TXO

Whitepaper

Network decommissioning

A hardware balancing act on the road to progress

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Introduction

Telecom equipment decommissioning – the process of retiring outdated infrastructure from the network – is both a challenge and an opportunity for operators. To improve network efficiency and meet modern technological standards, it's essential to systematically remove outdated hardware including switches, routers, cables, and other components. Such equipment is often no longer supported by OEMs and fails to comply with current standards meaning it unnecessarily consumes power and weakens the network's overall performance.

Operators are therefore undertaking decommissioning as part of a wider strategy to upgrade networks, enhance power efficiency, improve sustainability and safety, reduce OPEX, and enable investment in new technology and innovations.

However, beyond just updating the network by powering down and removing old equipment, there is huge potential to unlock additional benefits along the way. Operators are increasingly utilising the circular economy as part of their decommissioning efforts, recycling, reselling and reusing old components to boost the profitability, efficiency and sustainability of operations.

To see how far along the industry is on this journey, **TXO spoke to over 50 operators across the globe** to get their views on decommissioning and the benefits this activity provides them as they strive for growth, carbon reduction and innovation.

A marathon, not a sprint

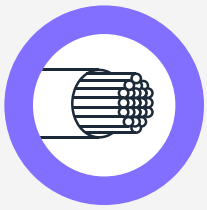
This continuous effort to decommission equipment is essential for nearly all operators with a legacy network.

According to our research, **four out of five (83%) communication providers** are currently either in the process of decommissioning sections of their network or planning to do so in the near future.

Industry insights

TXO | BT Group

For example, BT disclosed last year that it will have:



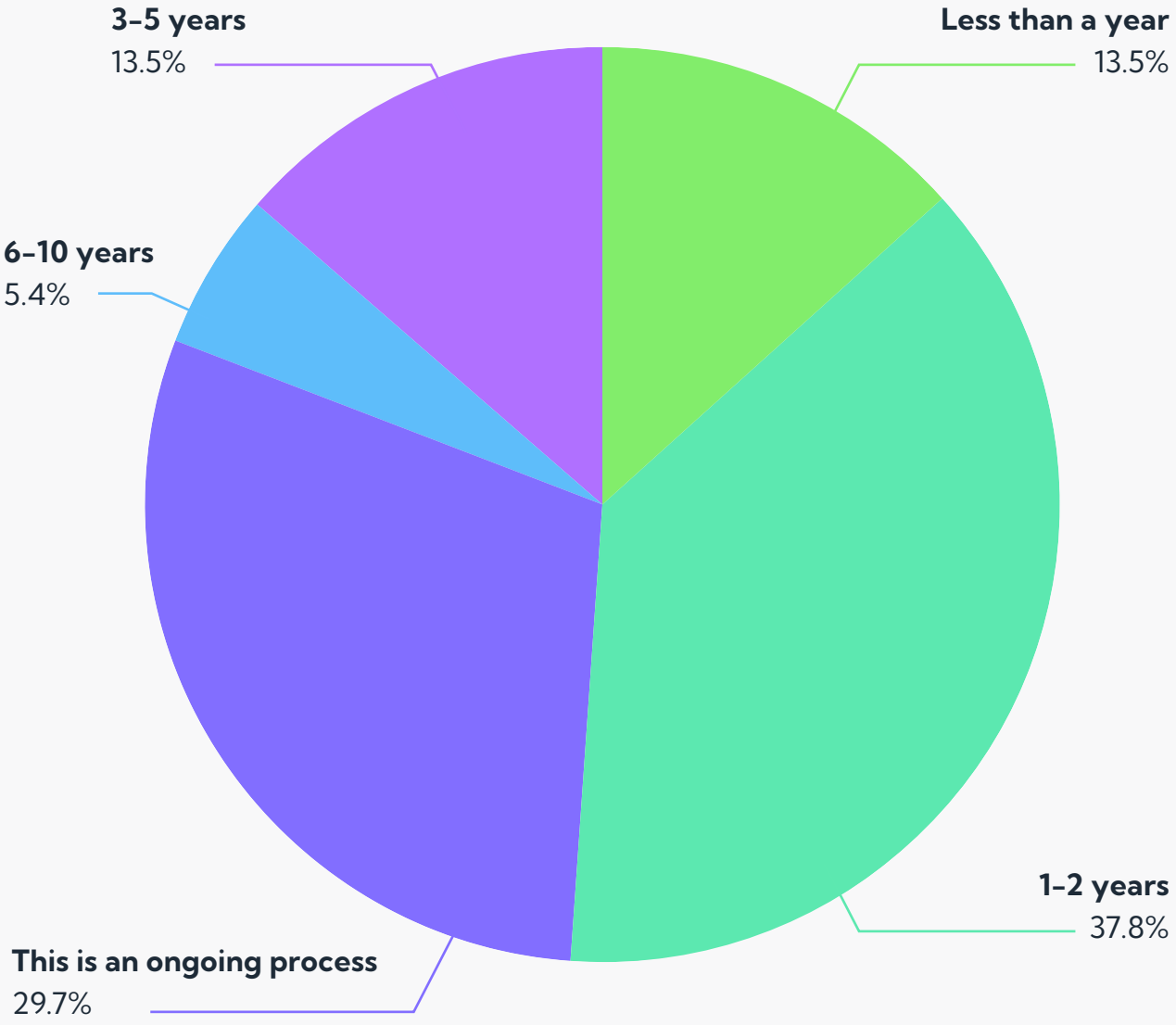
reclaimed over **200 tonnes** of copper cable
(equivalent to the weight of over 140 Ford Focus cars!)

reclaimed over **2,000 tonnes** of lead batteries from its legacy network

This activity is part of a long-term strategy to reach net zero emissions by the end of March 2031. As BT said on its blog, "decommissioning equipment on this scale is a huge task", and this was for just one area of its network.

Decommissioning is an ongoing process, with just **over half of the operators we spoke to expecting projects to last up to two years.** On the other hand, the rest anticipate a minimum duration of three years, with nearly 30% viewing it as a continuous process – with no real finish line.

When do you expect to be finished with your company's network decommissioning programme?



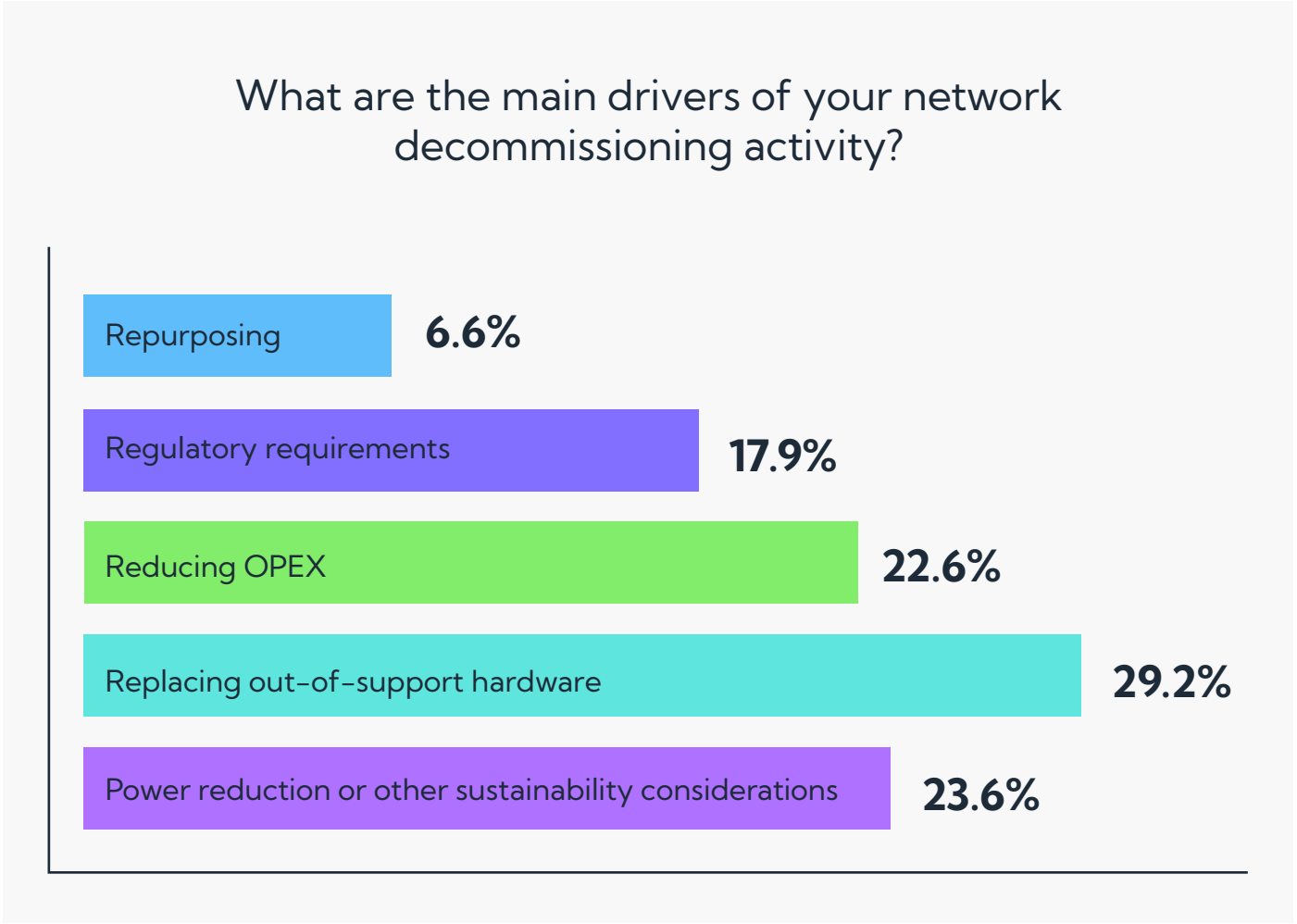
Decommissioning does not come without challenges, however. Removing hardware from live networks needs to be safe, and limit operational and financial impact as much as possible.

When asked about potential barriers to decommissioning activity, there were two clear concerns for operators: **the cost of upgrading technology (44%) and a shortage of skills and labour to audit and replace old assets (29%).**

The motivations

There are several motivations for operators to decommission parts of the network. The top three drivers according to our research are:

1. **29%** Replacing out-of-support hardware
2. **24%** Power reduction or sustainability considerations
3. **23%** Reducing OPEX (Operational Expenditure)



Lack of OEM support

Nearly one-third (29%) of decommissioning initiatives stem from the imperative to replace hardware that has reached the end of support from original equipment manufacturers (OEMs).

15% of operators are expecting more than half of their hardware to be obsolete within the next two years.

On average, the **amount of hardware going obsolete in the next two years is between 20% - 30%** - a huge amount of equipment.

OEMs often only provide support for products for two years, and then after that, if there's a maintenance issue with a product, they are forced to decommission it. Operators will therefore try to get ahead of this problem by refreshing their equipment every 2-5 years.

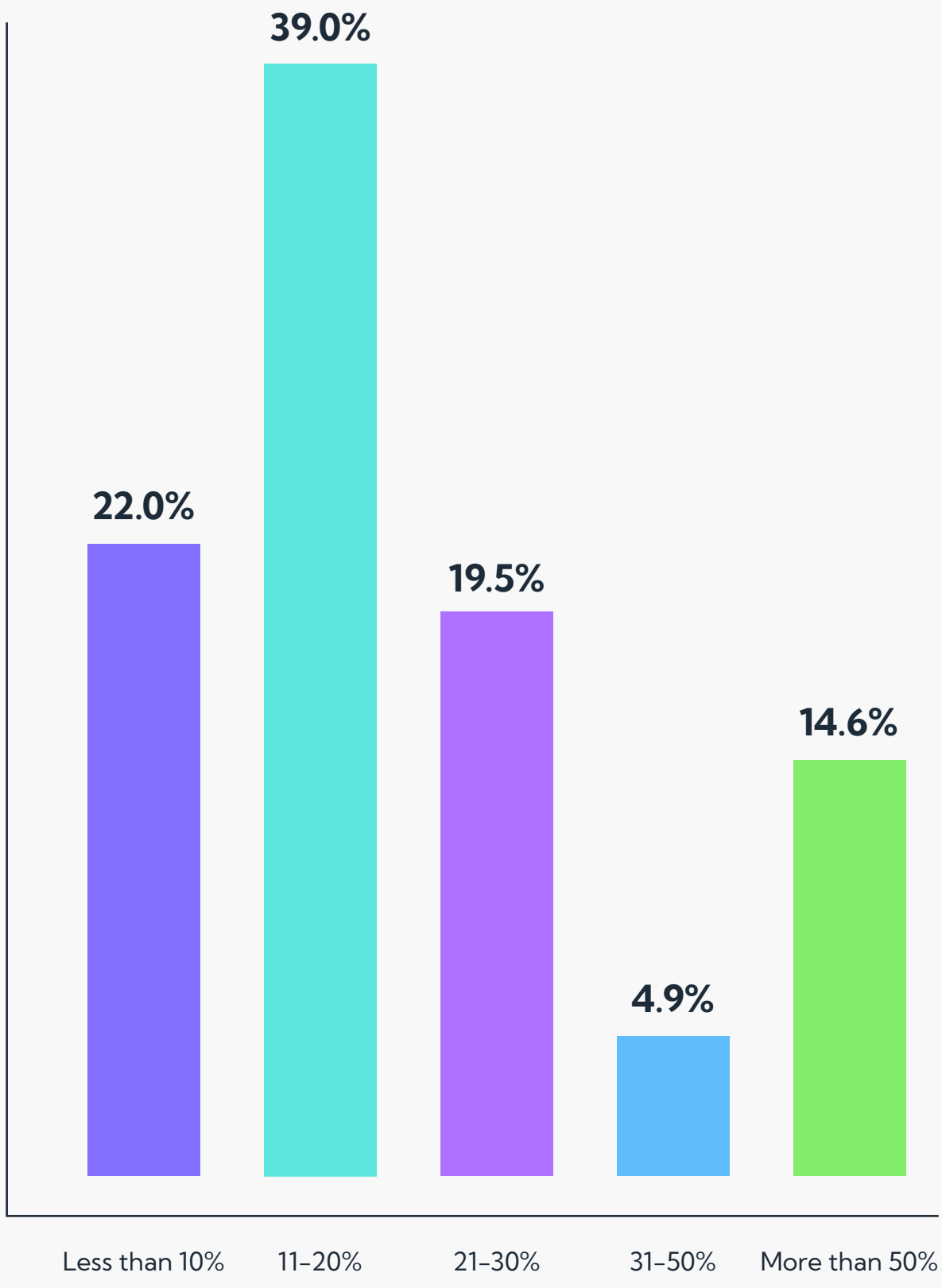
The lack of long-term support for equipment is driven by the OEM's commercial agenda of constantly wanting to sell new equipment. However, operators need to change their mindsets of constantly buying new. Although warranties and support terms rarely extend beyond five years, a lot of **modern telecom equipment is designed to work for 1,000 years.**

So, decommissioning equipment on a 2-5-year cycle is a huge waste of money and bad for the environment. Operators need to find support that can help them extend the life of their network – which is a more carbon-positive action than decommissioning and purchasing new OEM equipment. Companies like TXO can provide ongoing maintenance for products beyond the support terms offered by an OEM.

Kieran Crawford,
Group Sales Director, TXO

"Network hardware is evolving fast, but a skill and labour gap is making it difficult for operators to keep up. It's not the brand-new hardware where this gap is a problem but older equipment that needs to be safely removed or maintained. It is more difficult to find specialists with knowledge of older hardware, and the mass redundancies we've seen in recent years have compounded the problem. This increasingly means operators need to look outside their organisations to fix the problem by bringing in specialist knowledge and capacity to solve the challenge."

What end proportion of your network hardware will reach end-of-life/end-of-support in the next two years?



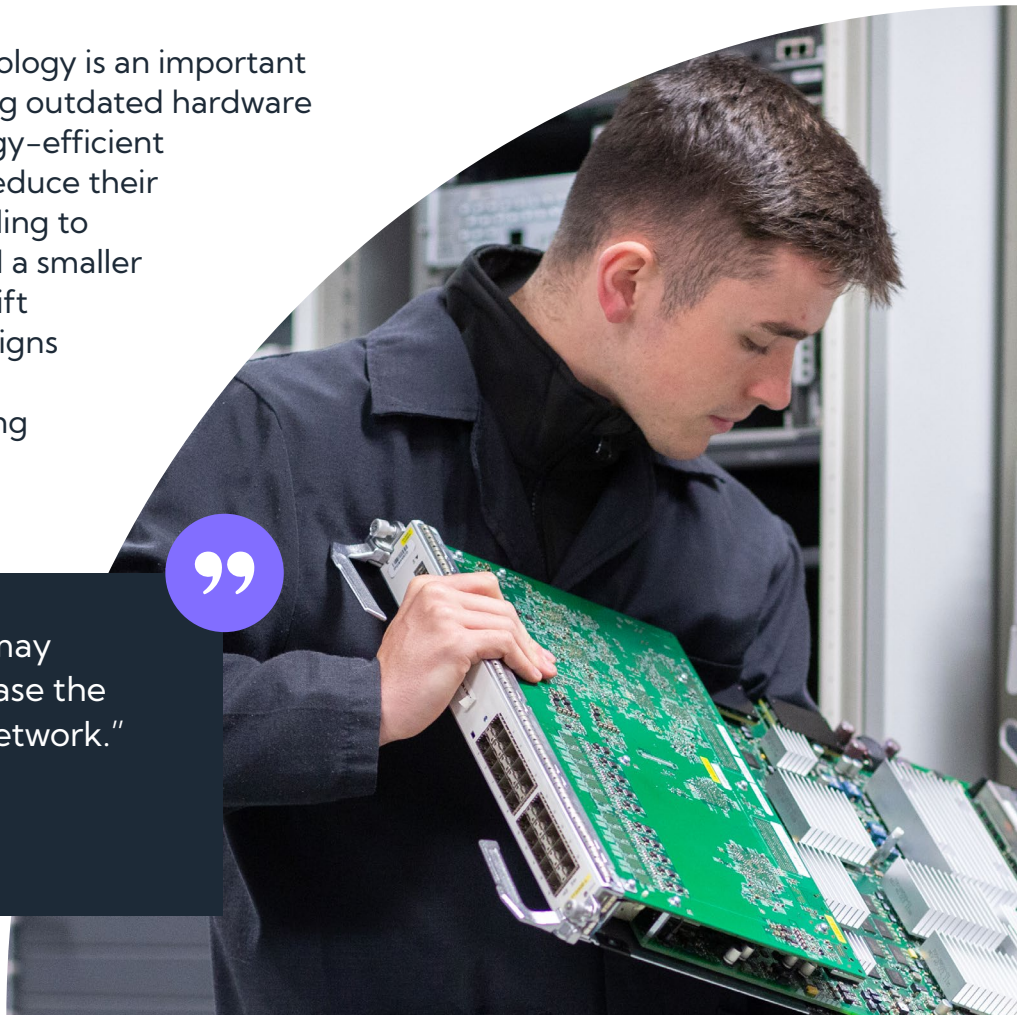
Power reduction

The majority (61%) of operators TXO spoke to think they can achieve a **5-30% decrease in power through their decommissioning activity.** Moreover, 7% think they can achieve more than a 50% power decrease from these activities.

Most major operator groups are setting ambitious targets for reaching carbon net zero.

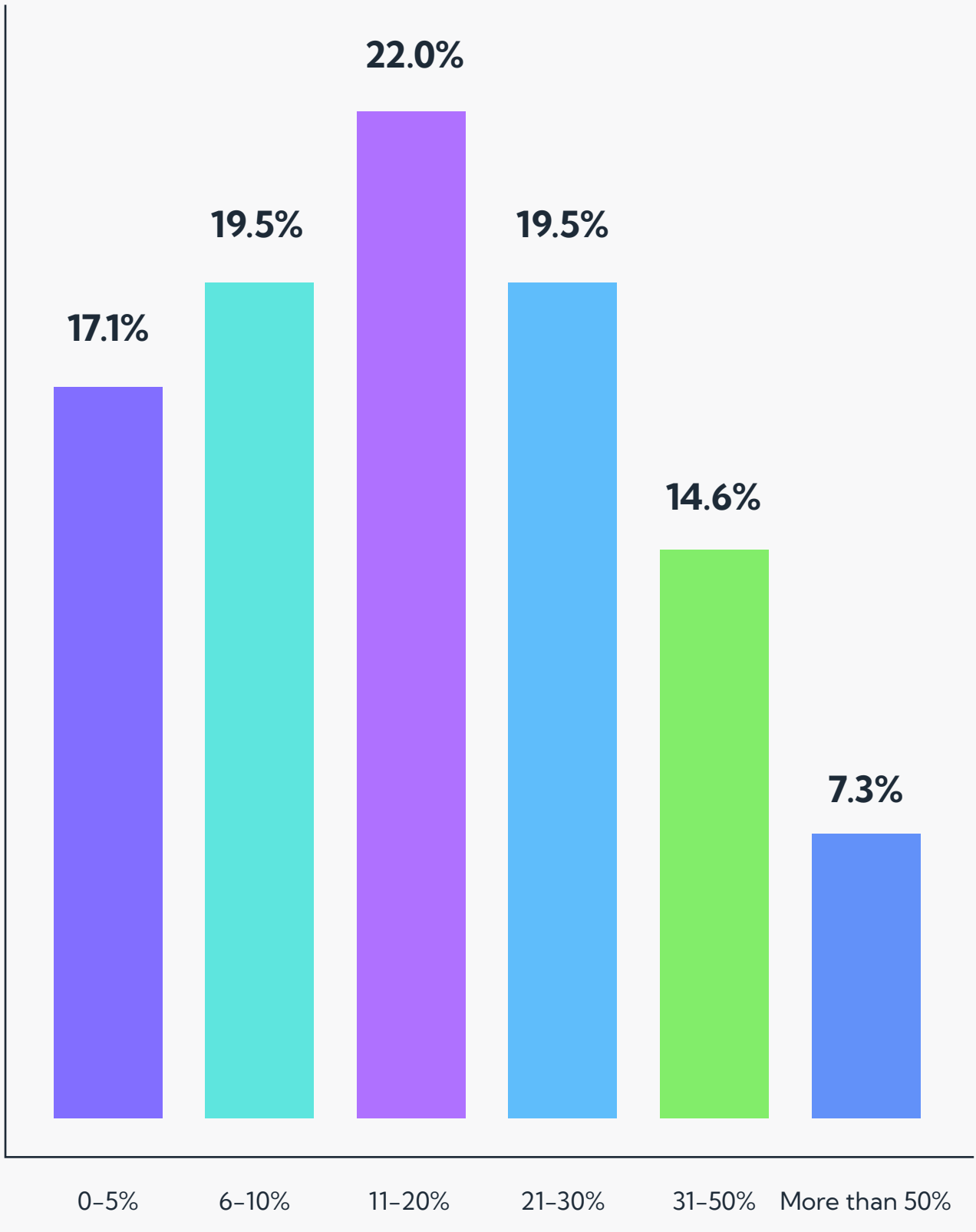
For example, a recent report from the GSMA showed that 62 operators, representing 61% of the industry by revenue have committed to targets intended to rapidly reduce emissions by 2030.

Removing power-hungry technology is an important part of that process. By removing outdated hardware and replacing it with more energy-efficient alternatives, organisations can reduce their overall power consumption, leading to decreased carbon emissions and a smaller environmental footprint. This shift towards greener technologies aligns with broader sustainability goals and shows a commitment to using resources more responsibly.



> "With this (power) saving we may have the opportunity to increase the performance of the current network."
>
> **International Operator**

How much power reduction do you expect to achieve as a result of replacing or removing legacy equipment?



Cost reduction

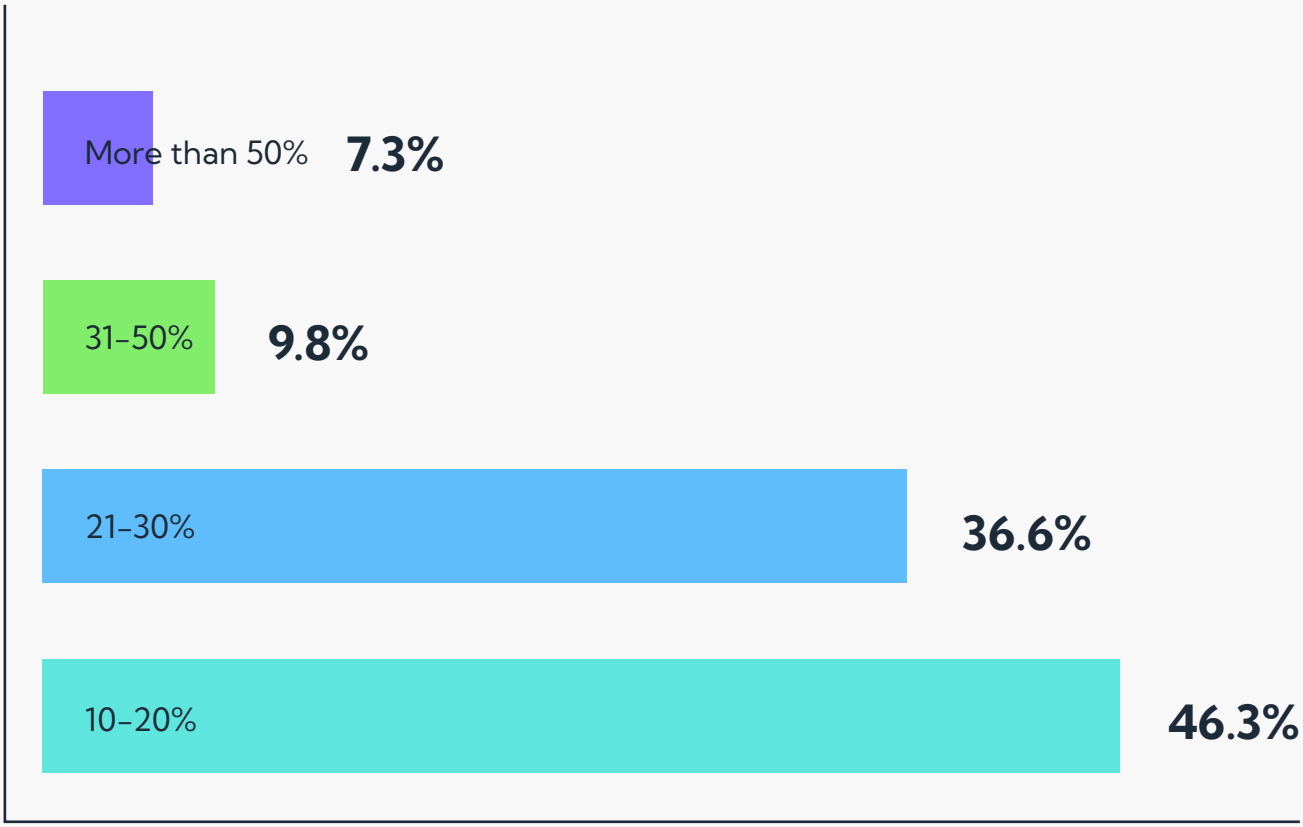
Our findings show that by updating old equipment, companies can significantly cut costs, with many expecting to save between 10% to 30% on operating expenses. Four out of five (82%) operators believe they'll see this level of cost reduction, showing the financial upside of modernising setups and making operations more efficient.

While replacing hardware piece-by-piece is one method operators use to reduce OPEX, many are also achieving this by minimising the amount of hardware throughout their networks. This 'network rationalisation' is made possible by technological advancement, meaning less equipment is required and in some cases, operators can even reduce their property (real-estate?) footprint at the same time. One example is the switch from copper to fibre networks allowing operators to massively reduce their quantity of local telephone exchanges. For example, BT Group is reducing this number from around 5,600 today to just 1,000 by around 2030.

Some operators are doing this in even more novel ways. For example, in Canada, an operator TXO works with has coined the term 'shrink and sink'. It's the concept of shrinking their network footprint inside a building by decommissioning equipment. The equipment can then be 'sunk' into the basement or the ground floor of the building, freeing up space in commercial premises for lucrative activities.

This can provide huge operational cost reduction, with commercial property often being a massive outgoing for operators.

How much operational cost reduction do you expect to achieve as a result of replacing legacy equipment?



John Teasdale, Group Chief Networks Officer, TXO

"Across the industry, we're witnessing a substantial shift towards network rationalisation, as operators restructure and consolidate their footprint to improve efficiency and operating costs. Optimising infrastructure, by reducing both the amount and efficiency of hardware, will mean operators could see significant power savings. I'd even suggest operators are being tentative with their estimations of how much this activity will save them in power consumption and OPEX costs. As every kilowatt of power saved on equipment translates into an additional kilowatt saved in cooling, a 50% reduction in power consumption across retained sites is very achievable."

Decommissioning & the circular economy

An increasing number of operators are beginning to leverage the circular economy as part of their decommissioning programmes. Using more sustainable practices such as reusing, reselling or recycling old hardware can reduce both the environmental and financial costs of updating technology.

All this means the outlook for the cost of decommissioning programmes is fairly positive. **Three out of five operators we spoke to expect their decommissioning program to cost less than £1 million**, with two out of these three anticipating no net expenditure (breaking even or incurring no cost). The reduced financial impact comes from the savings of either updating old equipment or the gains from selling or recycling it.

Reuse

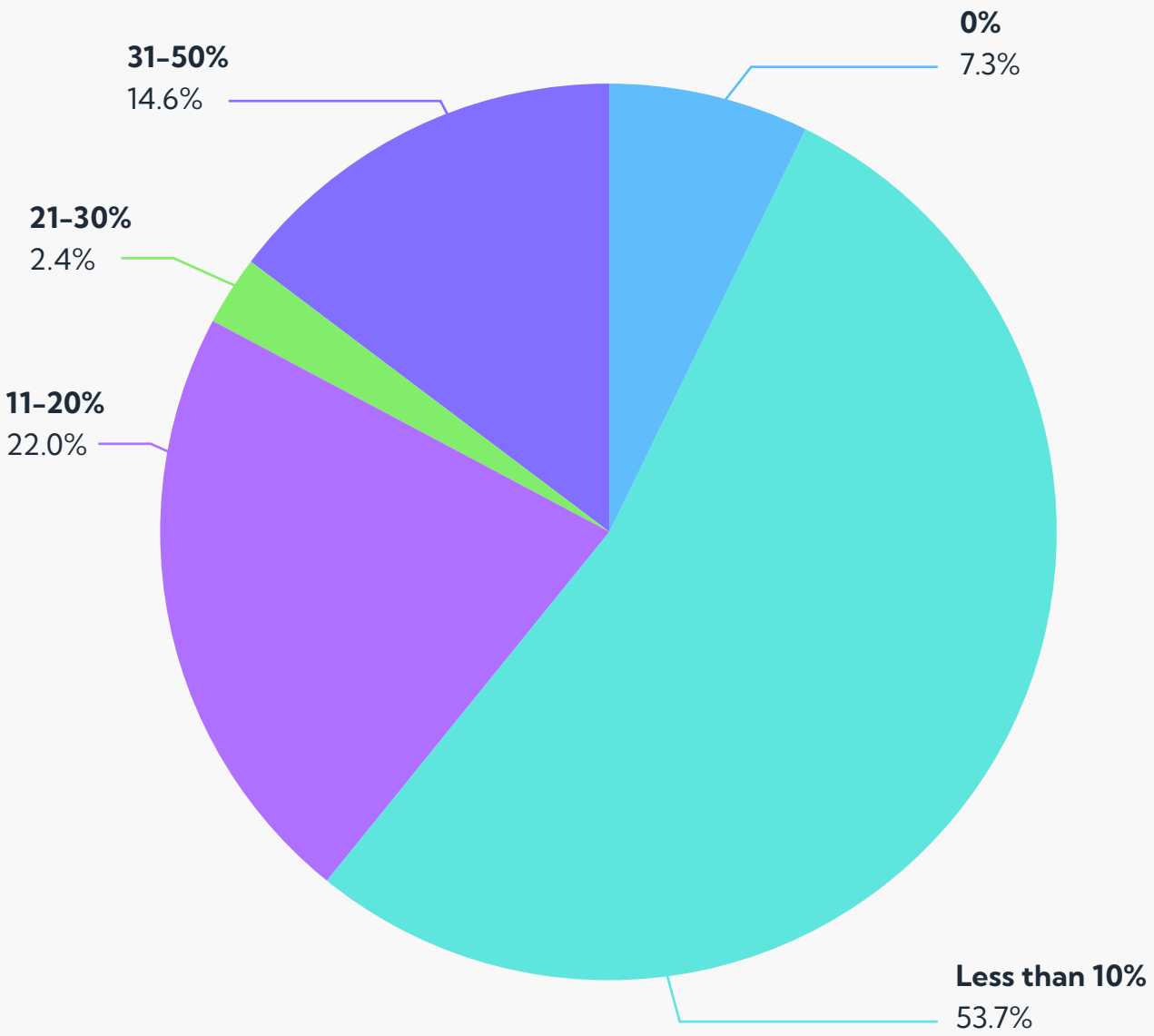
More than half of the respondents (60%) reuse less than 10% of their decommissioned equipment elsewhere in the network.

Even though outdated or inefficient hardware must be removed, there's still potential to repair or refurbish these items so they can be reused in the network. While increasing the lifespan of equipment in this way has natural economic and environmental benefits, it requires expertise to refit, test, and reliably redeploy these recovered assets. This could be a factor in why reusing hardware is relatively uncommon amongst the operators TXO canvassed.

"We reuse decommissioned hardware as spare part supply in areas that are still waiting for decommissioning to begin, this is often in particularly remote areas."

International Operator

How much of your decommissioned network hardware is being reused elsewhere in your network?



Operators are however reusing equipment from outside of their networks, with **63% purchasing second-user equipment to help maintain networks during the decommissioning process.** This shows both a need and an appetite for sustainable second-hand hardware to support the decommissioning process.

David Evans, Head of Asset Recovery & Services, TXO

"It's great to see second-user equipment becoming more valued across the industry. Over time, we can expect this number to increase as more operators begin not just feeding into the circular economy, but also consuming from it. With so much viable equipment left unsupported by OEMs, a healthy second-user market provides a much-needed insurance policy for operators. It means equipment is at hand to support an end-of-life network or during the decommissioning process."

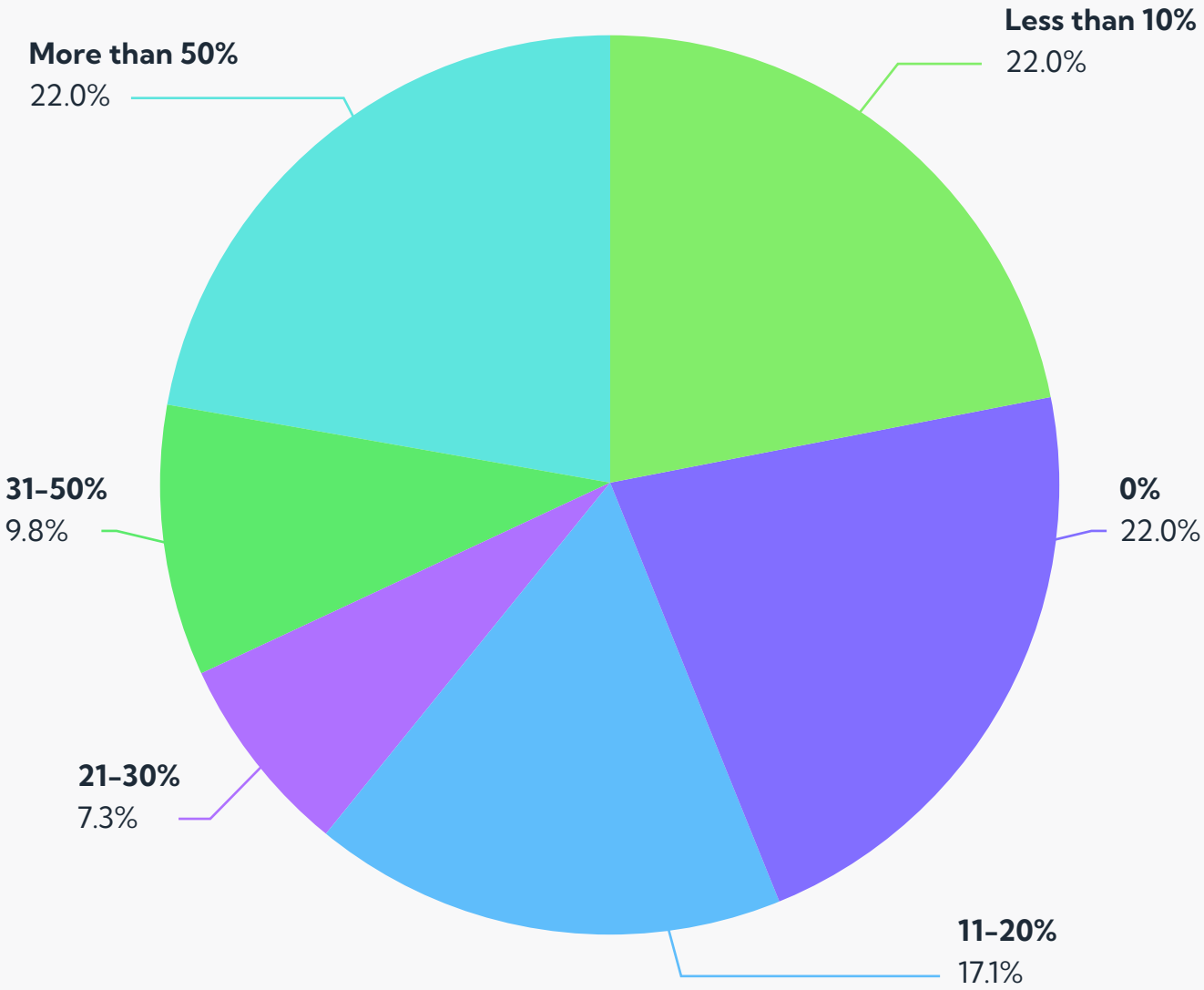
Resell

As telecom networks evolve at different rates around the world, there is often a market to buy and sell older equipment. By reselling hardware, companies can recover some of their expenses in an eco-friendly way while also meeting the demand for more cost-effective telecom equipment in developing markets.

If we again look to BT as an example, the operator claims it has yielded over £4M through the recycling and reselling of decommissioned equipment. In other cases, TXO has seen operators use resale to continuously fund further decommissioning activity. One Scandinavian operator was able to use resale decommissioned equipment to fund the purchase of other equipment it needed through the circular economy while still turning a net profit for the sale of equipment through the circular economy.

However, the extent to which companies resell their old hardware differs greatly. While 78% of operators resell some of their decommissioned equipment, 22% don't use this strategy at all. Interestingly, an equal portion (22%) are selling off more than half of all decommissioned gear – showing a huge variance in resale across the industry.

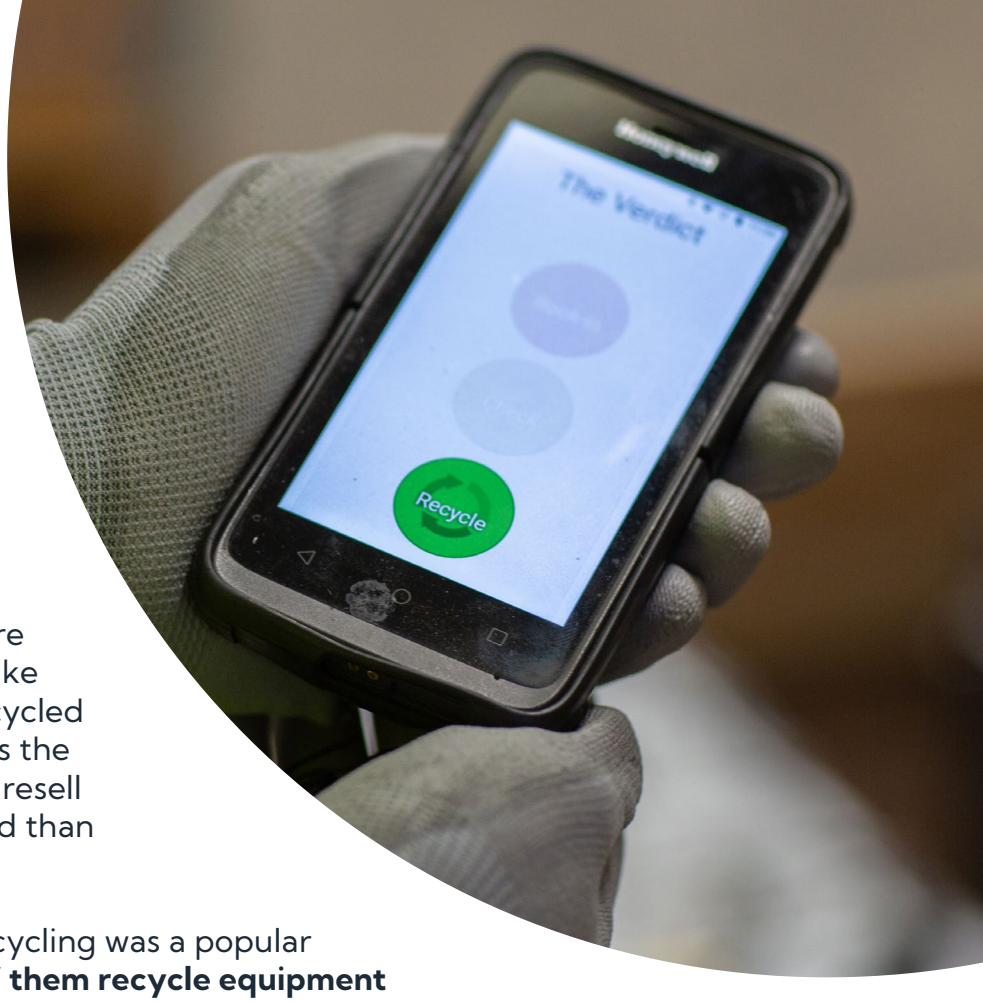
What proportion of your decommissioned network hardware are you reselling?



"We have not started reselling yet, but we are sitting on a huge amount of hardware that is currently unused."

International Operator

Recycle



A typical decommissioning process will often look to resell hardware first, but if there is no market for the equipment or components, then recycling can be a good option. This is particularly true for older hardware as it can contain precious metals like gold and copper which can be recycled and sold. Conveniently, this means the older equipment that is harder to resell is often worth more when recycled than modern hardware.

For the operators we spoke to, recycling was a popular strategy. **Four out of five (80%) of them recycle equipment to some extent, with one in four of these (25% recycling more than half of all decommissioned equipment. On the flip side, nearly one out of five operators (19%) don't recycle equipment whatsoever.**

What types of hardware are operators looking to recycle?

"Gear from multiple OEMs across multiple technologies"

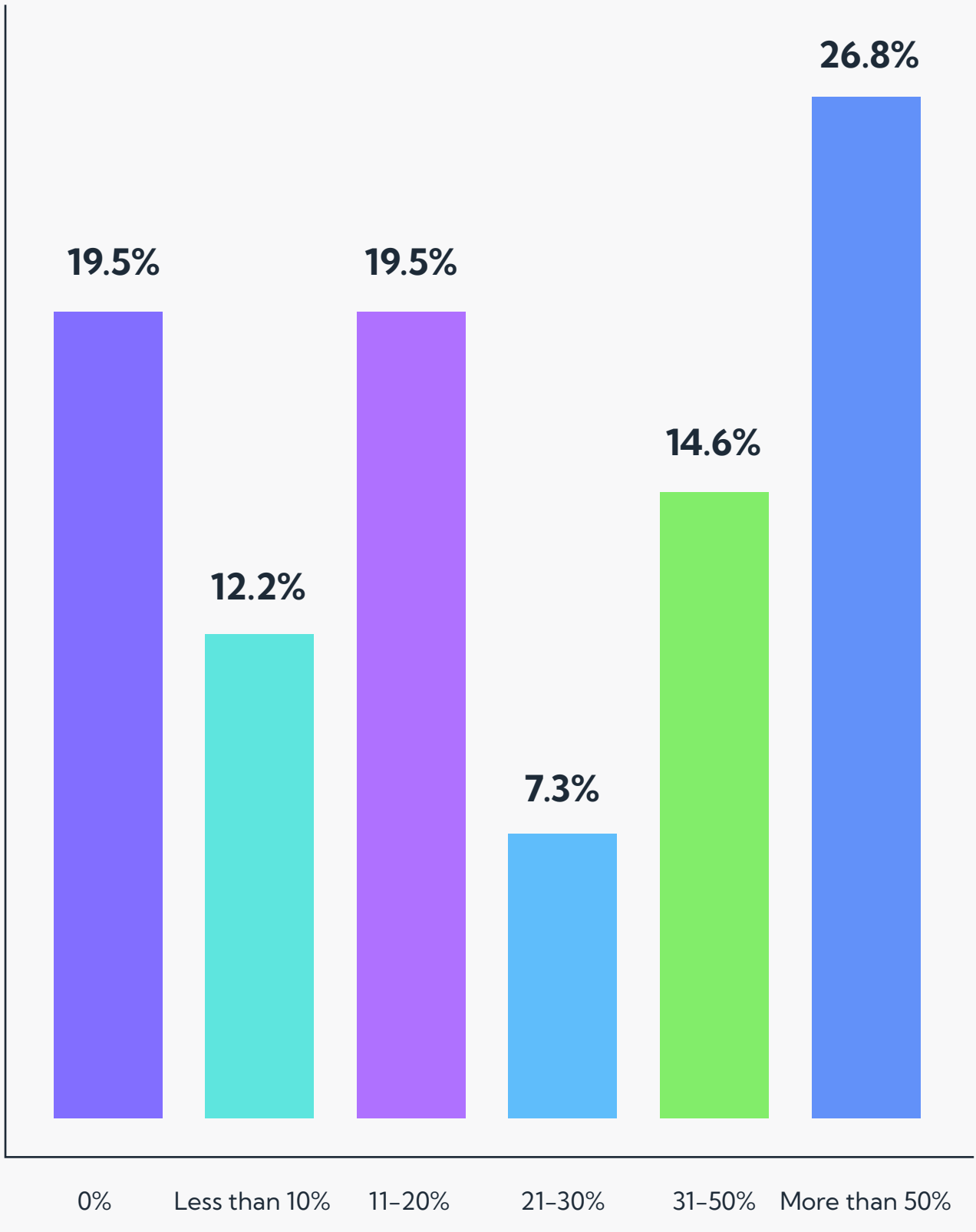
"Equipment that is about to reach the end of life with support"

"Network cards are being recycled for precious metals"

"Hardware we look to recycle are pieces with low usage or lower repair service cost"

"Old fixed-line equipment"

What proportion of your decommissioned network hardware are you recycling?



How TXO is driving circular decommissioning programmes all over the world

In complicated and large-scale network decommissioning projects operators face a dual challenge - upgrading their network infrastructure while minimising financial and environmental impact. This is where TXO, now strengthened by the acquisitions of Lynx and Teqport, is supporting operators around the world including BT, Virgin Media, AT&T Colt and countless others to meet these objectives via the circular economy

1

Expanded decommissioning & deinstallation services

TXO approaches decommissioning with a view to extending the life of as much equipment as possible, offering an alternative approach to purchasing new, expensive and power-hungry OEM equipment. The process begins with an assessment of existing infrastructure, identifying which components are candidates for reuse, resale, or recycling. This step ensures that every piece of decommissioned hardware is evaluated for its next phase of life, whether within the same network, a different market, or as a source of recycled materials.

In addition to decommissioning, TXO specializes in the de-installation of outdated equipment and infrastructure, such as power cabling, power equipment, fibers, and cables. Our teams are skilled in operating within live environments, taking the necessary precautions to ensure that other services in the vicinity are not disturbed during the removal process. This careful management extends to the secure removal and destruction of sensitive data from telecoms and IT equipment, including hard disks and memory cards, to maintain data security and privacy.

For hardware that is deemed obsolete or beyond economic repair, TXO offers a responsible recycling pathway. This service has been strengthened and expanded with the addition of Teqport into the TXO family, ensuring that all recoverable materials are extracted and reintroduced into the manufacturing cycle. This practice not only reduces the demand for brand-new materials but also minimises the environmental footprint associated with hardware disposal.

2

Installation & commissioning

In most cases, decommissioning and removal of hardware need to be followed by installation of the equipment. TXO can also help operators in this, particularly with the acquisition of Lynx, known for its expertise in Installation and Commissioning (I&C). With this expertise, TXO supports operators throughout the entire lifecycle of telecom and IT equipment including essential tasks such as labelling, power connections, stability testing, and fault finding. This integration of services supports operators in smoothly upgrading their systems with minimal disruption. minimises the environmental footprint associated with hardware disposal.

3

Migrations & dilapidations

With the acquisition of Lynx, TXO has strengthened its ability to manage the full lifecycle of network equipment. During a planned outage as part of the decommissioning process, TXO can support operators to migrate services from existing legacy infrastructure to new equipment. Lynx even supports the decommissioning process beyond just hardware through dilapidation services to repair or 'make good' on the site property itself. Through this integrated approach, TXO provides operators with the resources needed to upgrade their systems efficiently and with minimal disruption.

4

Global resale & reuse network

TXO's global second-user equipment network can also support operators resell decommissioned equipment. TXO has warehouses across the globe, in the UK, Sweden, Germany, France, Australia and the US. This helps TXO connect decommissioned assets with markets and operators that can derive value from them, facilitating a more sustainable transition of resources, and extending the lifecycle of telecom equipment around the world. On a global scale, this helps reduce the electronic waste produced by the telecom industry while simultaneously providing a more economical option for operators in developing regions, promoting global connectivity and easier access to technology.

5

Overcoming technical & logistical challenges

Crucially, TXO assists operators in overcoming the technical and logistical hurdles associated with refurbishing and redeploying assets. By providing expertise in the testing and refurbishment of decommissioned equipment, TXO enables operators to confidently integrate repurposed hardware into their networks. This service addresses a significant barrier for operators – the lack of in-house skills for equipment recovery – and opens up new possibilities for cost reduction and operational efficiency.

As the telecoms industry continues to develop around the world, the need to continuously decommission hardware will remain. To limit the environmental and financial impact of this progress, operators must look to leverage the circular economy to extend the lifecycle of network equipment around the world and work towards a more sustainable and efficient telecom industry.

By partnering with circular economy specialists like TXO, operators have a much-needed alternative to OEMs and the crippling effect of 2-5-year hardware support plans. Instead, the circular economy can be an insurance policy for network maintenance and decommissioning. Crucially, this support is self-sourced and self-funded.

About TXO

TXO is the world's leading provider of critical telecom network hardware and asset management services.

TXO is recognised as the global leader in telecom network decommissioning & recovery services. Our expertise empowers telecommunications companies globally to embrace a circular economy model. This not only yields substantial environmental advantages for our customers, but it also unlocks remarkable cost efficiencies and innovation too.

Whether you're in the midst of an upgrade, adapting to changes in your corporate infrastructure (such as mergers, acquisitions, relocations or downsizing), or simply need to retire specific equipment such as decommissioning your copper Public Switch Telephone Network (PSTN), our team is ready to assist you.

With close to one million parts, our huge stock of multi-vendor networking equipment sets us apart from the rest. Through a combination of our products and services, we can enhance your productivity and secure the future of your telecom operation.

Additionally, we design solutions specifically tailored to your business and using our extensive product knowledge, help with the maintenance and progression of your telecom network. We also provide asset recovery solutions for our clients across a wide variety of disciplines, such as telecoms, data centres, utilities, oil, gas & renewable energy and civil, government & critical comms. Here our goal is to support your company to achieve its sustainability targets while maintaining your high standards. We're certified with ISO 9001, ISO 14001, ISO 45001, ISO 27001 and TL 9000 and we are a licensed AATF adhering to WEEE-compliant processes. In addition, we hold certification from EcoVadis in recognition of our exceptional levels of corporate social responsibility and we are keen to share this with all of our clients. Our vision is to be the world's local partner for sustainable communication networks. We view this as our contribution to the circular economy and a greener planet.

To find out more about TXO and how you can join the circular economy, please email us at hello@txo.com.