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BEREC summary report of the BEREC external workshop on migration and copper switch-off in light of the DNA proposal

2 June 2026

Contents

1. Introduction

On 17 March 2026, the Body of European Regulators for Electronic Communications (BEREC) hosted a Workshop on migration and copper switch-off in light of the European Commission (EC) proposal for a Digital Networks Act (DNA).

Migration and copper switch-off have been a strong focus for BEREC in recent years. Indeed, BEREC worked on various aspects of policy and implementation of migration to fibre and the switch-off of legacy copper networks over the last years. Most recently, in June 2025, BEREC published a BEREC Progress Report on managing copper network switch-off[1]. In 2023 BEREC held a workshop with a focus on the specific needs of end-users in the context of migration and switch-off and published a related summary report[2].

Continuing the work on the topic was one of the most mentioned demands of stakeholders, operators in particular, for the BEREC Work Programme 2026.

The importance of the topic has been further elevated through the EC's DNA proposal, which was published on 21 January 2026[3]. The chapter on migration and copper switch-off (Part 5; Articles 53 – 61) foresees major changes compared to the European Electronic Communications Code (EECC)[4] with respect to the involvement of public bodies, the tools to be used by public authorities and the ambition to speed up the processes.

On this backdrop, the BEREC workshop brought together distinguished experts from academia, telecoms industry, NRAs, the EC to discuss the topic.

This report provides a factual summary of the presentations given at the workshop. The views expressed in the summary below were provided by the speakers and should not be construed as views of BEREC.

2. Workshop summary report

At the workshop, 4 distinguished speakers from Academia, 1 from the EC, and 4 from the telecom operators shared their perspectives on the migration and copper switch-off process and the EC proposal for a DNA.

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[1] BoR (25) 66, BEREC Progress Report on managing copper network switch-off, 05.06.2025, https://www.berec.europa.eu/en/all-documents/berec/reports/berec-progress-report-on-managing-copper-network-switch-off

[2] BoR (23) 205, Summary report on the outcome of a BEREC internal workshop on the migration to very high capacity networks and copper switch-off with a focus on the needs of the end-users, 07.12.2023, https://www.berec.europa.eu/en/document-categories/berec/reports/summary-report-on-the-outcome-of-a-berec-internal-workshop-on-the-migration-to-very-high-capacity-networks-and-copper-switch-off-with-a-focus-on-the-needs-of-the-end-users

[3] Proposal for a Regulation for the Digital Networks Act (DNA), 21.01.2026, Proposal for a Regulation for the Digital Networks Act (DNA) | Shaping Europe's digital future

[4] Directive 2018/1972 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 establishing the European Electronic Communications Code, https://eur-lex.europa.eu/eli/dir/2018/1972/oj/eng

More information on the speakers, the agenda, and the presentations is available on BERECNet and the BEREC website.[5]

2.1 Prof. Julia Velkova, Linköping University - A social perspective on the end-of-life of copper networks

Copper switch-off requires a social perspective that sees communication networks not only as wires and assets but as made by people and with people who value different things, and who form emotional, economic and material attachments to the networks. Such a perspective mandates considering three main questions for the process of copper switch-off:

2.1.1 Question 1: Who needs copper to go and who needs it to stay? Why?

Before switching off copper, operators and regulators must recognize the plurality of uses and meanings through which people maintain attachments to copper networks. Users do not exist in clear-cut categories, such as urban or rural; high-income or low-income; with disabilities or without. People should be seen as defined at the intersection of categories, and in different life situations at all times that might disallow switching to other technologies, even for resourceful consumers. It should also be recognized that users of networks are very different, and involve humans and non-humans (devices, institutions and people) that require care and dealing with emotions and human lives attached to the networks. We have also users such as mountain huts and tourist businesses in locations that are not commercially interesting for operators but require connectivity – and there is a question who will provide it in the absence of public utility. Based on the Swedish experience, it should also be noted that fibre might not arrive. Instead, we might get mobile connectivity, satellite-based services (e.g. Starlink), or nothing at all depending on where people are. An inclusive approach to users demands working with stress cases, feelings of loss and disruption, as well as different scenarios and life situations in order to project how copper dismantling might affect people, things and organisations.

2.1.2 Question 2: What happens when fibre does not arrive? Who provides basic connectivity services and takes the role of public utility? Does copper removal increase digital vulnerabilities? And could we stand in front of a situation when we will need to rebuild copper networks?

The decision to shut down copper networks is unprecedented in its scale and pace in the history of communications. Copper networks have existed since the mid-19th century. They have been continuously retrofitted, maintained and expanded since the times of the British Empire, and through much more turbulent moments of geopolitical, military, social, technological and environmental change than the present. They have demonstrated a remarkable societal resilience and endurance – by the fact that they remain in use. Copper

[5] BEREC external workshop on migration and copper switch-off in light of the DNA | BEREC

switch-off sets a risky precedent that defines nation-wide backbone networks as disposable. This raises the question: how long would any other subsequent network endure. Or are we entering an era of the planned obsolescence of nation-wide communication networks? How long is fibre envisioned to endure? Or 5G mobile networks?

Copper switch-off calls also for dealing with losses that look differently in each country. In Sweden, the copper network has been in service for 150 years and operated as a public utility and good that reached every single person in the country. This is not anymore the case and there is a sense of loss of a shared infrastructure for public connection, of a loss of an infrastructure of security, and of trust in telecom operators as well as politicians. This distrust and experience of loss come in addition to the creation of dead zones and uneven connectivity access that is particularly strong in the rural areas, but can also be seen in cities.

2.1.3 Question 3: Copper afterlives and contamination: What to do with all the toxic disused infrastructure after dismantling that keeps circulating around?

Copper switch-off sets in circulation millions of toxic utility assets that are traded on informal markets by citizens, such as creosote/arsenic impregnated utility poles. Network owners might need financial incentives to ensure proper disposal of such elements. The Commission has to also suggest how to deal with the ongoing environmental contamination that has already occurred in countries where copper switch-off has taken place, such as Sweden.

2.2 Benoit Felten- The Conundrums of Copper Switch-off

Copper switch-off, as a topic and policy consideration emerged because some incumbents, having deployed extensive Fibre To The Premises (FTTP), decided it made no sense for them to keep running their legacy copper network in parallel to their newer and more effective fibre network. As a consequence, they drew up plans to sunset their copper network and submitted those plans to their national regulators.

The provisions in the proposed DNA change this paradigm by making copper switch-off a goal for all incumbents in all countries. In fact, due to the vague definition of what is meant by copper it is unclear if only incumbents are targeted or if other players, like cable operators who have copper in their coax termination, or business parks, who have copper in their in-building ethernet are targeted as well. In fact, the question of copper termination circles back to incumbents who have deployed Fibre To The Building (FTTB) with ethernet in-building termination, quite a common deployment approach in the Nordics and parts of Eastern Europe.

The primary issue with this shift from a provision for incumbents who wish to switch off to all incumbents and (possibly) beyond, is that the justification for this broad mandate is not completely convincing yet. The impact assessment of the DNA produced theoretical (or modelled) benefit numbers, but does not demonstrate that countries that have switched off

already have enjoyed these benefits. As a consequence, we cannot and should not assume that all parties have incentives to switch-off.

Copper switch-off is often presented as a virtuous circle: switch-off generates demand for FTTP, which allows for more deployment and therefore more switch-off. It's not circular however: only countries where FTTP is already massively deployed and massively adopted already are going down the copper switch-off path.

For incumbents, there are clear incentives to switch off: OPEX savings, single platform management and marketing benefits and an opportunity to reinforce their positions in the wholesale market. But there are disincentives as well: the cost of deploying the FTTP in the first place, the cost of the switch-off process itself, the risk of losing wholesale revenues if competing with altnets, the reluctance of the last few % of subscribers to switch-over and the risk of bad media coverage. This ultimately means that there are three approaches by incumbents:

- Incumbents that have massively deployed Fibre To The Home (FTTH), limited altnet competition and/or no intention to cover the whole territory have the strongest incentive (Telefonica, Telia, Orange FR, TDCNet…)

- Incumbents that have broadcast an intention to cover 100% FTTH and face altnet competition have an incentive to selectively switch-off where their FTTH rollout is ready (BT Openreach, OpenEir…)

- Incumbents that still rely largely on FTTC for customer broadband and/or face significant FTTH altnet competition have limited to no incentive for switch-off (Telecom Italia, Deutsche Telekom).

As for governments, they may also have both incentives and disincentives to switch-off. The benefits to the economy are theoretical but have yet to be demonstrated, the benefits to the environment are real, but limited in scope, and the benefits of having a much better "lowest common denominator" of use experience may be real but the externalities are hard to demonstrate. On the other hand, they may need to fund FTTP deployment in rural areas, could be blamed for switch-off going wrong if they are seen to push for it, and could struggle to justify this in light of the unclear evidence of the benefits.

From a regulatory point of view, we can only draw experience from countries that either have switched off or are in the process of doing so. A comparative view of French and Spanish regulation on copper switch-off shows that both a hands-on (France) and a hands-off (Spain) approach can work. One is more secure than the other, but also more costly and could take longer to be implemented. This suggests however that there is no single approach to successful copper switch-off and that an approach that accounts for specificities in each market is perhaps the best.

In conclusion, here are some key points going forward:

- The goals of copper switch-off must be clarified at the EC level.

- The scope of copper switch-off must be clarified also.
- More research needs to be done into understanding the broader societal and economic benefits of copper switch-off.
- Additionally, more research needs to be done to understand how the process went in countries that have switched off (Spain, Sweden, etc.)
- A dispassionate assessment of the legal and regulatory tools that can be used to accelerate copper switch-off is sorely needed as well, as the current toolbox seems inadequate to incentivising reluctant incumbents.

2.3 Tony Shortall and Peter Alexiadis- The economic and legal aspects of copper network switch-off

Tony Shortall and Peter Alexiadis looked at the economic and legal issues surrounding the copper switch-off proposals in the DNA.

After first looking at the provisions contained in the DNA, the discussion moved to the direction of regulatory policy and of the digital targets. With the exception of the NGA Recommendations in 2008/2010 which were initially focused on FTTH based outcomes and then switched back to copper based outcomes, the targets have been consistent and moving in one direction.

There was a view that the new switch-off policy was consistent with the target evolution and that setting a target date was sending a strong signal for investment in FTTH and that the copper switch-off provision in the DNA were likely to be positive for investment.

The discussion then moved to look at the 'State of Play' with respect to copper/fibre networks in the European Union (EU), with three different data points considered – the first was the Digital Decade Policy Programme national roadmap reports, the second was independent forecasts of FTTH deployment in 2030 and finally a tracker of copper switch-off by country in the EU.

The main conclusions were that many Member States will have already closed their copper networks by 2030 and all remaining Member States will have met the conditions for copper switch-off (at least in terms of coverage) by 2030 and in a large number of exchange areas and/or country regions.

Economic research in this area suggested that copper network owners had an incentive to maintain their copper networks unless they had 100% coverage and/or limited competition in an area. The evidence presented suggested that in certain large Member States, copper network owners had more limited build outs than entrant operators (because they had other functional networks i.e. copper). The conclusion was that there were competitive and strategic reasons that would also encourage copper switch-off delay. If compensation for shutting down productive assets was a credible factor, this could create an additional reason to maintain the copper network and further encourage delay.

It was noted that the migration provisions in the DNA were more or less carried over from the EECC but that BEREC had to create guidelines that seek to protect consumers. The affordability provisions were questioned because it was felt that consumers might be encouraged to switch away from copper if copper prices could be increased without benefiting the copper network owner, maybe through a carbon tax.

There was concern expressed that the rate of adoption was absent from the sustainability provisions as this would have a meaningful impact on the extent of migration required ahead of copper switch-off.

The Explanatory Memorandum to the DNA explains that the Commission has assessed its mandated copper switch-off proposal by reference to Article 16 of the Charter which refers to the right to conduct a business. However, the authors explained that the compatibility assessment also needs to take into account the impact of Article 345 of the Treaty for the Functioning of the EU and Article 17 of the Charter, which foresee interventions against property rights as needing to satisfy the general principle of proportionality, and the understanding that compensation needs to be offered to those who have been deprived of their property rights. In any such assessment, the tradition of individual Member States in their application of national rules on property will be a key component of that compatibility analysis. Accordingly, it might be appropriate to weigh the benefits and costs of other policy options when considering the most appropriate form of intervention to migrate European operators from copper to fibre.

2.4 Lucrezia Busa, EC- Transition to fibre in the DNA

Lucrezia Busa, head of unit B-3, responsible within DG Connect for markets, competition and roaming, presented the provisions contained in the Commission's DNA proposal concerning the transition to fibre.

The cohesion of European society and the competitiveness of EU economy were presented as the key objectives of the policy interventions supporting the transition to fibre. Moreover, key problems and problem drivers, notably the persistence of copper networks and some regulatory issues, identified in the Commission impact assessment slowing down the deployment and take-up of fibre across the Union were discussed. The options considered by the EC were outlined, and the main benefits of the options retained in the DNA proposal were presented, covering both the measures related to copper switch-off and the accompanying regulatory measures.

The key principles of the Commission intervention are: 1 - predictability; 2 - coordination between EU and national level; and 3 - focus on end-users.

The framework governing the orderly switch-off of copper networks, together with the measures to support fibre deployment and take-up including, in particular, the Fibre Transition Plans to be developed by Member States and communicated to the Commission, was explained.

The EC identified the key stages for copper switch-off, the most important milestones and dates, starting from the definition of the copper switch-off areas to the acts by the national authorities mandating copper switch-off and the presentation by operators of the copper switch-off plans. The role of the different actors (Commission, NRAs, operators and Member States) and their interplay were explained.

The cumulative sustainability conditions (coverage and affordability) were further illustrated together with the exceptions to the copper switch-off.

2.5 Marita Jansson, Telia, Sweden - The closing of the Swedish copper network, how it is done, and experiences we have made

2.5.1 How it is done and experiences we have made

Background

The Swedish copper network originally consisted of 6 million copper lines spread across a vast geographical area. The adoption of fibre optics and a robust mobile network led to a spontaneous migration away from copper. The migration process began in rural areas in 2009 and is expected to be completed in urban areas by 2026. Customers had the freedom to choose their new service provider from suitable suppliers.

Equal Treatment of All Operators

All operators using the copper network were treated equally to ensure fair competition.

Lessons Learned

A key success factor was securing commitment across the entire organization, particularly from top management. It was crucial to use as many standard products and processes as possible to facilitate the transition efficiently. Another important element was understanding how customers actually used their copper services, as they often came up with creative solutions to make the most of existing technologies. Clear and transparent information was essential throughout the process. Emphasis was placed on the new opportunities customers would have with the transition. A 12-15 month notice period was given prior to decommissioning, and reminders and offers were provided along the way.

Stakeholders such as municipalities, the government, and the media were continuously kept informed, and there was ongoing dialogue with the regulatory authorities. Additionally, modern IT tools were used to support the transition, even though the underlying technology was old.

Decommissioning and Recycling

The dismantling of the copper network’s poles is scheduled for 2028, and the removal of active equipment will be completed by 2030. This will result in significant savings in electricity consumption and a reduction in the required floor space for the equipment.

This transition to modern infrastructure demonstrates how phasing out older technologies can lead to both operational efficiency and environmental benefits.

2.6 George Stathopoulos, OTE, Greece - Migration and copper switch-off status in Greece. OTE S.A. views on current framework and new DNA proposal

2.6.1 Current market context

Greece shows rapid fibre rollout and adoption (FTTH coverage ~62%, take-up ~22%), while copper remains significant for both retail and wholesale markets: ~3.5 million copper lines are still active out of ~4.7 million fixed access lines. There is also high FTTC/vectoring coverage (~60%), while there is no cable infrastructure in Greece. Deployment is also supported by public subsidy schemes (e.g. Rural & Ultra-Fast Broadband). OTE runs 3 layers: Copper/FTTC/FTTH.

2.6.2 Current regulatory framework

Copper switch-off is copper network operator-driven, within a framework set by the EETT (2023, updated 2025). OTE has already initiated the process, announcing 6 Local Exchanges (LEs) for switch-off in 2025.

The framework includes:

- Covering different switch-off scenarios (partial LE/total LE/total LE with PoP closure, with FTTC/FTTH transition)
- End-user and competition safeguards, before copper switch-off initiated in each LE:
  - ✓ ≥50% of all users (or 85% of OTE users) already migrated to NGA
  - ✓ ≥50% FTTH building already connected
  - ✓ Full NGA availability for all copper users
  - ✓ Equivalent or better quality for wholesale products
- Timeline: the process follows four structured stages (1. notification → 2. stop-sell → 3. forced migration → 4. service discontinuation), spanning up to 3 years per LE area, depending on market conditions (e.g. presence of alternative network operators (ANOs) and take-up levels).

Copper sub-loops cannot be removed where FTTC is used by ANOs.

2.6.3 FTTC stop-sell in FTTH connected buildings as a migration booster

Since June 2025, FTTC stop-selling in FTTH-connected buildings (FTTC and FTTH VULA from the same wholesale provider) allows for faster FTTH take-up. This shows that well-designed, proportional measures can effectively accelerate migration and we don't need an enforced copper decommissioning to boost fibre demand.

2.6.4 Lessons learned from Greek Framework

Firstly, flexibility is essential when it comes to achieving full coverage. The 100% FTTH coverage target should be reduced (e.g., to 95%), with alternative technologies like Fixed Wireless Access (FWA) or satellite services to complement the rollout. Timing should be adaptive, with a 3-year period that allows faster migration where progress has already been made. Additionally, careful planning is necessary to avoid migration peaks, particularly towards the end of the transition.

Business-to-business and business-to-government services are more complex and require IP migration as a first step. Open access is also crucial to maintaining competition and customer choice, especially for bundled services. Lastly, the above-described stop-selling regime for FTTC services has proven effective, and this strategy could be extended to include stopping the sale of copper services in FTTH-connected buildings.

2.6.5 Views on the DNA proposal

OTE emphasizes the importance of an operator-driven process for copper network decommissioning, in terms of know-how, planning and in view of the need for customer protection. It is also noted that a one-size-fits-all approach does not work across different Member States, as each has distinct needs and conditions.

In the Greek context, a market-driven transition has proven to work. It could be clearly observed that the acceleration of fibre deployment preceded any copper switch-off announcement. Maintaining customer choice is a priority. Moreover, it was emphasized that forced provider switching should be avoided. Open access is considered a prerequisite for preserving competition. OTE considers that FTTC remains a valid interim step in the transition process.

Forced copper switch-off could create challenges by exacerbating existing bottlenecks in construction resources and costs.

The complexity of the proposed DNA framework is seen as overly bureaucratic, which may hinder the transition's efficiency.

- Copper Network operator-driven process is essential (know-how, planning, customer protection);
- No one-size-fits-all approach across Member States, different realities and needs;

- Market-driven transition works: in Greece, fibre acceleration preceded any copper switch-off announcement;
- Customer choice must be preserved (avoid forced provider switching), open access pre-requisite;
- FTTC remains as a valid transition step;
- Enforced copper switch-off could exacerbate existing bottlenecks in construction resources and costs;
- Process complexity: the proposed DNA framework is seen as overly complex and bureaucratic.

2.6.6 Conclusion

Copper switch-off can be a success if it stays pro-customer, pro-competition, and executable; with the copper network operator in the driver's seat, under clear regulatory safeguards and tailored to the local market conditions.

2.7 Francesco Nonno, Open Fiber, Italy - Copper Switch-Off: Policy Drivers and Improvement Pathways

Francesco Nonno, Head of Regulatory & European Affairs at Open Fiber, illustrated recent figures published by FTTH Council Europe, representing how European FTTH coverage and take-up are steadily progressing, even if the pace is uneven among different countries. On one side we have countries such as Spain and Norway, which not only completed FTTH coverage, but also completed the copper switch-off process. On the other side we have relevant countries such as Germany, Italy, Austria and Belgium, where not only coverage is still to be completed, but take-up is much slower than elsewhere in Europe.

Open Fiber summarized evidence from the EC impact assessment on the benefits of copper switch-off among them: € 327 billion of GDP gain and significant increase in sustainability - confirming that analysis made in Italy by Deloitte and Politecnico di Torino brought similar results (5,5% GDP growth in rural areas and -86% energy consumption, which could entail up to 4 TWh savings with accelerated copper switch-off).

Open Fiber provided its view on the reasons why a copper switch-off would be beneficial for overall welfare and suggested that establishing a binding, yet progressive copper switch-off process will reduce the bottlenecks, especially if all the stakeholders, *in primis* the Institutions, cooperate in ensuring adequate communication to end-users.

With reference to the DNA proposal on copper switch-off, Open Fiber shared its positive view on the process proposed and suggested some changes to make the proposal more effective. In particular, Open Fiber suggested:

- to optimise the timeline of the copper switch-off process, mainly based on the fact that NRAs already dispose of detailed mapping information (from EECC Art. 22 mandate). On the basis of the analysis presented, the copper switch-off process could begin in December 2029 and could be concluded by December 2034, shortening by a full year both the beginning and the end of the process;
- to amend Art. 56, 2nd paragraph, by clarifying that measures to foster the transition to FTTH networks may include some public funding of the migration costs incurred by retail operators;
- to amend the sustainability condition of Art. 57, para 1 (a) by substituting “premises passed” with “active premises” served with copper, including a definition of active premises coherent with the one already used by BEREC in its guidelines on Art. 22 of the EECC. The reason for this change is not to require coverage of areas where there is no active copper service;
- to introduce a provision for NRAs to conduct public consultations to identify services operating exclusively on copper (e.g. telemetry, remote ignition, elevator alarms, medical devices), despite sharing the analysis of the EC impact assessment which identified that the issue has already been solved in various Member States with the migration of such services from PSTN to all-IP;
- in order to solve some operational issues, to include an explicit provision allowing the NRAs to mandate the removal of disused copper lines, freeing up the space needed to lay fibre optic cables and to mandate the NRA to issue guidelines containing technical specifications for the implementation of in-building physical infrastructures;
- to emphasize the necessity of a wide and well-coordinated public-private communication on the copper switch-off process.

Open Fiber concluded by summarizing that they consider that the copper switch-off process proposed is excellent, but it can be accelerated and effectively improved by adopting the measures suggested.

2.8 Maria José Nogueira Pardo, Telefonica, Spain - Copper switch-off: Telefónica’s experience

2.8.1 Executive Summary

Telefónica has completed one of the most extensive telecommunications infrastructure transformations in Europe: the switch-off of the legacy copper network and the transition to a fiber-based access network.

Between 2014 and 2025, more than 8,500 copper exchanges were decommissioned, marking the end of more than a century of copper-based telecommunications infrastructure. The process was carried out under a clear regulatory framework, ensuring continuity of service, protection of competition, and a smooth migration of customers to next-generation networks.

Customer migration exceeded 99%, demonstrating that large-scale network transitions can be successfully implemented when technological readiness, regulatory certainty, and effective operational planning are aligned.

2.8.2 Regulatory Framework

Spain was one of the first countries in the EU to establish a regulatory framework governing the switch-off of copper exchanges.

In 2009, the national regulatory authority introduced rules allowing the incumbent operator to close copper exchanges while safeguarding competition and protecting investments made by alternative operators.

Where operators had co-located equipment for local loop unbundling, a five-year guarantee period applied before switch-off. Where only bitstream access services were present, the notice period was one year. Exchanges without wholesale services could be closed with six months' notice.

The framework evolved over time. In 2016 the requirement that at least 25% of customers migrate before switch-off notification was removed. In 2021 the notice period for exchanges with collocated operators was reduced from five to two years, reflecting the maturity of Spain's fibre market.

2.8.3 Operational Model

Each copper exchange closure followed a structured and transparent process.

First, the operator notified the regulator of the intention to switch off a specific exchange. Detailed information about active lines, wholesale presence and fibre availability was provided.

Following notification, a notice period applied during which wholesale services remained operational and alternative operators could migrate their customers.

After this period, a guard period of six months prevented new copper activations while allowing final migrations.

Finally, the exchange reached its final switch-off stage and copper services were permanently discontinued.

The process must allow the operator transforming its network to achieve significant sustainability benefits: lower energy consumption, large-scale copper recycling, and a reduction in real estate assets and the maintenance costs associated with them.

2.8.4 Customer Migration

Customer communication was a key factor in the success of the process.

Customers began to be informed one year before the switch-off of their copper exchange.

A multi-channel communication strategy was implemented, including proactive calls informing customers about the upcoming exchange switch-off, messages on monthly bills, SMS notifications, and, when necessary, formal legal notifications one month before the switch-off.

Migration to fibre was typically offered free of charge, including installation, and customers were able to retain their telephone numbers.

These measures ensured a migration success rate exceeding 99% and minimized service disruption.

2.8.5 Impact on Competition

Maintaining effective competition was a core objective of the regulatory framework.

Alternative operators were given sufficient time to migrate customers to fibre-based services. Regulated wholesale fibre products ensured continuity of competition in the retail broadband market.

Activation costs for wholesale fibre were relatively low - approximately €68 for a new fibre access and around €22 where fibre termination already existed - facilitating migration and preventing barriers to entry.

2.8.6 Key Lessons Learned

The Spanish experience highlights several lessons for operators considering copper network retirement.

First, copper switch-off should only begin once next-generation networks are sufficiently deployed.

Second, regulatory certainty combined with flexibility is essential as markets evolve.

Third, proactive communication with customers is critical to ensure smooth migration.

Finally, once copper infrastructure disappears, regulators may need to reassess legacy regulatory remedies that were designed for copper-based networks.

3 Conclusions

The BEREC workshop took place at a crucial time where many Member States are advancing with fibre deployment and the related decommissioning of the legacy copper network. At the same time the EC published its proposal for the DNA which foresees major changes in this policy area compared to the current framework.

The workshop was welcomed by stakeholders with a very high level of interest and facilitated a fruitful debate between operators, the EC, NRAs and academia.

It became clear that many aspects of how to best organize migration and legacy copper switch-off need further consideration and discussion and the functioning of the instruments foreseen in the DNA proposal will be a key policy area to determine the success of the new legislation. Therefore, BEREC will continue its work in this policy field and looks forward, in the coming years, to building upon the valuable insights gained during this workshop.

Annex I: Agenda: BEREC external Workshop on migration and copper switch-off in light of the DNA proposal

Agenda

BEREC Fixed Network Evolution Working Group

BEREC External workshop on migration and copper switch-off in light of the DNA

17.03.2026, Brussels, Belgium

Location (hybrid)	**IRG Secretariat** Rue de la Science 14A, 1040 Brussels The meeting link will be circulated to registered participants one day before the meeting
Date & Time	**17.03.2026 09:15- 17:00 CET** The virtual room will be open from 09:00 CET

09:00- 09:15 Registration and welcome coffee for participants with physical presence

09:15- 09:35 Introductory remarks

09:15-09:25 Welcome words by Giacomo Lasorella, the President of the Italian Communications Regulatory Authority (AGCOM)

09:25-09:35 Introduction by the Co-Chairs of the BEREC Fixed Network Evolution Working Group, Alexander Thelen and Paolo Castiglione

09:35- 10:35 Academia

09:35- 10:05 Dr Julia Velkova, Professor, Linköping University- Sweden and Swedish Collegium for Advanced Study
A social perspective on the end-of-life of copper networks
(20 min presentation, 10 min Q&A)

10:05- 10:35 Benoit Felten, Managing Director, Fiberevolution- France
The Conundrums of Copper Switch-off

(20 min presentation, 10 min Q&A)

10:35- 10:50	**Coffee break**

10:50- 11:50	**Academia**
10:50- 11:50	Tony Shortall, Director, Telage - Belgium and Peter Alexiadis, Visiting Professor- King's College London and Research Fellow at CERRE The economic and legal aspects of copper network switch- off (40 min presentation, 20 min Q&A)

11:50- 12:20	**EC**
11:50- 12:20	Lucrezia Busa, Head of Unit, Markets, Competition and Roaming Unit, DG CONNECT, European Commission Transition to fiber in the DNA (20 min presentation, 10 min Q&A)

12:20- 13:40	**Lunch break**

13:40- 14:40	**Operators' Perspective**
13:40- 14:10	Marita Jansson, Head of Infra Strategy, Portfolio Management & Fixed Telephony, Telia Company- Sweden The closing of the Swedish copper network, how it is done, and experiences we have made (20 min presentation, 10 min Q&A)
14:10- 14:40	George Stathopoulos, Director for Regulatory Affairs, OTE Group- Greece Migration and copper switch-off status in Greece. OTE S.A. views on current framework and new DNA proposal (20 min presentation, 10 min Q&A)

14:40- 15:00	**Coffee break**

15:00- 16:00	**Operators' Perspective**
15:00- 15:30	Francesco Nonno, Director of Regulatory and European Affairs, Open Fibre- Italy and President, FTTH Council Europe Copper Switch Off: Policy Drivers and Improvement Pathways (20 min presentation, 10 min Q&A)
15:30- 16:00	Maria José Nogueira Pardo, Manager for wholesale regulation, Telefónica de España

Copper switch-off: Telefónica's experience
(20 min presentation, 10 min Q&A)

16:00- 16:50	**Discussion and Q&A**
16:00- 16:50	Discussion on the topic; Q&A
16:50- 17:00	**Concluding remarks**
16:50- 17:00	Wrap up and conclusions by the Co-Chairs of the BEREC FNE WG Alexander Thelen and Paolo Castiglione
17:00	**End of the workshop**

Annex II: List of Abbreviations

ANO	Alternative Network Operator
BEREC	Body of European Regulators for Electronic Communications
DNA	Digital Networks Act
EC	European Commission
EECC	European Electronic Communications Code
EU	European Union
FTTB	Fibre To The Building
FTTH	Fibre To The Home
FTTP	Fibre To The Premises
FWA	Fixed Wireless Access
LE	Local Exchange
NRA	National Regulatory Authority
POP	Point of Presence
VULA	Virtual Unbundled Local Access