



THE CONUNDRUMS OF COPPER SWITCH-OFF

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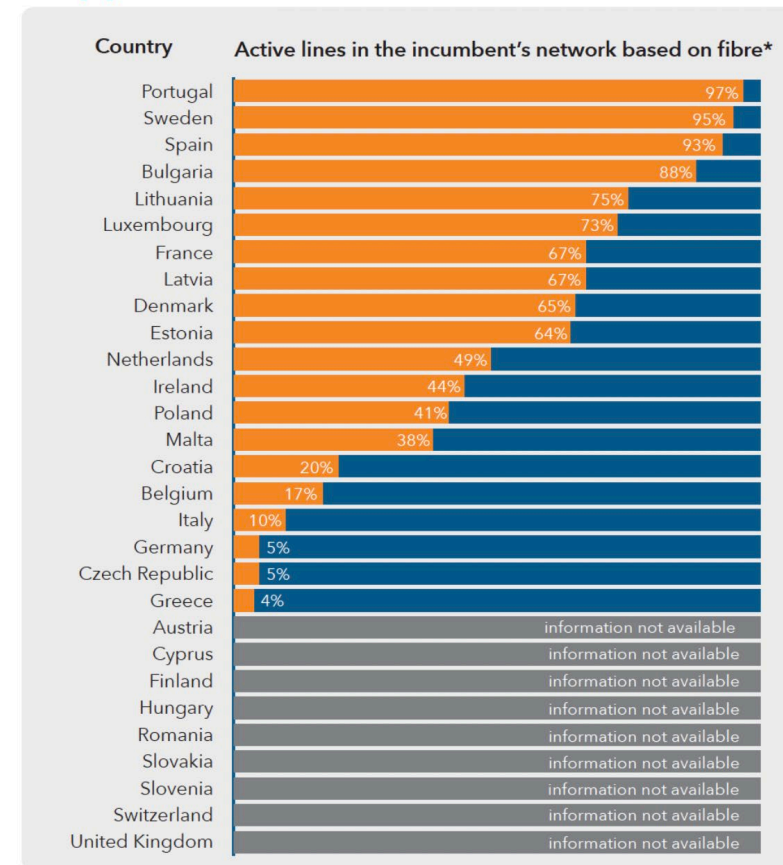
WHAT DO WE MEAN EXACTLY BY COPPER SWITCH-OFF?

- Some incumbents expressed their intention to switch-off their copper plants which led to NRAs getting involved in overseeing those plans.
- Many more incumbents did not particularly express their intention to switch-off copper, but it is now a goal in the DNA.
- The core sustainability argument is strange, and it should equally apply to cable (copper in coax) and in-building copper wiring (ethernet).
- The assumption that everyone (incumbents, altnets, governments, NRAs, businesses and consumers) has a positive incentive to copper switch-off is unproven and should at least be demonstrated.

THIS IS NOT A CHICKEN AND EGG THING

- Copper switch-off is often presented as a circular dynamic:
 - Availability of FTTH enables copper switch-off
 - Copper switch-off drives FTTH adoption
- But this is not, in fact, circular: without a widely available alternative to copper broadband (xDSL), copper switch-off is **not a realistic perspective**.
- Countries that are advanced on the path to copper switch-off, particularly large countries, all have **very high** FTTH availability.

Copper switch-off tracker



* Fraction of retail and wholesale services on the historical incumbent operator's network based on fibre (FTTH or FTTB).

THE EQUATION FOR INCUMBENTS

INCENTIVES

- OPEX savings from single network management
- Single technical platform to provision and market on
- Maintain / reinforce wholesale market share

DISINCENTIVES

- Cost of FTTH deployment
- Cost of copper switch-off process
- Risk of losing wholesale revenues
- Reluctance of last few % users
- Risk of bad PR / Coverage

- Incumbents that have massively deployed 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 plant 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 switchoff (Telecom Italia, Deutsche Telekom).

THE EQUATION FOR GOVERNMENTS

- Unless incumbents are gung-ho about copper switch-off, governments tend to approach the topic with caution.
- There are theoretical incentives for governments as well:
 - Sustainability / energy efficiency, real but limited in scope
 - Positive impact on economic activity, theoretical, yet to be demonstrated
 - Minimal national quality of experience, real but externalities are hard to demonstrate
- There are also risks associated with a copper switch-off push:
 - Ensuring national coverage is costly and delays copper switch-off
 - Pushing for copper switch-off may lead to reputational/PR damage if things go wrong
 - Benefits to economy / society have not been clearly demonstrated

UNDERSTANDING REAL LIFE EXPERIENCES



FRANCE

← hands-on

PROCESS

hands-off →



SPAIN

- 100% FTTH coverage pre-requisite to switch-off
- Geographical split into 7 areas negotiated for gradual switch-off (from rural to dense urban)
- Important PR/communications campaign to raise awareness of businesses, public services, building management, etc.
- Actual switch-off started in 2025, program due to end in 2030

- (Limited) coverage obligations lifted in 2016
- Phasing of switch-off in Telefonica's hands
- Telefonica to inform wholesale customers (retailers) of switch-off plans.
- Actual switch-off started in 2012, program ended in late 2025
- Regulator reports smooth transition, is there actual analysis/research on this?

SOME CONCLUSIONS

- The goals of copper switch-off must be clarified at European Commission 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.

QUESTIONS?



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