

# Assumptions for Fibre Cost Model

INCA submission for Ofcom TAR 2026-31

June 2024

Non-confidential

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# 1 Executive Summary

- 1 INCA and its members welcome the opportunity to provide comments to Ofcom on assumptions relevant to Ofcom’s fibre costing model (FCM), which will be used to support the forthcoming TAR for the period 2026-31.
- 2 Ofcom has stated regulatory objectives<sup>1</sup> wherein it intends to continue “*incentivising investment*” and promoting “*sustainable network competition*”.
- 3 The FCM is an important tool, which, ultimately, will have critical bearing on market developments as a whole. Therefore, structure and assumptions with the FCM are of utmost importance.
- 4 With the Statement of Strategic Priorities for telecommunications (SSP)<sup>2</sup>, to which Ofcom must have regard, the UK Government refers to the ‘fair bet’ for all firms.
- 5 In order to meet Ofcom’s regulatory objectives, and the fair bet for all, the TAR cost modelling must facilitate analysis of the range of costs faced by all efficient operators with commercial deployments, allowing Ofcom to select the most appropriate parameters and configurations to represent a realistic REO scenario to support its review of the relevant price controls.
- 6 In this paper, we provide early-stage comments on a number of assumptions relevant to the FCM and request that Ofcom takes these into account as it develops its work on the TAR. Our comments here are not exhaustive, and we plan to provide further inputs to Ofcom throughout the TAR process.
- 7 INCA believes that, as stated in previous consultation responses, there were material shortcomings in the FCM developed for the WFTMR which resulted in it not reflecting the costs of REO operators. Our comments in this submission are

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<sup>1</sup> Telecoms Access Review 2026, Starting work on the 2026-2031 review; Ofcom, March 2024.

<sup>2</sup> Statement of Strategic Priorities for telecommunications, the management of radio spectrum, and postal services; DCMS; October 2019.

relevant whether Ofcom decides to adapt the WFTMR FCM for the TAR or to develop an entirely new model.

- 8 In modelling operator cost variations, we prefer a bottom-up (BU) LRIC approach, as this typically provides greater flexibility and accuracy in representing the various types of operator deployments in the market. The FCM must include all incremental costs associated with the provisioning of incremental services at the access level.
- 9 INCA prefers the FCM to use empirical data drawn directly from the range of commercial operators active in the market.
- 10 This paper covers a number of important aspects of the FCM, including: the method used when defining the REO network coverage, the importance of scale, the impact of new resiliency recommendations, the recognition of all relevant incremental costs, the types of network topologies included in the model, the cost allocation methods used, the impacts of risk differentials between BT/Openreach and a REO, and variations in engineering design rules. As work on the TAR model develops, we expect to identify further issues.
- 11 The cost model should be open and transparent to industry review at regular intervals, and throughout development and application. We request early and continued consultation with Ofcom on development of the FCM, to be implemented as soon as reasonably possible (i.e. prior to 1Q2025 consultations).
- 12 INCA and its members look forward to working with Ofcom in the further development of the TAR.

## 2 Introduction

- 13 INCA is a trade association. Its members are supporting, planning, building and operating sustainable, independent full fibre and wireless networks that advance the economic and social development of the communities they serve, and permit

the provision of applications and services through open competition, innovation and diversity.

- 14 INCA's membership includes a wide variety of alternative network operators (Altnets), many of which are focused on network deployment in smaller towns and/or rural areas. INCA members have a track record of bringing quality and choice to many consumers where they would otherwise be left with only the most basic service offered by BT.
- 15 Therefore, it is important that Ofcom's TAR FCM (FCM) and its analyses account for varied operator approaches in the market and the associated impacts on cost structure.
- 16 INCA believes that, as stated in previous consultation responses, there were material shortcomings in the FCM developed for the WFTMR which resulted in it not reflecting the costs of REO operators. The model was conceived to reflect BT's network architecture, which differs in many respects from what Altnets are currently building.
- 17 Our comments in this submission are relevant whether Ofcom decides to adapt the WFTMR FCM for the TAR or to develop an entirely new model.
- 18 Our comments here align with, and augment those in our separate submission on the structure of the TAR FCM, and address Ofcom's request for comments at an early stage in the TAR process.
- 19 Ofcom has stated regulatory objectives<sup>3</sup> wherein it intends to continue "incentivising investment and promoting network competition"<sup>4</sup>, with a key focus on promoting "sustainable network competition"<sup>5</sup>, and "efficient commercial deployments to further extend coverage in the remaining, harder to reach areas".<sup>6</sup>

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<sup>3</sup> Telecoms Access Review 2026, Starting work on the 2026-2031 review; Ofcom, March 2024.

<sup>4</sup> Para 3.1.

<sup>5</sup> Para 3.5.

<sup>6</sup> Para 3.9.

- 20** In the Statement of Strategic Priorities for telecommunications (SSP)<sup>7</sup>, 2019, to which Ofcom must have regard when exercising its regulatory functions, government refers to the ‘fair bet’ wherein “an effective ‘fair bet’ regime would be one that allows firms making large and risky investments to have confidence that any regulation will reflect a fair return on investment, commensurate to the level of risk incurred at the time of making the investment decision”. Notably, government includes all commercial operators in its definition of the fair bet. We note that Ofcom appears not to recognise this in its definition, which associates the fair bet only with BT. We urge Ofcom to adopt the definition of the fair bet for all, per the SSP.
- 21** The TAR cost model will, ultimately, have an important bearing on market developments as a whole. As with any regulatory instrument, it will be essential to ensure that it supports Ofcom’s defined regulatory objectives. Therefore, structure and assumptions with the FCM are of utmost importance. By setting access charge controls with the TAR to reflect the balance of operators in the market, Ofcom will be meeting its objectives – enabling competition to become well-established through the next review period.
- 22** In this paper, we provide early-stage comments on assumptions relevant to the FCM and ask that Ofcom takes these into account as it develops its work on the TAR FCM.
- 23** We plan to provide additional comments to Ofcom throughout the development of the TAR FCM, and we hope that there will be close dialogue between Altnets and Ofcom as work on the TAR and the FCM progresses.
- 24** In order to meet Ofcom’s regulatory objectives, and the fair bet for all, the FCM must reflect costs representative of the wide variety of operators with commercial deployments in the market. Practically, to meet this objective, we expect that

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<sup>7</sup> Statement of Strategic Priorities for telecommunications, the management of radio spectrum, and postal services; DCMS; October 2019.

Ofcom will develop a reasonably efficient operator (REO) based TAR cost model, with a range of variable parameters.

- 25 We consider a REO model to be one which represents the costs of efficient Altnets commercially deploying and operating FTTP networks.
- 26 Critically, the FCM must provide cost modelling outcomes which will enable access charge controls to be set to incentivise Altnets and their investors to continue to invest in building out networks, and ensure that efficient altnet businesses remain sustainable in the market.

## 3 Key assumptions

- 27 We provide below comments on a number of areas, relevant to the development of the FCM and the TAR, and in line with regulatory objectives and the fair bet for all, which we expect to be important for Ofcom, in specifying and developing the FCM.
- 28 Our comments are not exhaustive, and do not, at this stage, identify all possible parameters and areas that could be material. We plan to provide further comments to Ofcom throughout the TAR process.
- 29 Given the range of commercial operator deployment scenarios evident in the market, the FCM should include flexibility to account for these. We expect that Ofcom will use the FCM to identify the costs of REO scenarios which reflect realistic competitive outcomes in the market.

### 3.1 Modelling principles

- 30 With the WFTMR, Ofcom developed a number of modules in its full FCM approach. These included scenario control, volumes, physical infrastructure, network design, and cost recovery modules.

- 31 Supplier-specific network equipment and associated costs should not be included in the cost model without adjustments, as these could distort REO and MEA principles. Adjustments should reflect the costs of equipment in a competitive market, and the costs at which Altnets will be able to procure, i.e. without distortions that would occur through incumbent contracts and very large economies of scale.
- 32 Costs can vary significantly by country (e.g. with regional supplier discounts and pricing levels). All costs within the FCM should be appropriate to the UK market, whilst upholding REO principles.
- 33 Broadly, INCA prefers an approach where empirical data and assumptions are drawn directly from a range of commercial operators including Altnets. All data used should reflect REO and modern equivalent asset (MEA) principles.
- 34 The FCM should be open and transparent to industry review at regular intervals, and throughout development and application. Where necessary and practicable, the cost model should be updated, with open consultation with industry. Specifically, we request early and continued consultation with Ofcom on development of the FCM, to be implemented as soon as reasonably possible (i.e. prior to 1Q2025 consultations).

## 3.2 Costing methodology

- 35 We note that the forward-looking long run incremental cost model with markups (FL-LRIC+) approach is the most appropriate methodology for development of the TAR FCM.
- 36 In modelling Altnet costs, we prefer a bottom-up<sup>8</sup> (BU) LRIC approach, as this typically provides greater flexibility and accuracy in representing the various types

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<sup>8</sup> A bottom-up modelling approach can be described as modelling a theoretically efficient network for a determined demand profile based on engineering design. It starts with the demand for the service/product included in the increment and builds an efficient network that can address this demand. It then assesses the use of each network element and processes the costs to service increments.



of commercial operator deployments in the market. Further, a BU approach is more appropriate to modelling the costs of networks which are in the process of deployment, and thus for which limited or no top-down data is available.

- 37 In providing FTTP services, Altnets must build out new FTTP access networks and also provide backhaul connectivity, aggregation, integration, and core network functions, often starting at a greenfield level.
- 38 The FCM must include all relevant incremental costs associated with the provisioning of incremental services at the access level.
- 39 Ofcom's modelling must take account of the variations in cost structure that can occur in the market, selecting the most appropriate REO-based parameters to support its regulatory objectives and the fair bet for all. Practically, to accommodate this, we expect that a range of variable parameters will be included in the model.

### 3.3 Modelling assumptions

#### 3.3.1 *Services offered and market segments*

- 40 Operators within the market are supporting a range of FTTP access services including those below and above 1 Gbps. These are typically specified according to quality of service (QoS) parameters, including access line speed, minimum downlink and uplink data rates during the busy hour (at >90% of the time), and with other parameters such as latency, jitter, and packet loss, and no degradation with take-up.
- 41 The FCM will need to support the range of services being developed in the market over the long run, this can be achieved via the appropriate selection of engineering design rules assumptions and routing factors (as appropriate, see below).

#### 3.3.2 *Terrain variations and geographic area types (geotypes)*

- 42 Operators are active in the market with commercial network infrastructure build across a wide range of geographical area types (geotypes) which impact on a

number of factors in network design and deployment. Therefore, it is essential that multiple geotypes are supported in the TAR FCM.

- 43 In the WFTMR FCM, Ofcom included multiple geotypes with variable parameters including split ratios and cable, trench, and duct distances and unit costs according to the classification of exchanges and associated areas by geotype and postcode sector. New trenching costs were included, along with asset re-use via PIA according to assumptions which varied between incumbent and REO scenarios.
- 44 For the TAR model, Ofcom should continue to adopt a geotype-based approach, ensuring that the modelled unit of area is appropriate to provide a robust estimate of cable and duct route distances, costs by terrain type and premises density; this should be designed to provide a reasonable estimate of the actual parameters of typical REO deployment.

### **3.3.3 Market shares and take-up levels**

- 45 Within given deployment areas, market shares and take-up levels will vary according to factors including levels of overbuild and infrastructure-based competition, pricing competition, the willingness of ISPs to use Altnet networks and operators' marketing campaigns.
- 46 When fibre networks are rolled out, capitalised network build is developed over time according to volumes of premises passed (with investor agreements); as take-up develops, customers are progressively connected using drop cables and customer premises equipment (CPE) which may be recorded as operational costs or capital expenses.
- 47 Thus, the sequencing, timing, and structure of costs incurred in practical network deployments is important, and the FCM must enable the modelling of realistic deployment scenarios. This is discussed in our submission on the FCM structure.<sup>9</sup>

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<sup>9</sup> INCA submission: Structure of Fibre Cost Model, June 2024, paras 43-45

- 48 Data on take-up levels should be drawn from the market and applied in the FCM as a variable parameter, to reflect real world take-up levels and the variation in take-up across operator types.
- 49 Thus, the rate and type of rollout is important, and a key sensitivity parameter. The FCM should include rate of buildout and approach to coverage development as sensitivity parameters (see below).

### **3.3.4 *Economies of scale and scope***

- 50 Economies of scale can arise where average unit costs fall as output increases, and also through bargaining power in the market.
- 51 Economies of scope can arise where two or more services share the same fixed costs; i.e. where average costs fall as number of services increase.
- 52 In practical situations, the scale of network equipment (e.g. at the access level, number of ports per line card, number of line cards per rack or cabinet) used to build telecoms networks varies significantly according to market demand levels, network designs, service offers, supplier offers, and operator market positioning. For example, supplier discounts can vary significantly according to operator scale and purchasing volumes. These factors have direct and material impact on network-related costs.
- 53 Additionally, there will be material differences in the commercial scale and cost structure between incumbents and Altnets, resulting in further cost variations. For example, significant variances can be expected across common costs, such as sales and marketing, utilities, and general overheads.
- 54 With new buildout, Altnets face higher costs per premises passed and connected, by virtue of their relatively higher incremental costs during business start-up and growth phases. These costs will include the build-up of a stock of repair assets.
- 55 In developing the TAR FCM, unit costs should be reflective of the costs that a REO will face in the market, and not be based on established commercial contracts and large economies of scale.

56 The WFTMR sought to address the issue of economies of scale by simply reducing the assumed market share for the REO, but it is essential that the TAR FCM addresses sources of scale economies at a more causal and granular level.

### 3.3.5 *Network topology*

57 We recognise that the use of a scorched node approach in regulatory cost modelling is well-established, as it is usually assumed that modelling with a scorched earth or fully 'greenfield' approach introduces too many variables into modelled scenarios. By definition, Altnets reflect a situation in the market where new commercial FTTP buildout is occurring.

58 Many Altnets adopt a ring-based network architecture which, compared to BT's tree-and-branch structure, provides a greater degree of resilience and greater flexibility in meeting increased levels of demand in the future. Such an approach may involve higher costs in the earlier stages of deployment but greater efficiency in the long run.

59 We note that with the WFTMR FCM, Ofcom developed both scorched node and scorched earth models, representing the situation where an efficient operator will not seek to use existing network sites and infrastructure where these are less cost-efficient than own build. However, the scorched earth option modelled was in fact largely reflective of the physical network topology of BT Openreach.

60 Further, we note BT's planned closure of a significant number of its exchanges. Where these are currently used, or were planned to be used, it is likely that material cost impacts will occur as a result of these closures<sup>10</sup>. This reinforces the need for appropriately defined scorched node and scorched earth options in the model.

61 Therefore, the FCM should include both scorched node and scorched earth approaches, where the scorched earth option is reflective of Altnet deployment

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<sup>10</sup> Note: Ofcom's definition and review of the IEC market will materially affect the REO cost structure and levels.

with some reuse of existing assets but introducing modern network design including ring-based resilient network architecture.

- 62 Commercial network buildout is motivated primarily by economics at the regional or local level, and altnet network build projects tend to be based on PIA where available and usable, and with FTTP clustering, tree and branch, and ring or daisy-chain network topologies to maximise network resilience and minimise cabling, ducting, and dig distances per volume of premises passed and connected.
- 63 The FCM must include parameters to enable variation of the extent to which PIA is available and accessible, and also the various types (i.e. underground ducted and non-ducted, overhead cables).
- 64 In practice, network buildout is typically developed based on regional projects, using least-cost coverage and incremental buildout. Buildout projects at the local level may cover towns or regional areas, typically with several thousand premises passed per local area project and per national trunking node.<sup>11</sup>
- 65 Where PIA is not available, buildout should be modelled on the basis of incremental FTTP clustering and least-cost routing in typical buildout configurations, with early stage consultation with operators and data collection from the market.
- 66 The FCM should include sensitivity parameters to enable variation in network buildout approaches, taking into account dialogue with the market (e.g. % PIA enabled, least cost premises first, committed build areas, high take-up regions, incremental buildout and cost synergies, avoidance of BDUK subsidy areas, premises types and mixes within network build areas defined within the model).
- 67 Under the Telecommunications (Security) Act 2021,<sup>12</sup> telecoms operators must design their networks to avoid single points of failure, incorporating redundant paths and automatic failover functionality to maintain service continuity. They are required to secure network equipment that handles sensitive data, control access

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<sup>11</sup> Note: national trunking nodes and associated carrier services may be provided by various third parties.

<sup>12</sup> See: Telecommunications (Security) Act 2021; <https://www.legislation.gov.uk/ukpga/2021/31/contents/enacted>

to sensitive network parts, and manage supply chain risks to ensure third-party compliance with security standards. Regular assessments to identify and mitigate risks, along with prompt reporting of security incidents to Ofcom, are also mandated. Additionally, high-risk vendors like Huawei must be phased out of 5G networks by 2027 to comply with national security guidelines. These requirements will lead to additional investment and operation costs, which must be included in the FCM, as operators will need to recover them through their standard business operations.

68 Ofcom has recently consulted on telecoms resilience issues<sup>13</sup>, and a statement is expected later in 2024. Costs resulting from those rules will also need to be reflected in the FCM.

69 The FCM must include the material costs likely to arise as a result of UK Government policy and associated regulatory requirements (e.g. network security, switching, and resilience mandates).

### 3.3.6 *Incremental costs and cost recovery*

70 The structure and dimensioning of various operators' networks differs considerably. In building out new full fibre access networks, incumbent operators are likely to reuse and leverage a number of assets at the aggregation, trunking, and core networks levels, whereas Altnets will need to build or lease these without access to legacy estate. Incremental costs may therefore differ significantly according to operator types.

71 In the WFTMR FCM, only costs associated with the access network (i.e. BT fibre exchange to premises) were included.<sup>14</sup> However, as we described in our submission on the FCM structure,<sup>15</sup> it is important that, in its modelling for the

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<sup>13</sup> See: <https://www.ofcom.org.uk/internet-based-services/network-security/resilience-guidance>

<sup>14</sup> Note: The WFTMR FCM included some backhaul charges (for inter-exchange connections), though these were associated with the provision of business services.

<sup>15</sup> INCA submission: Structure of Fibre Cost Model, June 2024, section 4.1.1

TAR, Ofcom makes allowance for the additional costs that may be faced by a REO in segments beyond the access network.

- 72 This may be achieved by expanding the scope of the TAR model compared to the WFTMR FCM, to allow a comparison of core, aggregation and backhaul costs incurred by Altnets to those of BT.
- 73 Ofcom, therefore, must carefully research and define the appropriate cost elements to include to ensure that Altnets benefit from the fair bet principle in line with the regulatory objectives of sustained investment and competition.

### **3.3.7 *Network technologies***

- 74 We recognise that the FCM is associated with full fibre FTTP technology. Consequently, other (non-FTTP) technologies (e.g. HFC, FWA) should not be included in the model, and the cost structure of these will be significantly different.
- 75 Throughout the FCM, the concept of modern equivalent assets (MEA) should be applied and upheld.
- 76 The majority of operators are now deploying XGS-PON FTTP technology, and we expect that the FCM will reflect the majority use of this technology in the market. Some consideration should, however, be given to newer FTTP technologies such as NG-PON2 in the long run. INCA regards these technologies as MEA, and therefore appropriate for inclusion in the FCM.

### **3.3.8 *Routing factors***

- 77 Routing factors, as used in regulatory cost models, specify for each type of service the average use made of each type of network element in delivery of the service. They can thus be critically important and highly material in the derivation of wholesale service costs and charge controls.
- 78 Essentially, routing factors can support the derivation of the economic cost associated with using a particular network path (which may vary over time or geography, for any given single service).

- 79 In the WFTMR FCM there were some inconsistencies between routing factors and network dimensioning assumptions, in particular concerning the fibre split ratio used for GPON. In the network model, this ratio varied between 1:32 and 1:16 depending on the postcode sector, but in the routing factors the 1:32 ratio was applied in aggregate.
- 80 For the TAR FCM, where routing factors are used, they should be defined and applied in a manner consistent with the underlying cost allocations and where necessary in dialogue with operators in the market and regulatory cost modelling experts, to ensure they reflect reality.

### 3.3.9 *Network dimensioning and engineering design rules*

- 81 FTTP split ratios.<sup>16</sup> and associated network tree and branch or other design topologies, quality of service (QoS) overdesign ratios.<sup>17</sup>, optical fibre power link budgets.<sup>18</sup>, and network utilisation levels.<sup>19</sup> are all material factors in driving costs and can be expected to vary significantly across the market.
- 82 We understand that traffic demand was not a cost driver in the WFTMR FCM as the costs were considered to be driven primarily by lines and premises passed. However, for the TAR RCM, we suggest that some consideration is given to whether any of the relevant network elements (such as head-end electronics) are sensitive to traffic levels and incorporate such a driver if needed.
- 83 In the WFTMR FCM, Ofcom used 1:32 split ratios as standard, with a variation to 1:16 for some postcode sectors. In practice, a range of split ratios and splitter cascade levels are being used in the market. In areas with lower densities of

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<sup>16</sup> Split ratios: FTTP PON networks include optical splitters which essentially trade distance with number of premises served per node.

<sup>17</sup> QoS overdesign ratios: Networks are typically specified to meet QoS levels including capacity, delay, jitter, and packet losses using statistical parameters (e.g. minimum downlink data rate maintained for 95% of busy hour). Overdesign ratios are used to ensure that such specifications are met.

<sup>18</sup> Optical fibre power link budgets: Optical power levels (dBm) from transmit to receive units (i.e. OLT, ONT, gateway and drop cabinets) will vary according to cabling types and distances and other losses.

<sup>19</sup> Network utilisation levels: Networks are typically designed with 'spare capacity' to allow for growth and periodic variations in demand.



premises, we would expect lower split ratios than those used in the WFTMR model.

- 84 It should be noted that some dependencies across network design parameters and assumptions are likely. For example, FTTP PON split ratios will impact on optical power link budgets and hence fibre link distances supportable. These dependencies must be considered and implemented in the FCM.
- 85 Altnets that are still building market share will almost certainly have less efficiency in network utilisation than an established provider with an established user and usage base. This is not due to inefficiency in network design, but to the design of capacity for anticipated (and necessary for investment returns) usage levels. The FCM should recognise this factor.
- 86 The FCM must accommodate the range of variation in these parameters, and Ofcom should consult with operators and industry experts to gather supporting data and effectively apply this in the FCM.

### **3.3.10 Cost markups and operational costs**

- 87 We recognise that modelling of some costs can be challenging and that certain assumptions have to be made. Consequently, we accept that it may be necessary to incorporate some costs in the cost model through use of joint and common costs and application of equi-proportional markups (EPMUs).
- 88 EPMUs should, however, only be used in situations where there is no causal cost driver, such as when allocating corporate overheads. Wherever possible, operating costs should be modelled explicitly using causal drivers (while maintaining an appropriate balance between accuracy and the need to avoid undue complexity).
- 89 In the WFTMR FCM, over 60% of total opex was classified as an “other” category and was determined as a percentage of cumulative capex. We do not believe this represented an accurate reflection of the level and timing of REO operating costs.
- 90 The TAR FCM should therefore accurately reflect all major categories of incremental operational costs as borne by the variety of commercial operators in

the market. With FTTP access services, these cost categories for REOs are likely to include: backhaul and cloud IT leasing charges, staff salaries and hired labour, site and facilities leasing (e.g. wayleaves), permissions (e.g. highways), utilities charges, network operations and maintenance, buildout charges (e.g. drop cables, ONT / CPE / subsidies, repairs) (where non-capitalised), peering and interconnect, sales and marketing, and overheads (e.g. common costs, R&D, business charges).<sup>20</sup> This level of detail of was not applied in the WFTMR FCM. Clearly, operational costs are material, and accurate development of values will be important in the TAR cost model.

- 91 Consequently, we urge Ofcom to include appropriate category detail for operational costs in the TAR model, using BU activity-based costing (ABC) methods for derivation of material operational costs where feasible, and take account of network buildout timing, variations in operator scale, and resultant impacts on cost drivers (which may not be linear with smaller scale operators).
- 92 Examples of areas where ABC methods are proven in cost modelling include (opex cost element / volume cost driver): training / staff; field force access / passed premises; access fibre maintenance / duct & cable distances; customer support / total customers; product management / products; engineering operations / products. Example ABC cost calculation (labour):  $\text{Cost}^{21} = \text{Volume\_Units}^{22} * (\text{Driver per Unit}^{23}) / (\text{Driver per FTE}^{24}) * (\text{Cost per FTE}^{25})$ .

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<sup>20</sup> Some of these categories fall outside the scope of the access network but are nonetheless relevant to the consideration of REO costs as noted in paragraphs 67 and 68 above.

<sup>21</sup> Cost = Operational expense cost line item.

<sup>22</sup> Volume\_Units: The appropriate volume units for an activity (e.g. number of ports).

<sup>23</sup> Driver per Unit: The work driver's relationship to a unit (e.g. maintenance tickets per port).

<sup>24</sup> Driver per FTE: The annual productivity for an FTE for an activity (e.g. maintenance tickets closed per FTE).

<sup>25</sup> Cost per FTE: The annual (fully loaded) cost of an FTE performing and activity.

### **3.3.11 Depreciation and asset lifetimes**

- 93 Asset lifetimes will vary considerably according to asset classes. For example, buildings, ducts, and fibre cables will generally have much longer economic lifetimes than electronic equipment.
- 94 It should be noted that, in practice, assets can be retired due to economic obsolescence, as well as technological ageing (i.e. end of life, EOL).
- 95 Economic lifetimes, rather than accounting lifetimes, should be used in the cost model and these should be validated against operator data.
- 96 In the WFTMR FCM, Ofcom adjusted asset lives as a proxy for making a WACC adjustment to reflect the REO risk profile. We do not regard this as good practice, and with the TAR FCM, both asset lives and WACC values should be set according to market data for a REO.
- 97 We support Ofcom's approach in the WFTMR of using a forward-looking economic depreciation approach, which reasonably accounts for the true economic value of operators' assets in the market over time, and not via historical cost accounting methods.

### **3.3.12 Cost of capital**

- 98 Altnets will carry a higher risk than incumbent operators as they will be building out new customer bases and will be seen as risky by investors. These factors will carry through to the WACC, and thus must be reflected in any REO cost modelling.
- 99 WACC calculations in the cost model should reflect current and developing conditions in the market, the costs of capital across debt and equity markets, and levels of risk borne by operators.
- 100 The FCM should accommodate a range of WACC levels, reflective of those experienced by operators in the market.