telstra is also continuing to explore DTH capabilities with LEO satellite providers, which will ultimately provide text, voice, and some data capabilities as a safety net of basic connectivity in areas outside the reach of mobile coverage

Initially, DTH capability via LEO satellites will utilise the same bands as used in terrestrial mobile networks so will have wide handset support. Beyond this, the development of standardised satellite connectivity to mobile handsets using dedicated spectrum bands is progressing with the 3GPP standards bodies.

Regardless, all DTH satellite-based connectivity will be limited to providing outdoor connectivity and will also be limited in capacity and capability. Satellite technologies should be seen as a supplement to terrestrial mobile coverage but not a substitute, in the same vein as mobile is not a substitute for fixed connectivity.

**Question 12: Satellite technology is more expensive than traditional connectivity options. What investments/measures are being made by Telstra and Optus to ensure the price of satellite technology is accessible for those who may need it.**

Telstra's Satellite offering is a fixed service to provide broadband and voice to customer's homes. For Next Generation Wireless Loop (NGWL) voice-only services, we can support customers with hardware at no cost and the voice service is the same price as a regular voice service - \$50/month.





**Question 15: After the shutdown of 3G, will Telstra and Optus conduct reviews on their public awareness programs, and attempt to determine why, as mentioned in multiple submissions, some businesses were still unaware of the shutdown only months out from the deadline.**

Since announcing our intent to close the 3G network in 2019, we have undertaken extensive customer, stakeholder, community, and media outreach.

To help customers understand if they are impacted by the closure, we launched a SMS checker which has been used over 260,000 times with 90,000 responses indicating action is required by the customer. It has been such a successful initiative we worked closely with Optus and TPG to help them develop a similar tool.

Since March, we have undertaken three key media activities which have resulted in over 4,600 pieces of media coverage across online, broadcast, social, and radio within both metro and regional markets. The pieces have had a potential reach of 145 million people.

Additionally, we have had over 5,800 paid radio spots nationally over the past year promoting the upcoming closure and reminding local communities to take action.

In addition, we have been working closely with AMTA who issued a few media statements that have had strong pick up in key business and telco media.

Alongside these external campaigns, we have undertaken regular 1:1 comms with impacted customers including adding a recorded voice message to all identified mobiles which is a constant reminder that an action needs to be taken by the user. During the last week of June, we saw this message play on average 170,000 times per day with a peak of 195,000 plays in one day.

Beyond the media campaign and direct communications, we have been very active in the communities attending hundreds of partner conferences, field days, town visits, and business events to help inform the wider community of the upcoming closure and its relative impacts beyond just handsets.

Telstra will actively review what we have learned from the 3G closure and look to see how we can improve our approach for any future changes.

**Question 17: Can Telstra confirm that the First National call centres will not be affected by impending restructures, as referred to in evidence from Dr Lyndon Ormond-Parker.**

Telstra can confirm there will be no impacts to our First Nation call centres in the current restructure.

December 2023

# 2G and 3G Switch-Off

The logo for GSA (Global System for Mobile Communications Association) is displayed in white on a black rectangular background. It consists of the letters "GSA" in a bold, sans-serif font, followed by three curved lines that suggest signal waves or connectivity.

**GSA**



## Introduction

When they were first introduced to the market, 2G and 3G were highly important innovations, but as greater technological advances have emerged, their importance has waned, and usage of both technologies is now diminishing worldwide. As a result, many operators and governments are determining that the older 2G and 3G technologies as well as the spectrum allocated to them should be switched off for the faster and more efficient LTE and 5G networks. This transition is typically referred to as the 2G and 3G switch-off.

Drawing on information collected by the GSA about the switch-off of 2G and 3G around the world, this report focuses on the number of operators that have already shut down these networks, those in the process of doing so and those planning such a move. It also identifies countries and territories that have in progress, completed or planned switch-offs.

## Summary

- By the end of November 2023, GSA had identified 177 completed, planned or in progress 2G and 3G switch-offs in 59 countries and territories
- 76 operators in 43 countries and territories have either completed or planned 2G switch-offs
  - Of those, 24 operators in 15 countries and territories have completed 2G switch-offs
  - 52 operators in 33 countries and territories have planned 2G switch-offs
- 93 operators in 47 countries and territories have either completed, planned or are in progress with 3G switch-offs
  - Of those, 33 operators in 20 countries and territories have completed 3G switch-offs
  - 48 operators in 29 countries have planned 3G switch-offs
  - 12 operators in 11 countries and territories have 3G switch-offs in progress



Figure 1 shows the total count of operators that have completed, planned or are in progress with 2G and 3G switch-offs to end of November 2023; 56 operators have already completed, 101 have planned and 12 are in progress.

Figure 1. Count of operators that have completed, planned or are in progress with 2G and 3G network switch-offs

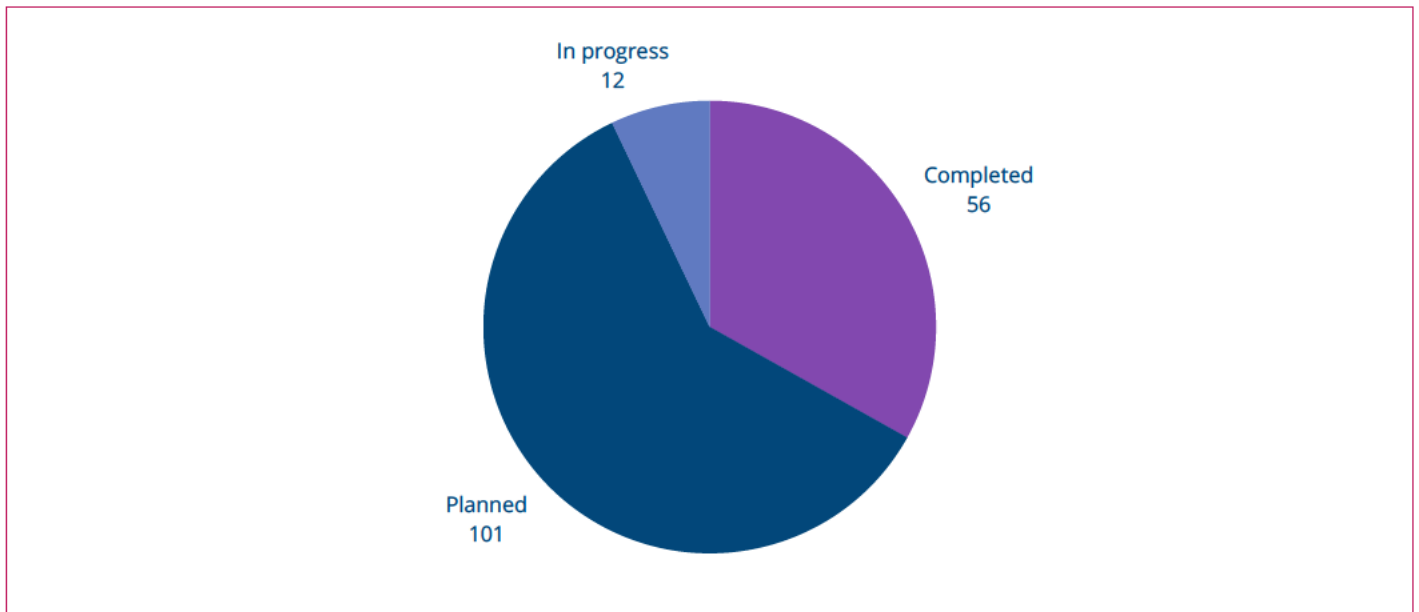


Figure 2 shows completed and planned switch-off dates for 2G and 3G networks identified by GSA from 2015 to 2026 onwards. The chart shows that the rate of switch-off for both technologies will continue to increase, with the shutdown of 3G in particular outpacing that of its predecessor. The most popular year for operators switching to 4G and 5G will be 2025, with 33 operators planning 2G switch-offs and 15 planning 3G switch-offs.

Figure 2. 2G and 3G network switch-offs by year

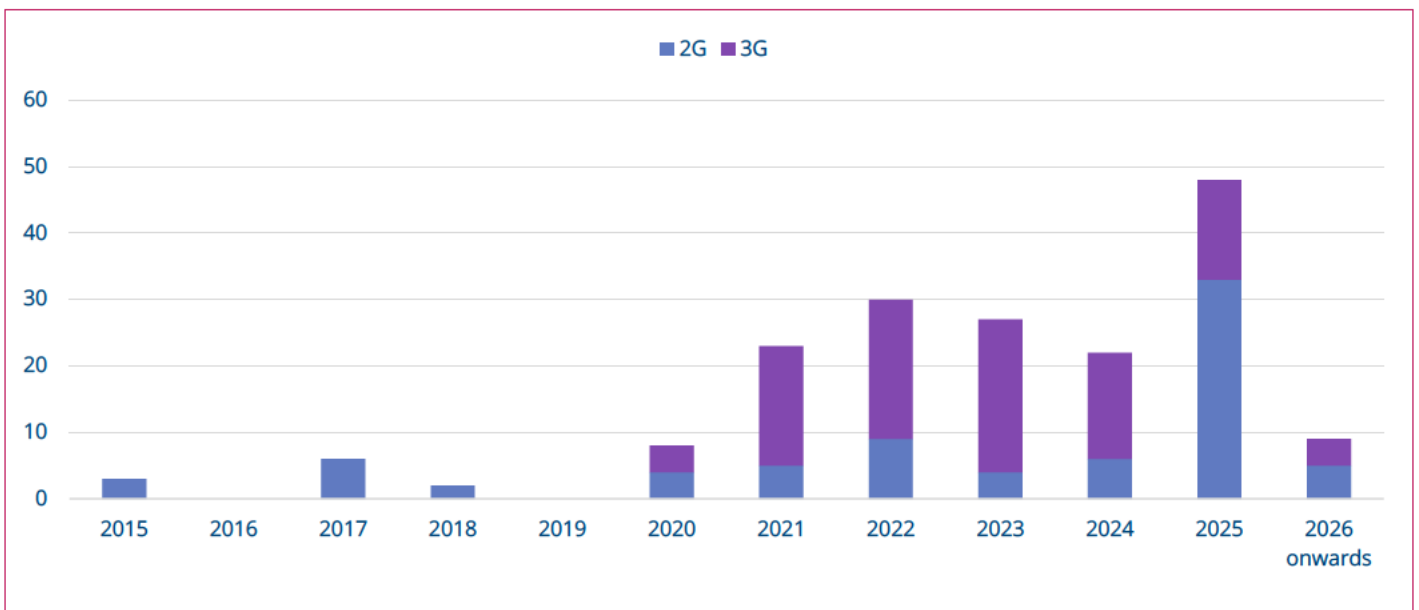
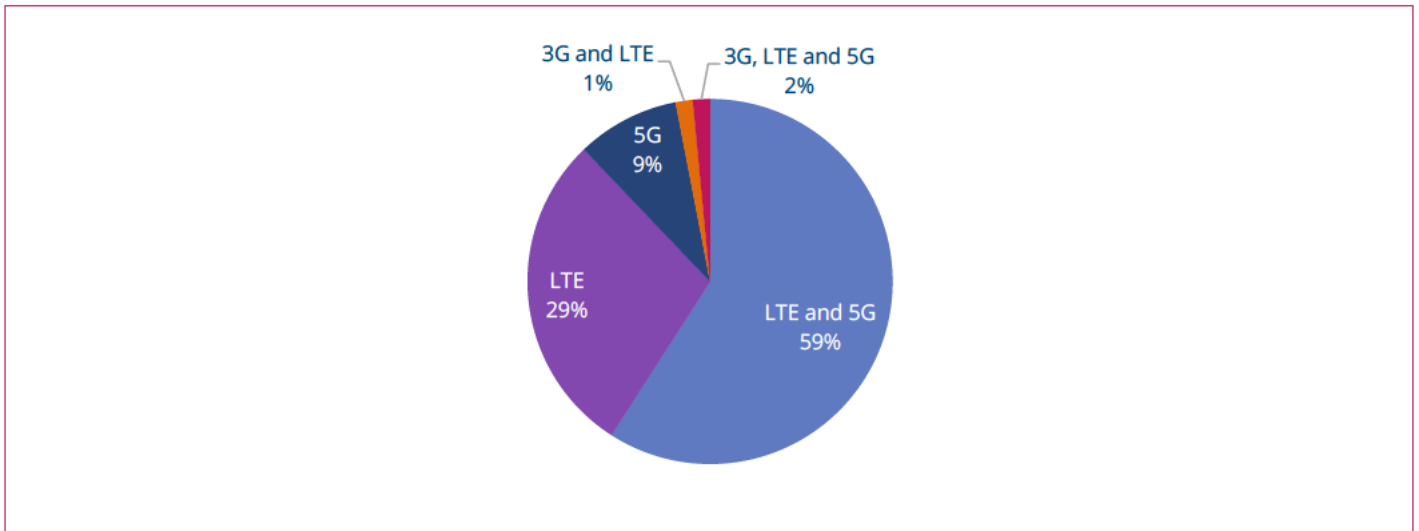




Figure 3 shows the network technologies that operators are upgrading to by proportion. According to our research, 59% of switch-offs stated their upgrade technology to be both 4G and 5G, highlighting the importance of these to mobile technology; 29% will be upgrading to LTE only; 9% will be moving to 5G; and 1% will be upgrading to 3G, 4G and 5G.

Figure 3. Share of network upgrade technologies



## Global Picture

Figure 4 shows the total completed, planned or in-progress switch-offs of 2G and 3G networks by sub-region, based on announcements from operators. From this we can derive that Europe has or will be undertaking the largest number of shutdowns, with 107 or 62% of the total. Asia will be responsible for 35 (20%), followed by North America 11 (6%), the Middle East and Africa with eight (5%), and Oceania with 10 (6%). Latin America and the Caribbean has just six (3%) 2G and 3G switch-offs.

Figure 4. Shutdown of 2G and 3G networks by sub-region

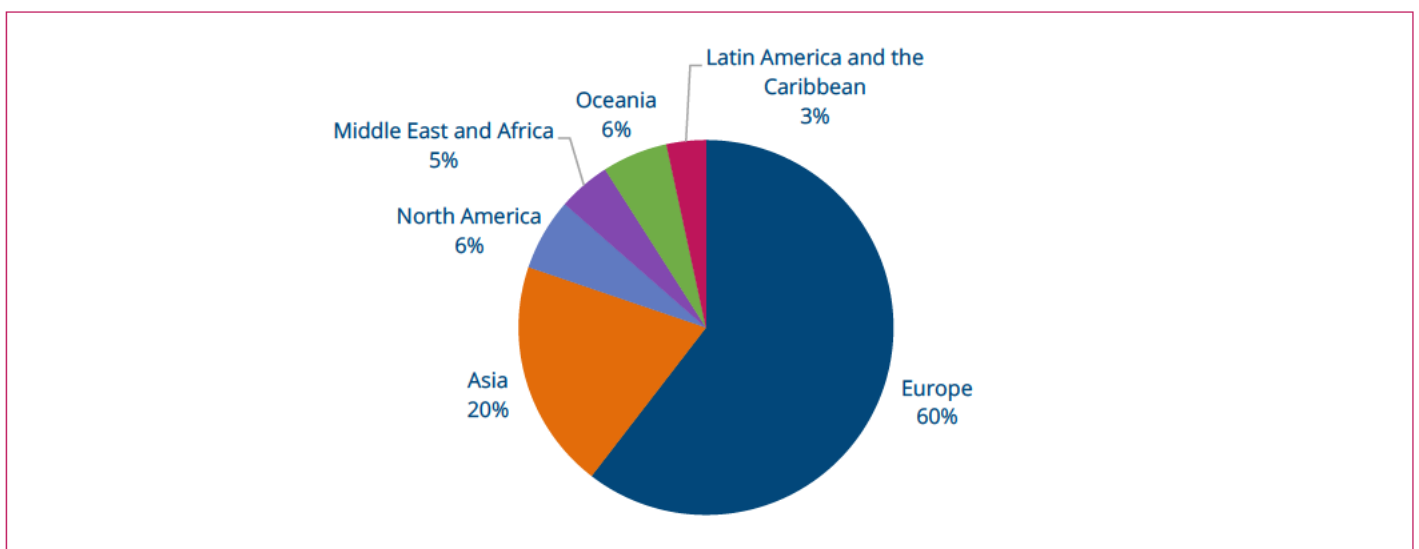




Figure 5 illustrates countries and territories with operators that have either completed or planned 2G switch-offs. It shows that 15 countries and territories have already shut down 2G, and a further 33 plan to do so. This gives a clear indication of the accelerating pace of switch-off for the technology around the world.

Figure 5. Countries and territories with operators that have completed or planned 2G switch-offs

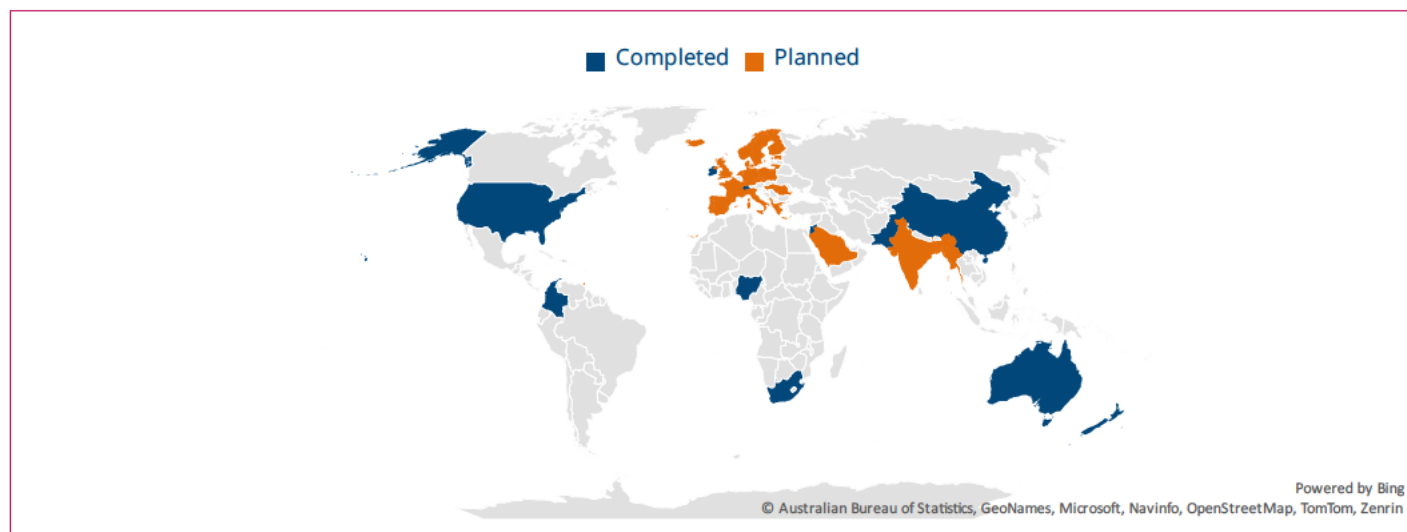
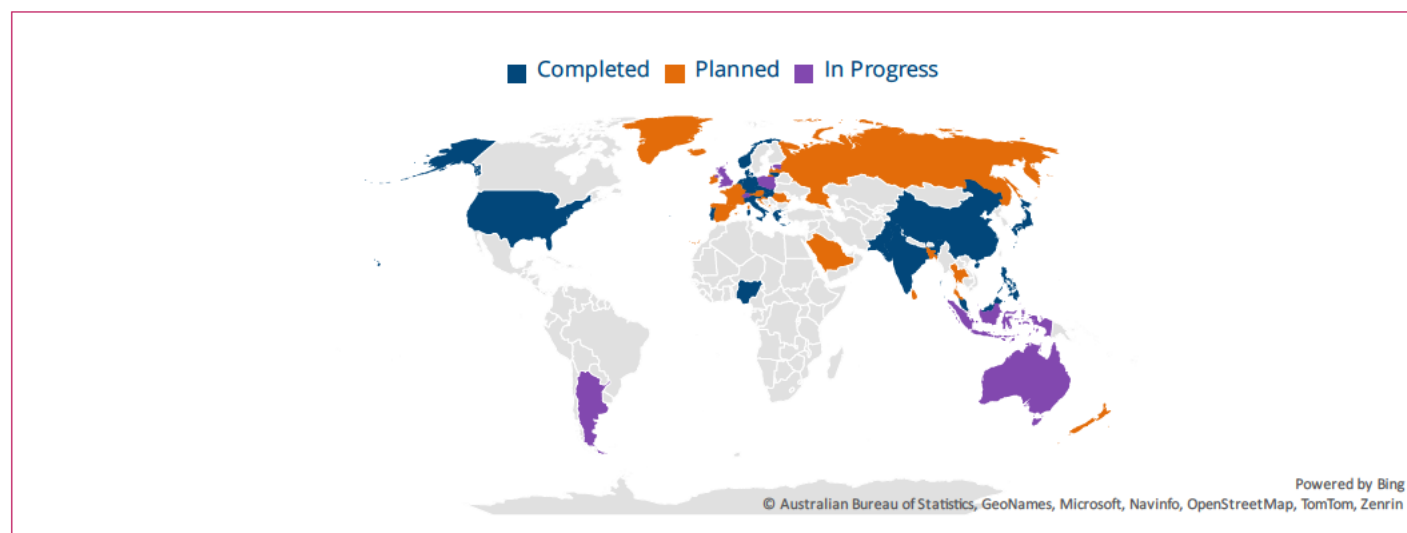


Figure 6 shows the countries and territories with operators that have completed, planned or are in progress with 3G network closure. A total of 20 countries and territories have already completed switch-off, 29 have plans in place and 11 are in progress.

Figure 6. Countries and territories with operators that have completed, planned or are in progress with 3G switch-offs



## Conclusion

The pace of 2G and 3G switch-off looks set to pick up over the coming years, with numerous operators from around the globe planning to close these networks. The rising number of 4G and 5G devices and adoption of newer technologies will see a slowing rate of adoption and use of 2G and 3G, furthering the need for operators and countries to free up spectrum for 4G and 5G upgrades. As a result, we can expect to see new operators announce plans to turn off their 2G and 3G technologies.

# ABOUT GSA

GSA is the voice of the global mobile ecosystem and has been representing mobile suppliers since 1998.

## GSA Research

Mobile industry research is the backbone of GSA activity and covers topics from devices, chipsets and technology, to networks, features and spectrum.

The GSA research team is constantly following market dynamics and activity to ensure the latest data is available to GSA users via the GSA website.

Data is updated monthly and quarterly and can be referenced by users who register for free on the GSA website.

## GSA GAMBoD Database

GSA reports are compiled from data stored in the GSA Analyser for Mobile Broadband Devices/Data (GAMBoD) database, which is a GSA Member and Associate benefit.

Discounted annual subscription are available to regulators, government agencies and licensed mobile operators.

Please email [info@gsacom.com](mailto:info@gsacom.com) for more information on accessing the GSA GAMBoD database.



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