

The economic and legal aspects of copper network switch- off

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Agenda

- Regulatory and target evolution
- State of Play - where do we expect to be by 2029/2030?
- How do we expect the competitive dynamic to play out?
- Consumers
 - Migration issues
 - Cost issues
- Property Rights under EU Law
- Compensation and Proportionality
- Conclusions

The essentials of CUSO in the DNA

- CSO applies only in Member States where copper is still in service after 30 June 2029. Member States must create a national “**transition to fibre plan**” by **31 October 2029** which will include *inter alia* a list of copper switch-off (CSO) areas (already defined by NRAs by 31 May 2028 - presumably along exchange lines...).
- Plans must be **updated by 30 June 2034**, reporting progress of switch-off, areas where fibre is viable but delayed, and areas where fibre is not economically viable; the Commission may comment and its views must be taken into account.
- Switch-off in a CSO area requires two sustainability conditions: (i) at least **95% of premises passed** by fibre; and (ii) **affordable, comparable-quality retail services** available for users currently on copper.
- NRAs are to assess which CSO areas meet the conditions and, from 30 June 2029, publish and **annually update a list of compliant areas**.
- Member States must **mandate copper switch-off** in compliant CSO areas before **31 December 2035** and, in principle, in all CSO areas by that date (except where sustainability conditions are not met).
- **Transparency** and other obligations apply.

Regulatory commitment and changing targets

- Overriding policy driver has been that stable, transparent and legally binding rules and objectives encourage long-term investment, preventing arbitrary policy shifts.
- The **telecoms technology trajectory** runs as follows: 2005 qualitative broadband expansion (i2010) → 2010 initially NGA was FTTH-focussed, then copper focussed → 2015 quantified basic/ultra fast broadband (30/100 Mbps by 2020) → 2018 very high capacity networks (FTTH baseline) and 5G for key sites and all households by 2025 → DDPP universal gigabit and almost ubiquitous 5G by 2030.
- The DNA does **not set new speed or coverage targets** but adds hard deadlines on legacy copper switch-off.
- Targets are evolving. While targets move, it is general only in one direction.
- Targets/objectives require clarification (*i.e.*, why “***copper equivalent***”?)
- Policy should send a strong investment signal.

State of Play

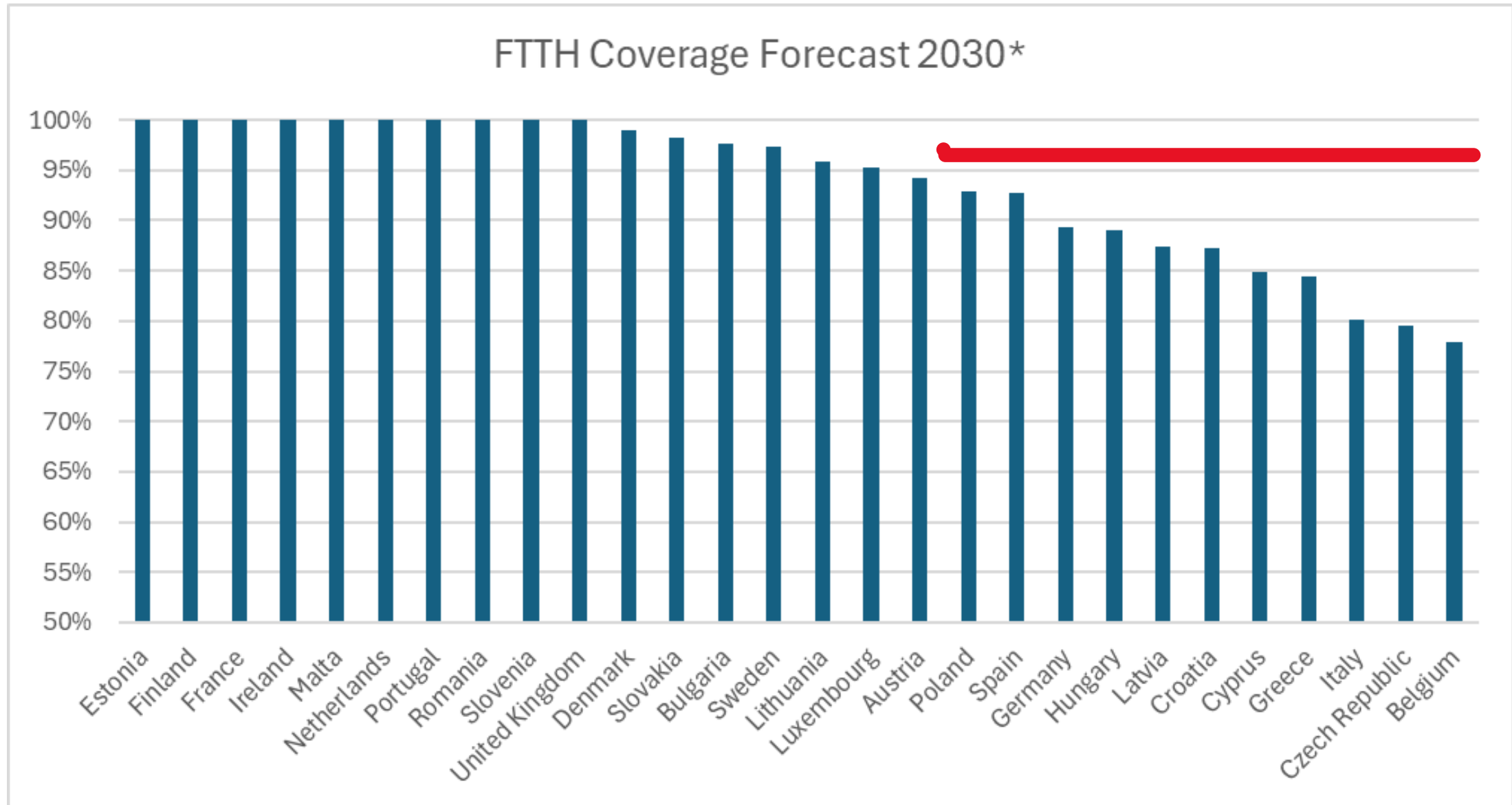
Important data points:

1. Member States' National Road Maps are set out in Country Reports under the DDPP framework, which identifies measures Member States are taking to achieve the DDPP targets.
2. IDATE coverage forecasts for 2030.
3. The FTTH Council CUSO Tracker being prepared by Cullen International identifies how copper switch-off is being achieved today, the progress being made to this end and plans being formulated.

Digital Decade Targets

- National Digital Decade roadmaps are published here: <https://digital-strategy.ec.europa.eu/en/library/state-digital-decade-2025-report>
- Of the 27 Member States, 15 claim they will have 100% coverage by 2030.
- Of the 12 who do not claim 100% FTTP by 2030, most make no claim.
- Of 7 Member States, LT (currently 78.3% HP), IE (73.5%), DK (87.2), FR (87.5%), NL (85.3%), SLO (80%), AT (44.8%) 5 are well above current average) while of another 5 Member States, only 2 will fall short significantly (i.e., RO 99%, SE 98.5%, HU, 95%, BE 82%, CZ 60%). All bar CZ (95%), HU (97%), LT (98%), RO(99%), SE (98.5%) and CZ who do not report anything, expect to hit 100% VHCN coverage by 2030.
- Because some of the forecasts might be judged a little optimistic, IDATE forecasts for FTTH Council Europe can help triangulate the data.

FTTH coverage forecasts 2030



* Based on IDATE forecasts and own calculations (own calculations concern the denominator)

Copper switch-off tracker

* Fraction of retail and wholesale services on the historical incumbent operator's network based on fibre (FTTH or FTTB).
 ** Difference compared to last year, percentage points (p.p.)

| Country | Active lines in the incumbent's network based on fibre* | Trend** | Planning phase | Target date | Plan publicly available |
|----------------|---|-----------------------------------|----------------------|-------------|-------------------------|
| Norway | 100% | | switch-off completed | 2025 | ✓ |
| Spain | 100% | +7 | switch-off completed | 2025 | ✓ |
| Sweden | 99% | +4 | switch-off started | 2026 | ✓ |
| Malta | 98% | +60 | - | - | |
| Portugal | 97% | Recent data not available | switch-off started | - | |
| Bulgaria | 93% | +5 | - | - | |
| Cyprus | 90% | Percentage not available for 2025 | switch-off started | - | |
| Luxembourg | 79% | +6 | switch-off started | 2030 | |
| France | 79% | +12 | switch-off started | 2030 | ✓ |
| Lithuania | 77% | +2 | - | - | |
| Denmark | 70% | +5 | switch-off started | 2030 | ✓ |
| Latvia | 69% | +2 | - | - | |
| Ireland | 67% | +22 | - | - | |
| Estonia | 65% | +1 | - | - | |
| Netherlands | 61% | +12 | switch-off started | - | ✓ |
| Poland | 56% | +15 | - | - | |
| United Kingdom | 39% | Percentage not available for 2025 | closure started | - | ✓ |
| Croatia | 29% | +9 | - | - | |
| Italy | 21% | +11 | - | - | |
| Greece | 17% | +13 | closure started | - | |
| Belgium | 13% | -4 | switch-off started | - | ✓ |
| Germany | 10% | +5 | - | - | |
| Czech Republic | 9% | +4 | switch-off started | - | |
| Austria | information not available | | - | - | |
| Finland | information not available | | switch-off started | 2025 | |
| Hungary | information not available | | switch-off started | - | ✓ |
| Romania | information not available | | switch-off started | - | |
| Slovakia | information not available | | - | - | |
| Slovenia | information not available | | - | - | |
| Switzerland | information not available | | - | - | |



Conclusions on Sustainability (not affordability)

- The CUSO provisions are likely to be moot in a number of Member States because the copper network will already be shut down.
- All Member States will already have satisfied the conditions by 2030, even for those Member States which have not reached 95% overall coverage, large numbers of exchange areas (and/or regions) will have 95% coverage or better.
- Will CU operators not simply shut down their networks anyway? It is ultimately a question of incentives and returns – it depends critically on FTTH deployment patterns and who has built network (how far has the incumbent built out, how entrants have performed and, critically, the extent of adoption or migration from copper to fibre).

Incentives and returns

- What are the incentives for copper network operators to switch off their networks?
- A McKinsey Study from 2025 used a stylised model to look at returns in a range of scenarios
 1. Full fiber roll-out by CU owner without competition – full copper decommissioning
 2. Fragmented fiber roll-out (50/50 not overlapping) – & full copper decommissioning
 3. Competitive fiber rollout (full coverage and full overbuild) – & full copper decommissioning
 4. Competitive fiber rollout (full coverage and full overbuild) -out with delayed migration
- The conclusion was that with less than 100% coverage and/or competitive build-outs, Scenario 4 was best for incumbents.
- **“Migration delay is more beneficial for incumbents in cases with significant roll-out barriers and / or competition from attackers.”**

Dynamics and incentives

- How viable is it for the same entity to maintain two networks, where the operational and maintenance costs of one is higher than the other? How far out will FTTP be rolled out by incumbent firms?
- What we see in Germany is that entrants cover 70% of households on average in a given municipality when they deploy, whereas incumbent deployment is much lower generally, reaching around 45% of households (a rational choice, given the ubiquity of at least one network).

(<https://bmds.bund.de/aktuelles/aktuelle-meldungen/detail/neuer-bericht-zum-stand-des-glasfaserausbaus-in-Deutschland>)

- There are competitive dynamics which will be important:
 - Preserve market share, increase overall returns, weaken competitors.
 - CU a constraint on FTTH pricing.
- Copper competing with fibre via pricing schemes, etc., means that productive assets may be required to be shut down. This may unwittingly introduce a new incentive, namely, compensation being sought for a retiring asset.

Migration issues

- Adoption rates are also very important but largely absent from the Proposal. A Member State with 95% coverage and an 85% adoption rate is in a very different situation to a MS with 95% coverage and a 30% adoption rate.
- Provisions on migration in the EECC (Article 106) are carried over more or less intact into the DNA proposal (Article 100) with the necessary changes (Directive v Regulation format, *etc.*).
- BEREC is also to issue Guidelines on measures to ensure consumer disruption is minimised and the provision is very much focussed on protecting the consumer: *'....detail the compensation process of end-users by their providers in the case of delays in, or abuse of, porting and switching processes, missed service and installation appointments or failure by the provider to comply with the obligations set out in this Article...'*
- The second of the two triggers for CUSO concerns 'affordability' - affordable, comparable-quality retail services available for users currently on copper. Does this create the right incentives to migrate the last percentages of consumers to move from copper? Should a copper levy be considered in the run up to 2035 to drive up retail pricing? Depending on its implementation, this could make the CU network more valuable.

Property Rights under EU Law (i)

- John Lake (social contract theorist) has stated that: *“Government has no other end, but the preservation of property”*.
- As identified in the **CERRE Report** of December 2024 on the *Future of European Telecommunications*, the mandated copper switch-off option raises potential legal hurdles from two sources of European law, namely: (i) Article 345 Treaty on the Functioning of the European Union (TFEU); (ii) Article 17 of the Charter of Fundamental Rights (Charter).

Article 345 TFEU

- ***“The Treaties shall in no way prejudice the rules in Member State governing the system of property ownership”***. This reflects the fact that the EU does not mandate a uniform system of property ownership, irrespective of whether public or private ownership is the issue at stake. As such, the EU does not interfere with national property rules.
- Two interpretations can be attributed to Article 345: (1) Article 345 provides a complete **shield** to internal market legislative scrutiny, with no recourse to concerns about fundamental freedoms. **OR** (2) Article 345 is embedded within the EU constitutional framework, which includes the fundamental freedoms and competition law provisions. As such, it is a **sword** to assess the market integration project.

Property Rights under EU Law (ii)

- **Akkemans & Ramaeker:** *“the exact meaning and scope of Article 345 TFEU is not entirely clear. The phrasing of the Article is unfortunate, its wording is so broad that the meaning becomes difficult to determine. Perhaps these reasons also explain why literature and case-law is hardly available.”*
- Article 345 does not concern the content of the rights of ownership nor the objects of a right of ownership. **Property rights are not absolute**, however, allowing for restrictions based on the “social function” of property or the “**general interest**”.
- Thus, Article 345 does not mean that rules governing the system of property ownership are not subject to **fundamental rules** of the EU Treaty such as the prohibition of discrimination, the freedom of establishment or the free movement of capital. As such, the exercise of Member State powers cannot undermine those freedoms that underpin the Common Market. (See Case C-105/12 **Netherlands v. Essent** (unbundling of energy networks in the Netherlands); cf. Case C-244/11 **Commission vs Greece** (restrictions on property purchases in border regions); Case C-182/83 **Fearon Case** (compulsory land acquisition in Ireland); Case C-367/98 **Commission v. Portugal** (free movement of capital in context of privatizations).

Property Rights under EU Law (iii)

- Article 345 TFEU provides more flexibility than Member States might have under **Article 106(1) TFEU** but still requires them to comply with fundamental freedoms.
- Article 345 has a complex relationship with principles of competition law, which has its own contextual setting. Changes to property structures can also be justified if they contribute to a market environment grounded in **fair competition**, as is reflected in:
 - cases such as Case T-65/98 ***Van den Bergh Foods*** (access to ice cream fridges in Irish stores), Case T-201/04 ***Microsoft*** (interoperability of Operating Systems) and most recently Case C-233/23 ***Android Auto*** (interoperability with 3rd party apps);
 - expressly understood to be the case from the divestiture powers enjoyed by the European Commission under **Article 9 of Regulation 1/2003**; and
 - under **Merger Control powers** to remedy the creation of an SIEC position.
- Competition policy is on a par with principles of free movement enshrined in the TFEU, as its relegation from the early Articles of the Treaty to the Treaty Protocols does not change its status as an overarching EU policy goal (Case C-52/09 ***TeliaSonera***).

Property Rights under EU Law (iv)

- Article 345 TFEU also does not prevent action being taken against the **exercise of IP rights** (as opposed to the **existence** of those rights) (see Cases 56 & 58/64 **Consten & Grundig** and later precedents). IP rights are negative rights, providing owners with the right to **exclude everyone**, as the exclusive rights create trade barriers by their very nature. **Article 36 TFEU** refers to the fact that IP restrictions on trade “*shall not ... constitute a means of arbitrary discrimination or a disguised restriction in trade between Member States*”.
- **Under Directive 2009/24/EC**, copyright protection for computer programmes extends only to the expression of a computer programme and excludes ideas, functionalities, programming language and interfaces. Thus, reproducing such functionality does not infringe copyright. See Recital 11 and Case C-406/10 **SAS Institute Inc. v. World Programming Ltd.**
- It is arguable that both the meaning and functions of Article 345 TFEU have changed over the course of the EU integration process. It is not unreasonable to argue that Article 345 is seen differently and its **significance changes depending on the fields of law with which it interfaces**. The unitary concept of “property” has also changed over the years, allowing legislation to affect certain aspects of property.
- Article 345 TFEU applies in tandem with the provisions of the Charter, which protect the individual right to property under national law, whereas this provision addresses the limits of national authorities and the Commission when taking executive or legislative action in relation to property rights.

Property Rights under EU Law (v)

Article 17 Charter

*“1. Everyone has the right to own, use, dispose of and bequeath his or her lawfully acquired possessions. No one may be deprived of his or her possessions, **except in the public interest** and in the cases and under the conditions provided for by law, **subject to fair compensation** being paid in good time for their loss. The use of property may be **regulated by law** in so far as it is necessary for the **general interest**.*

*2. **Intellectual property** shall be protected.”*

Article 1 of the Protocol to the Convention on Human Rights

*“Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the **public interest** and subject to the **conditions provided for by law** and by the general principles of international law.*

*The preceding provision shall not, however, in any way impair the right of a State to enforce such laws as it deems necessary to **control the use of property in accordance with the general interest** or to secure the payment of taxes or other contributions or penalties.”*

Article 52 Charter: (1) *“Any limitation on the exercise of rights and freedoms recognised by this Charter must be provided for by law and **respect the essence of the rights** and freedoms subject to the principle of **proportionality**, limitations may be made only if they are necessary and genuinely meet objections of **general interest** recognised by the Union or the need to protect the rights and freedoms of others.”*

(3): *“In so far as this Charter confers rights which correspond to rights guaranteed by the Convention for the Protection of Human Rights and Fundamental Freedoms, the meaning and scope of those rights shall be the **same as those laid down by the Convention**. This provision shall not prevent Union law providing more extensive protection.”*

Property Rights under EU Law (vi)

- The Commission's **Explanatory Memorandum to the DNA** focuses only on the implications of **Article 16** of the Charter: "*The **freedom to conduct a business** in accordance with Union law and national laws and practices is recognised.*" This is also subject to the Article 52(1) exceptions.
- The right to property in Article 17 of the Charter is recognised as a **fundamental right** common to all national Member State constitutions. It has been recognised on numerous occasions (see Case C-44/79 **Hauer**). The Article is aligned with the terms of the 1952 Convention, as the Article became effective at the same time as the Treaty of Lisbon. The separate mention of IP reflects its particular importance at the time.
- There is no absolute right to property established under Article 17, with the right needing to be viewed in relation to its "**social function**". The essence of the right should be judged by reference to the principle of **proportionality** (e.g., the tobacco industry). In terms of policies of "**general interest**", taxation policy and planning regulation all fall within this category. Temporary exceptions to fundamental freedoms are allowed on security grounds.
- The Court of Justice has confirmed in **Agrotexim & Ors v. Greece** (ECHR 1995) that undertakings also have the right to property under the Convention, expressed as the **legitimate expectation of entitlement** to property. The doctrine of "legitimate expectations" is itself a general principle of EU law common to the Member States.

Compensation and Proportionality (i)

- Any limitation on Article 17 rights might pursue an objective of general interest and satisfy the principle of strict **proportionality** (*Van den Bergh Foods*, para. 170). The Court in Case C-238/87 *Volvo v Veng* held that a mandatory obligation on the undertaking to supply its IP can amount to the deprivation of the right. Competition law can regulate the manner in which an IP right is exercised (in this case, the failure to provide competitive spare parts), but it cannot decide on the very existence of the right itself (the right to exclude).
- **Article 52(1) Charter** recognises that limitations on rights can be imposed, provided that the essence of the right is protected and the limitations on the right **necessary and proportionate**. Are the two conditions for switch-off set forth in Article 54 DNA (fibre is not “*economically viable*” and “*no adequate connectivity solution capable of replicating copper-based services is available*”) sufficient in this regard to support a proportionate response?
- Is mandated copper switch-off otherwise **necessary** in **social, economic** and **environmental** terms? How can incumbents’ progressive retirement of copper networks be interpreted in terms of their economic interests?
- **Proportionality** is a general principle of EU law which has a number of dimensions, insofar as it can relate to: (1) the **reasonableness of the intervention** relative to the importance of the public interest being pursued; (2) the **reasonableness of the compensation** being provided and its timing; and (3) the available **alternative measures**, whether in terms of policy goals being pursued in light of their competitive impact, the measures adopted or levels of compensation being provided.

Compensation and Proportionality (ii)

- When assessing the issue of **compensation**, a number of considerations could be taken into account, including:
 - The Constitutional tradition of the Member State in question, given the fact that the right to property is probably enshrined in local law at that level.
 - The appropriate measures for the **value of the copper assets**, including depreciation, the *de minimis* nature of the network affected in terms of homes passed, the number of retail customers already serviced, and using as a benchmark the costing models adopted for the purposes of granting regulated wholesale copper-based access.
 - In valuing the assets, the **TeliaSonera Case** suggests the subsidisation of the copper network by the State over many years was a relevant consideration when determining an appropriate LRAIC costing model.
 - Some level of compensation could arguably take the form of **other financial benefits**, whether as additional **State aids** (see approach to stranded assets in energy sector), the **cost-sharing** with Altnets, or de-regulatory measures as a *quid pro quo* for copper switch-off (already practised by many NRAs).

Compensation and Proportionality (iii)

- Alternatives to a hard copper switch-off were suggested in the **December 2024 CERRE Report** in the form of:
 - State subsidisation measures to incentivise migration to VHCNs (this could now include eligibility criteria for State procurement projects);
 - allowing SMP-designated operators the flexibility to raise wholesale copper access prices in certain specified circumstances; and
 - continuing with the current regulatory regime under the EECC, whereby regulatory access obligations are calibrated *vis a vis* levels of fibre roll-out.
- It is important that **incentives** available under existing migration schemes forged by NRAs not be undermined.
- Ultimately, the level of compensation is complicated by the fact that the move to fibre is **desirable, but arguably not necessary** for many consumers and access seekers, as part of an overarching policy commitment to complete the Internal Market or to improve the conditions of competition. By the same token, the policy agenda has been clear that the continued use of copper cannot continue in perpetuity and hence **cannot justify legitimate expectations** along such lines.

Conclusions

- Many Member States will already have switched off their copper networks by 2030. All other Member States will meet the criteria in most if not all areas.
- There are **strong competition considerations** in copper switch-off. Those considerations may be positively or negatively impacted by the current DNA Proposal.
- The Commission arguably needs to justify its interventions under Article 345 TFEU on the basis of the **distinction between existence and exercise** (as occurs with competition law and IP), the enforcement of a **fundamental freedom** under the Charter or the pursuit of a **necessary harmonisation goal**. Does the mandating of copper switch-off satisfy any of these rationales?
- Is the level of **residual legal uncertainty** under a mandated switch-off scenario not necessary in light of other policy alternatives and current/projected levels of fibre deployment by 2035?

Thank You!

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