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ICASA METHODOLOGY BRIEFING NOTE
ON CTR REVIEW 2021 COST
MODELLING PHASE
AUGUST 2023

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1 Purpose

1.1 The purpose of this document is to provide clarity in response to the Independent Communications Authority of South Africa's ("The Authority") cost modelling methodology for termination rates and, to address stakeholder comments and submissions on the cost modelling approach.

2 Introduction

2.1 The Authority is engaged in a review of the pro-competitive conditions imposed on licensees in terms of its Call Termination Regulations, 2014. A Findings Document was published on 28 March 2022 in which the Authority reviewed the market for wholesale voice call termination services as well as the effectiveness of competition in the telecommunications market.

2.2 The Authority made various determinations including the following:

- Licensees must charge cost-based pricing.
- Mobile termination rates will move to symmetry within a transitional period of twelve months.
- New licensees will qualify for asymmetry for a limited period of three years after entry into the market.
- South African licensees must charge reciprocal international termination rates for voice calls originating outside of South Africa.

- 2.3 The Authority published a notice of commencement of the cost modelling phase with respect to the review of pro-competitive conditions imposed on the relevant licensees in terms of the call termination regulations, 2014 (as amended) on 26 May 2023. The Authority stated, "*having determined that there are still competition issues in the call termination market that may require regulatory intervention in its Market Review Phase, the Authority is now embarking on the Cost Modelling Phase in order to determine the efficient cost of providing wholesale voice call termination services*".¹ The purpose of this notice was to outline the next steps and the timelines with respect to the cost modelling exercise. The bottom-up and top-down shell models were published on the Authority's website together with the notice.
- 2.4 A stakeholder workshop took place on 31 May 2023, at the Authority's offices in Centurion. One-on-one meetings were held with Cell C, MTN, Telkom and Vodacom between 1 and 6 June 2023.
- 2.5 The Authority proposed a modelling guide on bottom-up and top-down shell models for the determination of mobile and fixed-line wholesale voice call termination rates, published on 2 June 2023 ('the Authority's Proposed Modelling Guide')². This guide also explained the methodology used to determine Pure Long Run Incremental Costs. It describes how the modelling approach is based on "*international best practices which aligns with the determinations above, while also considering South Africa's market dynamics*". The guide further explains the cost modelling approaches available to the Authority, and recommends after an "analysis of economic efficiency, distributional effects, competitive effects, and commercial and regulatory consequences" that the Authority adopt the pure LRIC approach.
- 2.6 Stakeholders provided written comments on the notice of commencement of the cost modelling exercise on 7 June 2023, and the Authority provided written responses to those requests for clarification on 15 June 2023.
- 2.7 Stakeholders were then requested to comment on methodology aspects of the TD/BU cost models by 10 July 2023, later revised to 24 July 2023.

3 Asymmetry

3.1 Cell C and Telkom make submissions on asymmetry³. However, asymmetry is not commented on in this document, since this issue arising from ICASA's Findings Document is before the courts. Even if it were open for the Authority to reconsider its position on asymmetry at this stage, the pure LRIC methodology proposed below removes in large part the need for asymmetry, since this has the pro-competitive effects that smaller rivals Cell C and Telkom seek, as Telkom explains in its submission⁴, and as explained in the context of the competitive effects of implementing pure LRIC, in Section 6.7.

4 Modern equivalent assets for fixed-line services

¹ Government Gazette No. 48660. Page 429. Available <https://www.icasa.org.za/legislation-and-regulations/call-termination-rate-review-notice>.

² See Guide on bottom-up and top-down shell models for the determination of mobile and fixed-line wholesale voice call termination rates. Published on 2 June 2023. Available <https://www.icasa.org.za/legislation-and-regulations/mobile-and-fixed-termination-rates>.

³ See Cell C submissions in paragraphs 4, 13, 15-32. Telkom submissions on pages 4-6.

⁴ See Telkom page 5.

- 4.1 Telkom comments that the modern equivalent asset for fixed line services is in fact a mobile network, since fixed voice usage is declining substantially due to fixed / mobile convergence and the use of over-the-top ('OTT') services, and so there should be a single, converged fixed and mobile termination rate⁵. The notion that fixed and mobile termination rates ought to converge is an attractive one, particularly in countries like South Africa where there is a limited fixed-line network⁶, and where fixed line call volumes are declining⁷, as Telkom suggests.
- 4.2 At the same time, fixed lines are used by at least 1.5m households according to the Authority's State of the ICT Sector report⁸. By all accounts, fibre to the home coverage is expanding⁹. Moreover, the access component of the fixed line access networks are recovered via direct monthly charges, which means it would be inappropriate to apply the costs of mobile call termination to it, since the latter includes the recovery of access network charges. This means that the modelling for separate fixed and mobile termination rates ought to be carried out by the Authority, and the Authority can take a decision once the modelling is complete as to whether symmetry should be applied between fixed and mobile termination rates, including due to similarities between their costs.
- 4.3 Nonetheless, as explained below, the Authority may decide in future set termination rates at zero, for fixed and mobile services, as Telkom suggests.¹⁰

5 Timeframe and confidentiality.

⁵ Telkom submission, section 1.2.

⁶ This has been the case in Namibia and Kenya, for example, for more than a decade. See: https://www.researchictafrica.net/countries/namibia/Namibia_Interconnection_Benchmarking_Study.pdf and <https://ictpolicyafrica.org/en/document/41f68wp5o1c?page=10>

⁷ See State of the ICT Sector Report, March 2023: <https://www.icasa.org.za/legislation-and-regulations/state-of-ict-sector-report-2023-report>, Graph 33.

⁸ See State of the ICT Sector Report, March 2023: <https://www.icasa.org.za/legislation-and-regulations/state-of-ict-sector-report-2023-report>, Graph 30.

⁹ See, for example: <https://mybroadband.co.za/news/fibre/472693-south-africas-fibre-explosion.html>

¹⁰ Page 5 of the Telkom submission.

- 5.1 Stakeholders commented on timeframes and confidentiality aspects of the present process.
- 5.2 In relation to the timeframes for the present process, stakeholders commented that several months were allowed for during previous modelling processes¹¹. While Cell C for instance commented that they will have only two weeks to respond to the draft models in October, in fact previous iterations of the shell models would have been available since at least September¹². Telkom requests 90 days from the date of the publication of revised models¹³. However, this is excessive, particularly in circumstances where Telkom has requested that its own internal modelling be used¹⁴.
- 5.3 Given that the Authority has decided to apply pure LRIC as explained below in Section 6, there is no need to collect many of the additional details required for LRIC+ modelling, including detailed top-down information, and information needed to assess asymmetric rates. This will reduce the information burden on licensees and permit the timeframes proposed by the Authority.
- 5.4 Telkom also commented on the need for confidentiality given that it is the only fixed line operator likely to submit data to the Authority¹⁵. The Authority has processes in place to deal with confidential information.

6 LRIC, LRIC+, and depreciation method

6.1 Introduction

- 6.1.1 In this section, stakeholder comments on choosing between the LRIC and LRIC+ modelling approach are considered. The comments received on applying LRIC versus LRIC plus, can be categorised as follows:

¹¹ Cell C paragraph 39, Vodacom A3, for example.

¹² Cell C paragraph 39.

¹³ Telkom section 1.1.

¹⁴ Telkom section 1.2.

¹⁵ Telkom section 1.1.

- The Authority has pre-determined the outcome of the present consultation process¹⁶.
- Differences between cost standards¹⁷.
- Implications of changing market conditions over time¹⁸.
- The impact on economic efficiency¹⁹.
- The impact on low-income consumers²⁰.
- The impact on competition²¹.
- International precedent in light of the South African context²².
- The impact of the costing choice and depreciation method on the modelling and information burden on licensees²³.

6.1.2 It is important to note that the four categories referred to in the Authority's Proposed Modelling Guide, derived from Ofcom's May 2009 consultation document, are included in the above list²⁴.

6.2 The Authority had not pre-determined the choice of LRIC

6.2.1 Cell C, MTN, and Vodacom, comment that the present consultation process is not truly a consultation since the Authority has pre-determined the outcome of it²⁵. This was in the context in which the Authority's Proposed Modelling Guide considered adopting pure LRIC and given that the bottom-up shell models were designed for pure LRIC.

¹⁶ See MTN paragraph 1.7, Vodacom page 4.

¹⁷ See, for example, MTN paragraph 2.2, Vodacom page 9, Cell C paragraph 56.1.

¹⁸ Vodacom page 5.

¹⁹ Vodacom page 5.

²⁰ Vodacom page 5.

²¹ Cell C from paragraph 15, Telkom page 5, Vodacom page 5.

²² Vodacom page 5.

²³ MTN paragraph 2.2, Telkom page 4, Vodacom page 7.

²⁴ These were: (i) economic efficiency, (ii) distributional effects, (iii) competitive effects, and (iv) commercial and regulatory consequences. See: https://www.ofcom.org.uk/data/assets/pdf_file/0025/58075/mobile_call_term.pdf. A detailed assessment of the UK market using these criteria can be found at: https://www.ofcom.org.uk/data/assets/pdf_file/0020/42662/wmvct_annexes.pdf

²⁵ See Cell C paragraph 35, MTN paragraph 1.7, Vodacom page 4.

6.2.2 As explained at the stakeholder workshop, one-on-one meetings, and in responses to clarification questions, the Authority has not pre-determined the outcome of the process, and sought to collect data to compute the 'plus' component of LRIC plus including by means of the top-down models also circulated at the same time. The proposal to adopt pure LRIC in the Authority's Proposed Modelling Guide was prepared for the Authority to consult on. The Authority carried out this consultation process on what cost standard to adopt in order to limit the information burden on licensees raised during the course of the stakeholder workshop, one-on-one meetings, and in written clarification questions.

6.3 **Changes in market conditions**

6.3.1 There are very different views on whether the market has changed over time. Vodacom comments that the Authority has not explained any changes in the market over time that would justify the shift to pure LRIC, arguing this is a requirement in Section 67(8)(c) of the ECA, noting that the Authority has found no changes in the relevant markets, since all licensees continue to have a 100% market share over inbound calls²⁶. Furthermore, Vodacom comments that termination rates have already declined substantially over time²⁷. Cell C explains that there has not been sufficient change over time to remove asymmetry that LRAIC+ permits²⁸. Telkom, similar to Cell C, is concerned about current market distortions and proposes LRAIC+ in the event that asymmetry is adopted, or alternatively pure LRIC or even a zero termination rate in the event that asymmetry is not adopted²⁹. The latter comment is made in the context of growing over-the-top voice services (such as WhatsApp).

²⁶ Vodacom, pages 11-14.

²⁷ Vodacom page 15.

²⁸ Cell C paragraphs 13.1, 22 and 41, for example.

²⁹ Telkom page 6.

- 6.3.2 Vodacom is correct that the ECA requires that a change in market conditions must precipitate a change in remedies. There have been at least four changes in market conditions that warrant a change in remedies:
- 6.3.2.1 The first change in market conditions is that Telkom and Cell C are no longer new entrants, which means that asymmetry in their favour needs to be removed, as explained in the Authority's Findings Document³⁰. In order to promote competition in the absence of asymmetric termination rates and in the presence of low on-net prices that are below termination rates (explained in Section 6.7), lower termination rates applying the pure LRIC standard are needed.
- 6.3.2.2 The second change in market conditions has been that the substantial decrease in termination rates and increase in call volumes³¹ has not given rise to any of the negative impacts such as the waterbed effect resulting in disconnections, or lower investment and reduced coverage, that would have made the Authority circumspect, in first applying fully-allocated costs in 2010, and then LRIC+ in 2014 and 2018, rather than pure LRIC. This means that applying LRIC+ is no longer proportionate, since any potential harm has not arisen, despite the substantial change in termination rates over time.
- 6.3.2.3 The third change in market conditions is the substantial growth in OTT services, which Telkom suggests means the Authority should actually move beyond pure LRIC and to zero termination rates, since no termination rates apply to OTT services.³² Vodacom made substantial submissions to the Authority on the growth of OTT services³³. Even though the Authority found that OTT services are not a sufficient constraint to traditional voice service, they clearly play a significant role. Their success in the absence of termination rates or any charges to consumers is therefore a relevant consideration where the choice of

³⁰ See Paragraph 4.7.10, Government Gazette no 46107.

³¹ See Paragraph 4.3.1.1.8.2, Government Gazette no 46107.

³² See Telkom submission, p 6.

³³ See paragraph 4.3.1.1 of the Authority's findings document, Government Gazette no 46107.

costing methodology is concerned. Promoting lower termination rates arising from applying the pure-LRIC standard will help licensees emulate this success where traditional voices are concerned.

6.3.2.4 The fourth change in market conditions is the massive growth in data services, which Vodacom suggests means voice services no longer drive competition, and thus termination rates don't matter for competition³⁴. While voice services broadly, and termination rates in particular, remain important for competition for the reasons explained in Section 6.7, they no longer account for as great a proportion of operator revenues, and so there is less justification to charge high termination rates on the basis of recovering joint and common costs from voice services. There is also less risk of any waterbed effect or negative impact on investment, arising from low termination rates, if they exist at all (see Section 6.5). Given that lower termination rates, such as those arising under pure LRIC, benefit competition and consumers, pure LRIC is a proportionate standard to adopt.

6.3.3 Furthermore, while Vodacom is correct that all licensees continue to have 100% share of inbound calls to their networks, and the relevant markets have not changed in this sense, it is also correct, as Cell C points out, that market shares of MTN and Vodacom remain very high indeed, and markets for mobile services are ineffectively competitive³⁵. This is despite the substantial reductions in termination rates over time that Vodacom documents. While Vodacom may be correct that very little has changed in respect of the market power of MTN and Vodacom, this is not in favour of argument to maintain LRAIC+, since this would do little more than maintain the status quo, an ineffectively competitive market. Indeed, the lack of market changes over time, together with persistent on-net prices lower than call termination rates despite substantially lower MTRs over time, generating tariff-mediated network effects (explained in Section

³⁴ See Vodacom submission, page 13.

³⁵ See, for example, the Authority's findings document in the mobile broadband inquiry, Government Gazette 44337, published on 26 March 2021.

6.7), suggest that lower termination rates that would arise under pure LRIC are indeed proportionate.

6.3.4 In any event, the three changes in market conditions illustrated above show that applying higher termination rates, in the form of LRIC+, is no longer proportionate, and that lower termination rates, applying the pure-LRIC standard, are needed.

6.4 Differences between cost standards

6.4.1 In the Authority's Proposed Modelling Guide, the Authority explained how there are a number of costing options, including bottom-up Long-Run Incremental Costs (BU-LRIC), BU-LRIC+, and fully allocated costs (FAC). LRIC and LRIC+ are the alternatives presented in the Findings Document. Stakeholders have commented that the Authority's Proposed Modelling Guide excluded LRAIC and LRAIC+, which the Authority applied in the 2017/2018 process³⁶. Cell C, MTN and Vodacom propose using the LRAIC+ cost standard. Telkom supports this only if asymmetry is provided for (higher termination rates for smaller operator)³⁷. If there is to be no asymmetry, then Telkom proposes either a zero-termination rate (where the sender of traffic keeps all revenue) or pure LRIC.

6.4.2 Stakeholders comment, broadly, that LRAIC is a different standard to LRIC since LRAIC considers a broader volume increment, where network costs are apportioned to all services on average³⁸. LRIC, on the other hand, considers the incremental costs of terminating calls, i.e. the avoided costs if the service was no longer offered³⁹. Vodacom considers that LRAIC+ is 'often also referred to as "LRIC+'⁴⁰. This is because operators can recover joint and common costs by using LRAIC+. [REDACTED]

³⁶ See Vodacom submission page 11, MTN paragraph 1.7, Cell C from paragraph 55.

³⁷ Page 5 of the Telkom submission.

³⁸ See, for example, MTN paragraph 2.2, Vodacom page 9, Cell C paragraph 56.1.

³⁹ See Cell C paragraph 56.

⁴⁰ See Vodacom submission page 10.

[REDACTED]⁴¹. Cell C considers that a smaller share of costs would be recovered using LRIC+ compared to LRAIC+⁴². MTN is silent on any differences in cost recovery between the two, except to explain as above that the volume increment is different.

6.4.3 The Authority considers that LRAIC+ is a reasonable approximation for LRIC+, even if the volume increments involved are different between the two cost standards. The main idea is that joint and common costs are recovered via LRIC+, which is the same aim of LRAIC+. Any version of LRIC+ would need to provide some form of mark-up over pure LRIC to accommodate joint and common costs, and LRAIC+ provides a reasonable means of achieving this outcome. However, for the reasons explained below, the Authority considers that pure LRIC is the correct cost standard to adopt.

6.4.4 While a zero-termination rate (sender keeps all) regime may be appropriate in the future for South Africa as Telkom suggests, ICASA's Findings Document permits a choice between only LRIC and LRIC+ at this stage. Zero termination rates are therefore not considered further here. Stakeholders should nonetheless be guided that the Authority may consider a zero-termination rate in future.

6.5 Economic efficiency

6.5.1 In the Authority's Proposed Modelling Guide, the benefits of pure LRIC for allocative and dynamic efficiency were explained. Vodacom commented on both aspects of economic efficiency⁴³. Each of these issues is discussed in turn next.

6.5.2 Allocative efficiency

6.5.2.1 The first comment from Vodacom, [REDACTED]
[REDACTED]

[REDACTED].

⁴² See Cell C paragraph 57.4.

⁴³ See Vodacom from page 16.

[REDACTED]

[REDACTED]

[REDACTED] suggests that this is because South Africa has a lower population density and a higher proportion of people living in rural areas compared to the EU. This means that a greater proportion of network costs are for coverage rather than capacity purposes due to the lower population density in South Africa. Vodacom says 'this could mean' that the costs of moving to pure LRIC will be greater in South Africa compared to the EU. There are several problems with this assessment:

- 6.5.2.1.1 First, Vodacom presents no evidence of differences in joint and common costs between countries despite being part of a large group, Vodafone, with operations in many of the countries that it claims have lower costs than South Africa.
- 6.5.2.1.2 Second, even if such evidence did exist, Vodacom could recover its joint and common coverage-related costs, no matter how high they are in South Africa, from a range of services that do not have the deleterious impact on competition that high wholesale termination rates have.
- 6.5.2.1.3 Third, [REDACTED]
[REDACTED]
[REDACTED] This 'lack of materiality' (as Vodacom puts it) together with Vodacom's very high levels of profitability⁴⁶ suggest that despite termination rates being low, it is more than capable of recovering all of its joint and common costs.
- 6.5.2.1.4 Fourth, countries with even lower population densities than South Africa, such as Canada and the USA (discussed below in Section 6.8), have adopted even lower termination rates at zero, where

⁴⁵ Vodacom page 15, [REDACTED]

⁴⁶ Vodacom had an EBITDA margin of 38.4% in their financial year to 31 March 2023 for example. See: <https://vodacom-reports.co.za/integrated-reports/ir-2023/documents/vodacom-group-limited-integrated-report-2023-singles.pdf>. MTN South Africa's EBITDA margin in the year to December 2022 was similarly high, at 39.2% (See: <https://www.mtn.com/wp-content/uploads/2023/03/MTN-Group-FY-22-results-SENS.pdf>). The Competition Commission in its Data Services Market Inquiry report in 2019 documented that similarly high EBITDA margins for MTN and Vodacom over time, together with other evidence on their very high profitability, at paragraph 235: <https://www.compcom.co.za/wp-content/uploads/2019/12/DSMI-Non-Confidential-Report-002.pdf>

there is no recovery of any costs, let alone any joint and common costs.

6.5.2.2 On the contrary, as explained in the Authority's Proposed Modelling Guide, pure LRIC will result in prices closer to marginal costs, resulting in usage volumes closer to allocatively efficient levels.

6.5.2.3 The second comment that Vodacom made was that 'consumers may be more price-sensitive in South Africa than in more developed markets'

[REDACTED]

This is in the context of the Ofcom 2015 Mobile Call Termination Statement, which considers that the efficient mark-up over pure LRIC only tends to zero when consumers are not price sensitive since, with lower termination rates, other prices rise, and price-sensitive consumers may give up their mobile subscription⁴⁷. In South Africa, Vodacom suggests that 32% of South Africa's population does not use mobile services, and so there is a risk that pushing down termination rates will cause other mobile service charges to rise, and so price-sensitive customers will disconnect from mobile services.

6.5.2.4 However, Vodacom quotes selectively from the Ofcom statement. The remainder of the paragraph that Vodacom quotes from reads as follows: *"That any mark-up is optimal within the framework of the paper, even with elastic demand for subscription, also relies on marginal consumers being subject to subscription fees (rather than just usage fees), and that there are benefits to others from the presence of these marginal consumers being in the market. We note that there **are pre-pay packages that do not include subscription fees** (or large minimum top-ups), and that **because mobile ownership is now so widespread and the retail price of obtaining a basic mobile connection is now very low** (see for example the handset price evidence presented below), it seems most unlikely that there are subscribers with demand for mobile telephony that are being*

⁴⁷ See: https://www.ofcom.org.uk/data/assets/pdf_file/0029/76385/mct_final_statement.pdf

inefficiently priced out of participating in the market.” [emphasis added].

6.5.2.5 In other words, the paper being quoted from raised concerns about increases in monthly subscription charges arising from lower termination rates, the so called ‘waterbed effect’. There are a number of problems with Vodacom’s concerns being raised here:

6.5.2.5.1 First, the ‘waterbed effect’ that Vodacom [REDACTED] refer to was referred to in a study by Genakos & Valetti in 2011, which the authors updated in 2015, where they found that: *‘We re-consider the impact that regulation of call termination on mobile phones has had on mobile customers’ bills. Using a large panel covering 27 countries, we find that the ‘waterbed’ phenomenon, initially observed until early 2006, becomes insignificant on average over the 10-year period, 2002–11. We argue that this is related to the changing nature of the industry, whereby mobile-to-mobile traffic now plays a much bigger role compared to fixed-to-mobile calls in earlier periods. Over the same decade, we find no evidence that regulation caused a reduction in mobile operators’ profits and investments⁴⁸.*

6.5.2.5.2 The ‘waterbed effect’ is thus not cast in stone as Vodacom implies here. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] However, South Africa does not have a large fixed line network (as confirmed in the Frontier report⁵⁰) that the authors argue led to the waterbed effect in the

⁴⁸ Genakos, C., & Valetti, T. (2015). Evaluating a decade of mobile termination rate regulation. *The Economic Journal*, 125(586), F31-F48.

[REDACTED]
[REDACTED].

earlier period. In any event, whatever the impact of lower termination rates in Europe, economic research on South Africa suggests that retail prices declined with termination rates, the opposite of a 'waterbed effect'⁵¹.

6.5.2.5.3 Second, net termination revenues account for [REDACTED] net revenues, as discussed above. It is improbable that reducing these net-revenues would cause prices for other services to increase significantly.

6.5.2.5.4 Third, Vodacom provides no evidence that it has been forced to raise retail usage charges as a result of lower termination rates, which as Vodacom says, have declined substantially over the past years. On the contrary, Vodacom provided several examples of price reductions over time in its submission to the Authority's mobile broadband inquiry⁵²:

- *"In 2017, Vodacom introduced weekly bundles, again in response to the launch of similar offers by rivals. These were priced at an effective rate considerably below the effective rates of equivalent monthly bundles, in order to match the aggressive offers of rivals.*
- *Also, in 2017, Vodacom responded to competition from rivals on contract offers by significantly increasing data allowances (208% on average).*
- *In 2018, Vodacom further transformed its pricing by introducing URL bundles (see above) for popular services such as WhatsApp and Facebook.*
- *This has led to substantial reductions in the effective rates for these bundles, e.g. a 1GB WhatsApp bundle can be purchased for R29 at an effective rate of 3 cents per MB.*

⁵¹ Hawthorne, R. (2018). The effects of lower mobile termination rates in South Africa. *Telecommunications Policy*, 42(5), 374-385.

⁵² See: <https://www.icasa.org.za/legislation-and-regulations/vodacom-submission-on-the-market-inquiry-into-mobile-broadband-services> ; see page 46.

- *More recently, in March 2019, Vodacom halved the price of out of bundle data and started implementing price reductions on 30-day data bundles.”*

6.5.2.5.5 Fourth, in South Africa, more than 80% of subscribers are on prepaid services⁵³, where there is no subscription charge, and prices for entry-level handsets are very low⁵⁴. There is thus very little risk that consumers will give up their free prepaid subscription or throw away their handset because usage prices for other services recover the costs of terminating calls.

6.5.2.5.6 Fifth, over the period that termination rates have declined significantly (Vodacom comments on this), the number of mobile subscriptions overall has been rising, substantially, from around 91.7m in 2018 to 106.8m in 2022, according to the Authority’s State of the ICT Sector report⁵⁵. This suggests that lower termination rates do not result in disconnections in South Africa.

6.5.2.6 The concerns that Vodacom raises in relation to consumers disconnecting from networks as a result of lower termination rates causing higher retail prices are therefore without basis. On the contrary, economic research suggests that retail prices will decline together with termination rates, to the benefit of consumers, thus promoting objects 2(m) and 2(n) of the ECA.

6.5.3 **Dynamic efficiency**

6.5.3.1 Next, Vodacom suggests that the transition to pure LRIC will result in reduced investment incentives, particularly for low-income consumers in rural areas. This is based on [REDACTED]

⁵³ See, for example, the Authority’s state of the ICT sector report: <https://www.icasa.org.za/legislation-and-regulations/state-of-ict-sector-report-2023-report>

⁵⁴ Pep for example claims they sell approximately 70% of prepaid handsets in South Africa, (<https://techcentral.co.za/south-africas-biggest-cellphone-dealer-is-a-clothing-retailer/217746/>), and they sell many handsets for much less than R1 000: https://www.pepstores.com/products/cell/cellphones?attr_0_price=Range,0,1000&pageSize=24¤tPage=1

⁵⁵ See: <https://www.icasa.org.za/legislation-and-regulations/state-of-ict-sector-report-2023-report>, Graph 26.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.5.3.3 [REDACTED]

[REDACTED]

[REDACTED] However, very little actual evidence of lower investment over time in rural areas as termination rates declined appears in their report. In fact:

- 6.5.3.3.1 The Authority's state of the ICT sector report shows how 3G population coverage increased from 99.5% to 100%, while 4G/LTE coverage increased from 85.7% to 98% over the same period⁵⁶.
- 6.5.3.3.2 While annual investment in mobile services is volatile, changing for instance from R19.6bn in 2018 to R10.9bn in 2019, it has been relatively more stable between 2020-2022 at R15.6, R17.3, and R15.5bn respectively.
- 6.5.3.3.3 Vodacom explains in its submission to the Authority that the mobile sector currently provides 'near-universal coverage',⁵⁷ despite the dramatic reduction in termination rates over the past decade that Vodacom documents.
- 6.5.3.4 There has thus been no decline in investment as a result of termination rate reductions in South Africa. This is similar to the experience in other countries, including as reported in Genakos & Valletti (2015). As explained in the Authority's Proposed Modelling Guide, in a 2015 MCT Market Review Statement, Ofcom found no evidence of reduced investment when transitioning to pure LRIC in 2011.⁵⁸ On the contrary,

⁵⁶ Graph 16.

⁵⁷ Page 18.

⁵⁸ See: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/76385/mct_final_statement.pdf

the industry in the UK experienced investment growth in both network and services since 2011.

6.5.3.5 At the same time, it is highly likely that moving to pure LRIC will promote competition (Section 6.7). This includes promoting investments by challenger networks such as Cell C, Rain and Telkom. This in turn will likely promote competing investments by the incumbents in response. The adoption of pure LRIC is therefore supportive of dynamic efficiency, including investment, thus promoting Section 2(d) of the ECA.

6.6 Impact on low-income consumers

6.6.1 The Authority's Proposed Modelling Guide explained that lower termination rates are likely to benefit especially low-income consumers, as lower termination rates are likely to be carried over to lower retail prices⁵⁹. This suggests that the distributional effects of pure LRIC will be positive.

6.6.2 Vodacom comments, [REDACTED] that poor people are likely to be disproportionately worse off as a result of lower termination rates, since this will reduce the net revenues earned from low-income net-receivers of calls, in turn reducing investment incentives to compete for low-income consumers and roll out network infrastructure in low-income areas⁶⁰. This is especially so if the waterbed-effect does not arise, since mobile operators will not recover revenues from lower termination rates through higher tariffs. Alternatively, if the waterbed-effect does arise, then poor consumers will be harmed through higher prices, or reduced benefits or subsidies⁶¹.

6.6.3 Vodacom [REDACTED]
[REDACTED]

⁵⁹ Hawthorne, R. (2018). The effects of lower mobile termination rates in South Africa. *Telecommunications Policy*, 42(5), 374-385.

[REDACTED]
[REDACTED]

[REDACTED]

6.6.4 However, again, there are a range of problems with this analysis:

6.6.4.1 First, as explained above, interconnection revenues are only [REDACTED] of [REDACTED] revenues [REDACTED], as Vodacom explains in its submission. On this fact alone, it is improbable that lower termination rates will have a negative impact on any consumers, whether via the waterbed effect or via lower investment incentives.

6.6.4.2 Second, higher prices arising from a waterbed effect are improbable, for all the reasons explained above in Section 6.5. This applies equally to low-income consumers, who Vodacom documented lower prices over time to in its submission to the ICASA mobile broadband inquiry including while call termination rates were declining substantially in 2014, as follows⁶⁵:

- *"In 2014, Vodacom introduced hourly and daily bundles to address affordability constraints. These were priced on a "replicating portfolio basis" such that the effective rate for multiple, smaller bundlers of shorter validity was equivalent to the rate of larger, longer validity bundles. This helped to bring the benefit of larger monthly bundle pricing to marginal and poor customers who*

[REDACTED]

⁶⁵ See: <https://www.icasa.org.za/legislation-and-regulations/vodacom-submission-on-the-market-inquiry-into-mobile-broadband-services>; page 46.

otherwise would not have been able to afford the outlay of a monthly bundle.”

- 6.6.4.3 Third, it is important to note that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] This suggests that reductions in termination rates result in increasing inbound call volumes, resulting in relatively static inbound call revenues earned from low-income consumers. The likely impact on investment or the waterbed effect is therefore muted at most. Furthermore, low-income consumers benefited from growing incoming call volumes.
- 6.6.4.4 Fourth, the fact that [REDACTED]
[REDACTED]
[REDACTED]. For example, these customers might have bought data from Vodacom. It is not clear how this information therefore takes the Vodacom analysis forwards.
- 6.6.4.5 Fifth, mobile network coverage expanded over the period in which termination rates declined dramatically, as explained above in Section 6.5.3. In fact, mobile operators achieved ‘near universal coverage’ over this period, according to Vodacom. Thus, marginal consumers in rural areas experienced an improvement in investment and coverage while termination rates declined.
- 6.6.4.6 Sixth, there is economic research on the impact of lower call termination rates on low-income consumers in South Africa, who benefited by approximately R0.21 per minute on average over the period 2011-2014 in terms of improved consumer surplus⁶⁶.
- 6.6.5 It is thus highly unlikely that low-income consumers will be harmed as a result of lower termination rates. In fact, as explained in the Authority’s Proposed Modelling Guide, the opposite is likely true, as a consequence of lower retail voice prices, in circumstances where low-income

⁶⁶ Hawthorne, R., & Grzybowski, L. (2021). Distribution of the benefits of regulation vs. competition: The case of mobile telephony in South Africa. *International Journal of Industrial Organization*, 74, 102673.

consumers are more likely to use voice compared to other services. There is also economic research on the impact of lower call termination rates on different income groups in South Africa, and low-income groups do indeed benefit from this⁶⁷.

6.7 Impact on competition

6.7.1 The Authority's Proposed Modelling Guide contained a discussion on how switching to pure LRIC would reduce on-net/off-net differentiation among MNOs, and this would reduce the ability for large operators to use low on-net prices relative to high termination rates to generate tariff-mediated network effects⁶⁸. Tariff-mediated network effects increase the barriers to entry and expansion for new entrants and smaller rivals.

6.7.2 Vodacom comments that because net interconnection revenues [REDACTED], there is a 'lack of materiality' arising from termination rates, inferring from this that termination rates have no or only a minimal impact on competition⁶⁹. In a similar vein, Vodacom suggests that data services are now a more important driver of competition⁷⁰. Cell C on the other hand emphasizes the impact of the termination rate on competition, suggesting that termination rates during the 2010 and 2014 processes were not sufficiently pro-competitive⁷¹. Cell C also comments that on-net discounts are used by incumbents to constrain the growth of smaller rivals, entrenching the incumbents' first-mover advantage⁷². Cell C proposes that the asymmetry in the 2018 process was pro-competitive, arguing that LRAIC+ and asymmetry should be continued in the current process⁷³. Furthermore, the use of OTT services will reduce circuit-switched volumes, and 'amplify the

⁶⁷ Hawthorne, R., & Grzybowski, L. (2021), cited above.

⁶⁸ Laffont, J. J., Rey, P., & Tirole, J. (1998). *Network competition: II. Price discrimination*. The RAND Journal of Economics, 38-56.

⁶⁹ Vodacom page 15, [REDACTED].

⁷⁰ Vodacom page 13.

⁷¹ See, for example, Cell C paragraph 17 and paragraph 25.

⁷² See paragraph 24.

⁷³ Paragraphs 26-30, and 41.

dominance of the large operators⁷⁴. Telkom similarly links termination rates to competition, commenting that regulators have found that setting termination rates above pure LRIC harm competition, unless asymmetry is applied⁷⁵. While Telkom is in favour of pure LRIC or zero termination rates, Cell C says ICASA has not sufficiently analysed the implications of pure LRIC, including taking to account calling patterns between licensees, which Cell C considers are not balanced between licensees⁷⁶. Telkom also comments on the impact of OTT volumes on reducing fixed line volumes (in addition to the switch to mobile)⁷⁷.

6.7.3 As explained in Section 2.7, the question of asymmetry is before the courts, and the merits of this are therefore not commented on here. As also explained in Section 2.7, even if the Authority had the discretion to apply asymmetry, this would no longer really be needed since pure LRIC achieves the pro-competitive goals that Cell C seeks to achieve, as Telkom explains. While LRIC+ limits the harm to smaller rivals arising from high termination rates, as Acacia mentions in the asymmetry litigation (Vodacom incorrectly suggests this undermines the proposal in the Authority's Proposed Modelling Guide to move to pure LRIC⁷⁸), implementing pure LRIC will help further achieve pro-competitive outcomes, for the reasons explained below.

6.7.4 It is possible that increasing use of OTT services will result in flat or even declining traditional voice volumes (including call termination volumes), reducing the role that traditional voice plays over time in investment in mobile networks, and ultimately on competition. It is not clear precisely how this will entrench the market power enjoyed by MTN and Vodacom, however, as Cell C suggests. In any event, currently, traditional voice service volumes are growing⁷⁹ and remain a significant source of

⁷⁴ Cell C submission, Paragraph 7.

⁷⁵ Telkom submission page 5.

⁷⁶ Cell C paragraphs 31-32.

⁷⁷ Telkom submission section 1.2.

⁷⁸ Vodacom submission, page 19.

⁷⁹ See the Authority's findings document in government gazette 46107, paragraph 4.3.1.1.8.2

revenues for network operators⁸⁰, and therefore continue to affect competition.

6.7.5 Cell C is correct that on-net discounts by the large operators persist to the present day, and these likely have a material impact on competition. The fact that on-net discounts below termination rates offered by MTN and Vodacom persist to this day also shows how termination rates are well above costs, since on-net retail prices involve origination and termination, and may also include the recovery of joint and common costs that Vodacom raises concerns on above, described above in Section 6.5.

6.7.6 MTN and Vodacom's on-net discounts can be illustrated by considering the Authority's bi-annual tariffs analysis report⁸¹ compared to their termination rates set at R0.09 per minute since October 2020⁸²:

6.7.6.1 MTN has three on-net bundles below the termination rate:⁸³

6.7.6.1.1 Daily R10 (120 minutes), effective on-net tariff of R0.08 per minute.

6.7.6.1.2 Daily R15 (180 minutes), effective on-net tariff of R0.08 per minute.

6.7.6.1.3 Monthly R300 (3500 minutes), effective on-net tariff of R0.07 per minute.

6.7.6.2 MTN has a further 6 on-net bundles that are R0.11 or less, which imply prices for each leg of the call, being origination and termination, of R0.055 or less, again well below the termination rate of R0.09.

⁸⁰ For instance, in Vodacom's most recent financial year 2023 annual report, it documents that: '**Our core mobile services – data and voice – remain our primary revenue generator** and continue to be supported by the uptake of smart devices, expanded network coverage and data bundles becoming increasingly more affordable.' See p 33. Available at: <https://vodacom-reports.co.za/integrated-reports/ir-2023/documents/vodacom-group-limited-integrated-report-2023-singles.pdf>

⁸¹ See: <https://www.icasa.org.za/uploads/files/Bi-Annual-Tariffs-Analysis-Report-Q4-2022-23.pdf>

⁸² See: <https://www.icasa.org.za/news/2018/icasa-to-publish-final-call-termination-regulations#:~:text=where%20a%20charge%20for%20terminating%20a%20call%20at%20a%20mobile,c%20from%20October%202020%20onwards.>

⁸³ See Table 17 in ICASA bi-annual tariffs analysis report.

6.7.6.3 Similarly, Vodacom has several packages that are below the termination rate or that illustrate how the termination rate is well above its costs:

6.7.6.3.1 The Zetnet package has a daily 60-minute voice bundle for R5⁸⁴, an effective tariff of R0.083 per minute. Again, this is below the termination rate of R0.09 per minute, despite there being two legs to the call on the Vodacom network.

6.7.6.3.2 The Power Hour package offers 60 minutes for R8⁸⁵, an effective tariff of R0.133, for originating and terminating a call on the Vodacom network, i.e. at an implied price of R0.067 per minute, again well below the termination rate of R0.09.

6.7.6.4 Even though Vodacom may have an 'any network' voice tariff on all of its contract and prepaid tariffs⁸⁶, Vodacom continues to offer substantial on-net discounts.

6.7.7 These on-net discounts illustrate two facts:

6.7.7.1 First, the large incumbent operators, MTN and Vodacom, continue to offer on-net discounts below termination rates. These have the effect of driving tariff-mediated network effects, as explained in the Authority's Proposed Modelling Guide and as set out in the Cell C submission. This entrenches MTN and Vodacom's market position, as Cell C explains.

6.7.7.2 Second, MTN and Vodacom's current termination rates are well above costs since they are able to charge less for not one leg of a call (termination) but two (origination and termination).

6.7.8 The anti-competitive effects of high-termination rates and low on-net discounts were also illustrated in the Authority's discussion document during the mobile broadband inquiry process⁸⁷. There, the Authority considered the following:

⁸⁴ See Table 22.

⁸⁵ See: <https://www.vodacom.co.za/vodacom/shopping/plans/power-hour>

⁸⁶ See Vodacom submission, page 19.

⁸⁷ See: <https://www.icasa.org.za/legislation-and-regulations/discussion-document-on-the-market-inquiry-into-mobile-broadband-services>

- 6.7.8.1 *[Paragraph 69] Markets for mobile voice and data services are ineffectively competitive for the reasons described above. Nonetheless, it may be that one of the reasons for the ineffective competition is related to problems in markets for voice services, such as on-net prices that are similar to or lower than termination rates, generating 'tariff-mediated network effects'. This means that consumers prefer larger networks in general, and networks that their friends, family and work colleagues belong to, in order to benefit from on-net discounts[30]⁸⁸. There may also be significant switching costs where voice services are concerned, particularly if there are weaknesses in the ease of number porting. Tariff-mediated network effects and switching costs in turn can result in significant advantages to being a first-mover in markets for mobile services, since once a customer is won, the customer is reluctant to leave.*
- 6.7.8.2 *[Paragraph 70] This suggests that voice services may play an important role in market outcomes where retail mobile services are concerned. Therefore, remedies affecting retail voice service, such as mobile termination rate regulation and number portability, are likely important interventions where markets for mobile services are concerned.*
- 6.7.9 The findings of the mobile broadband inquiry also showed how a number of markets are ineffectively competitive in South Africa, and that MTN and Vodacom are dominant in a number of markets.⁸⁹ Similar findings were echoed in the Competition Commission's data services market inquiry⁹⁰. Cell C and Telkom are thus correct to raise concerns about the lack of effective competition in markets for mobile services in South Africa, as well as the competitive effects of high termination rates.

⁸⁸ Footnote 30 in the discussion document: "In relation to household network effects in mobile telephony in South Africa, see: Grzybowski, L. (2015). *The role of network effects and consumer heterogeneity in the adoption of mobile phones: Evidence from South Africa*. *Telecommunications Policy*, 39(11), 933-943. On tariff-mediated network effects and the role of mobile termination rates in South Africa, see: Hawthorne, R. (2018). *The effects of lower mobile termination rates in South Africa*. *Telecommunications Policy*, 42(5), 374-385."

⁸⁹ See: <https://www.icasa.org.za/legislation-and-regulations/findings-document-on-mobile-broadband-services-inquiry>

⁹⁰ See: <https://www.compcom.co.za/wp-content/uploads/2019/12/DSMI-Non-Confidential-Report-002.pdf>

- 6.7.10 Furthermore, it is important to note that economic research in South Africa⁹¹ explains how the difference between on-net and off-net tariffs narrows with lower termination rates in South Africa, and thus pure LRIC, by resulting in lower termination rates, is likely to narrow the difference between on-net and off-net tariffs, and thus reduce their anti-competitive effects. While the change to symmetry supports this, as Vodacom points out⁹², implementing pure LRIC will also facilitate this.
- 6.7.11 For all of the above reasons, pure LRIC is likely to have pro-competitive effects. This is supportive not only of Section 2(f) of the ECA (promotion of competition) but also 2(z), which concerns the promotion of stability, since the growth of smaller rivals is likely to limit the risk of their exit from the market.

6.8 International experience and the South African context

- 6.8.1 The Authority's Proposed Modelling Guide showed that the trend in respect of regulating termination rates is towards pure LRIC or zero. For example:
- 6.8.1.1 The East Africa Regulatory, Postal and Telecommunications Organization in 2008 issued guidelines to East African community members to adopt the pure LRIC method when setting MTRs.⁹³
- 6.8.1.2 A number of countries already have zero termination rates, including Canada, Hong Kong, India, Singapore, and the United States.⁹⁴
- 6.8.2 Vodacom commented that international precedent and the South African context do not favour implementing pure LRIC in South Africa, explaining that many African countries do not apply pure LRIC, and that South Africa has a lower population density, a greater proportion of people living in rural areas, and people have lower incomes, than in the European Union

⁹¹ Hawthorne, R. (2018). The effects of lower mobile termination rates in South Africa. *Telecommunications Policy*, 42(5), 374-385.

⁹² Page 19.

⁹³ Research Africa (2009, June 15). Namibian Interconnection Benchmarking Study. Public Final Report. Available [here](#).

⁹⁴ These countries utilise the Bill and Keep (BAK) charging regime. Under this charging regime there are no per minute charges levied between interconnected operators for the exchange of traffic.

where pure LRIC was implemented in around 2009⁹⁵. Furthermore, Vodacom considers that even the European Union currently applies a maximum charge for all countries that ultimately permits prices higher than pure LRIC. Vodacom also reflect on a discussion in the European Union that there is a substantial information requirement to implement pure LRIC, and there is a greater risk that pure LRIC will result in too low a rate, which is more harmful than setting a rate that is too high, due to the impact on investment. Cell C raised concerns that the discussion in the Authority's Proposed Modelling Guide was too favoured towards the international experience⁹⁶. Furthermore, Cell C comments that parameters developed for South Africa ought to be used in the modelling exercise⁹⁷.

6.8.3 In respect of the comment regarding the use of international experience by Cell C, the Authority's Proposed Modelling Guide contained references to research on the local South African context, and the local context has been expanded on significantly above. In relation to the use of modelling parameters used in the 2018 process, these will be considered during the present modelling process.

6.8.4 There are a number of flaws in Vodacom's comments about international precedent in the use of pure LRIC:

6.8.4.1 First, Vodacom's suggestion that a number of African countries do not currently apply pure LRIC ignores the fact that there is a push towards using pure LRIC. As explained above, the East Africa Regulatory, Postal and Telecommunications Organization proposed pure LRIC in 2008. In 2009, Research ICT Africa carried out an interconnection benchmark study in Namibia and concluded that pure LRIC is the most appropriate approach to determine interconnection rates.⁹⁸ This approach is shared by the Communications Commission of Kenya which, in a recent review of its interconnection regime, chose to continue to use pure LRIC to set

⁹⁵ See Vodacom submission sections C3 and C7.

⁹⁶ Cell C paragraph 31.

⁹⁷ Cell C paragraphs 80-83.

⁹⁸ Research Africa (2009, June 15). Namibian Interconnection Benchmarking Study. Public Final Report. Available [here](#).

termination rates. An analysis of these two markets showed that setting termination rates to that of an efficient operator resulted in lower retail prices and an expansion in the number of subscribers⁹⁹.

- 6.8.4.2 Second, regarding Vodacom's comments that the context in which the EU produced its 2009 Recommendation was very different from South Africa's current context, as average MTRs in the EU were higher, the gap between fixed and mobile termination rates was significant, and termination revenues accounted for a greater portion of revenues: Suggesting that MTRs were even more problematic in the EU when it made its decision, whether from the perspective of the level of the rates, the gap between fixed and mobile rates, or the proportion of revenues accounted for by call termination, does not mean that a problematic MTR in South Africa should not be reduced. Reducing termination rates in South Africa by implementing pure LRIC is important for the range of economic efficiency, distributional effects, and competition effects described above, even if South Africa has made significant strides over time in reducing termination rates compared to the situation in the EU in 2009.
- 6.8.4.3 Third, regarding Vodacom's concerns over the granularity of information required for the pure LRIC model and the risk that this might pose in setting termination rates that are too low: the risks to investment and to consumers in South Africa are very low, if they exist at all, for the reasons explained above in Sections 6.5 and 6.6.
- 6.8.4.4 Fourth, Vodacom's comments that the EU's new single maximum MTR of 0.2 Euro cents is in practice above the pure LRIC of most EU countries fails to note that this is significantly below the simple average rate across the Union of 0.677 Euro cents.¹⁰⁰ Furthermore, the EU continues to stress the importance of setting low termination rates as high termination rates would lead to anti-competitive outcomes, such as higher retail prices and higher barriers to entry and expansion by

⁹⁹ Stork, C. (2012). Mobile Termination Rate Debate in Africa. Available [here](#)

¹⁰⁰ COMMISSION DELEGATED REGULATION (EU) .../... supplementing Directive (EU) 2018/1972 of the European Parliament and of the Council by setting a single maximum Union-wide mobile voice termination rate and a single maximum Union-wide fixed voice termination rate.

smaller operators¹⁰¹. They also point out that in the case of the EU, unjustified differences in termination rates among member states distorts investment incentives and creates trade barriers within the internal market. There are thus different reasons for setting one maximum rate, that happens to be above pure LRIC in many member states, in the EU, that do not apply to South Africa.

6.8.4.5 Fifth, Vodacom’s comment that the pure LRIC method is not appropriate for South Africa due to its different characteristics compared with EU member states, is not a reasonable analysis. Table 1 shows a number of countries with varying characteristics that have very low and even zero mobile termination rates.¹⁰² India recently set its MTR at zero while having a significantly larger rural population, lower GDP per capita and relatively similar fixed services penetration to South Africa. Kenya has a far greater proportion of people living in rural areas and has a lower GDP per capita than South Africa, and is nonetheless implementing pure LRIC. Therefore, differences in country characteristics between South Africa and the EU do not justify the use of LRIC+.

Table 1: Comparison of country characteristics

	Year	South Africa	Kenya	India	Singapore	United States	Canada	Hong Kong
Population density*	2020	48	91	470	7 919	36	4	7 125
Land area (km2)*	2020	1 213 090	569 140	2 973 190	718	9 147 420	8 965 590	1 050
Rural population (% of total population)*	2022	32	71	64	-	17	18	-
GDP per capita (US\$)*	2022	6 776	2 099	2 389	82 808	76 399	54 966	48 984
GINI index*	2014-2021	63 (2014)	40.8 (2015)	35.7 (2019)	-	39.7 (2020)	32.5 (2018)	-
Mobile-cellular subscriptions (per 100 people)**	2022	167.40	121.67	80.65	156.48	110.17	91.23	291.91
Active mobile-broadband subscriptions (per 100 people)**	2022	135.06	59.02	56.47	156.48	173.52	86.45	157.95
Residential fixed telephone lines per 100 households**	2021	3.31	-	5.50	90.73	33.58	48.63	78.30

¹⁰¹ Ibid

¹⁰² India, Singapore, United States, Canada and Hong Kong make use of the Bill and Keep method. Under this charging regime there are no per minute charges levied between interconnected operators for the exchange of traffic.

	Year	South Africa	Kenya	India	Singapore	United States	Canada	Hong Kong
Fixed-broadband subscriptions (per 100 people)**	2022	3.25	1.48	2.36	37.36	37.58	43.08	39.83
Mobile-cellular subscriptions: Prepaid (% of population)***	2021	151%	120%	77%	38%	17%	10%	196%

*Source: The year of the GINI index is in brackets. * World Bank World Development indicators, **ITU DataHub, ***Number of prepaid mobile subscribers from the ITU, expressed as a percentage of the World Bank's population figures.*

6.8.5 The international experience, therefore, if anything, suggests there is a trend towards lower termination rates, being either pure LRIC or zero. South Africa's characteristics do not put it in a different category that suggests that pure LRIC should not be adopted. Rather, it is likely that lower termination rates will improve economic efficiency, improve outcomes for low-income consumers, and result in increased competition, in South Africa, for the reasons explained above.

6.9 Cost method choice, depreciation method, and impact on information requirements and model complexity / transparency

6.9.1 As explained in the Authority's Proposed Modelling Guide, the tilted annuity approach results in higher initial prices due to lower initial volumes, and front-loads revenues over time, which does not approximate a price in a competitive market.¹⁰³ The economic depreciation method results in a more sensible tariff profile. It does have greater information requirements, since economic depreciation considers the life of the business, and thus requires many years of data (20-years under the approach proposed in the modelling guide). The choice of depreciation method is thus linked to the modelling complexity and information requirements. Vodacom also comments that the use of pure

¹⁰³ Hotelling proposed economic depreciation precisely to solve the problem of considering not only costs over time, but volumes, in 1925. Hotelling, H. (1925). A general mathematical theory of depreciation. Journal of the American Statistical Association, 20(151), 340-353.

LRIC requires the application of economic depreciation¹⁰⁴, and so the choice of costing method and the depreciation method are also connected.

6.9.2 Cell C suggests that the Authority must explain why it proposes moving towards economic depreciation, though it does not advocate for using the tilted annuity method.¹⁰⁵ Cell C does suggest modelling economic depreciation at the level of individual assets, so that price trends can be more accurately captured.¹⁰⁶ It also points out differences in the approaches to economic depreciation applied by ComReg and in the draft shell model.¹⁰⁷ Cell C also comments that additional aspects of the model will be needed to accommodate small and large operators, roaming also needs to be captured, and assumptions from the 2018 process ought to be used.¹⁰⁸ MTN considered that economic depreciation is reasonable in principle though its information requirements might be too onerous, which 'may advocate for' a simpler method.¹⁰⁹ At the same time, MTN continues to raise concerns about the information burden involved with the process.¹¹⁰ Vodacom proposes continuing to use the 2017/2018 LRAIC+ approach, including applying the tilted annuity method.¹¹¹ Vodacom comments that pure LRIC requires the use of economic depreciation, which results in considerable modelling complexity, and the detail required to identify the cost effects of removing terminating tariff would be significant given the complexity of its network, illustrated by the variation in traffic across its sites, for example.¹¹² If pure LRIC is to be applied, MTN and Vodacom comment that a more granular BU model

¹⁰⁴ Vodacom submission, page 25.

¹⁰⁵ Cell C submission, paragraph 82.

¹⁰⁶ See Cell C paragraph 65-67.

¹⁰⁷ See Cell C paragraphs 68-71.

¹⁰⁸ See Cell C paragraphs 72-83.

¹⁰⁹ MTN submission, paragraph 3.8.3.

¹¹⁰ MTN paragraphs 1.3 and 1.4.

¹¹¹ Section A4 of the Vodacom submission, page 8.

¹¹² Page 25.

is needed.¹¹³ Vodacom¹¹⁴ and MTN¹¹⁵ provided a range of submissions on what factors ought to be taken into account when developing such a model. At the same time, Vodacom raises concerns about the burden of repeated reviews of the cost models.¹¹⁶ They also raise concerns about transparency in modelling pure BU LRIC models.¹¹⁷ Telkom also proposes continuing to use the economic depreciation method, given a dynamic technological environment, and 'highly uncertain and dynamic macro and microenvironments'.¹¹⁸ Telkom raises concerns that the level of data required in the current BU model and questionnaires are too granular.¹¹⁹

6.9.3 There are therefore different views on:

- Whether to apply economic depreciation or not.
- The level of granularity needed to determine termination costs.

6.9.4 Given the benefits of pure BU LRIC explained above and considering that BU-LRIC models typically apply economic depreciation, it makes sense to apply the economic depreciation approach. At the same time, a balance needs to be struck between the information burden on licensees and developing a sufficiently granular model to reasonably identify costs. This balance can be achieved, since:

6.9.4.1 Such models have been applied in many countries previously and indeed stakeholders have pointed out how the current shell models might be expanded to model BU-LRIC,

6.9.4.2 Given the substantial resources available to licensees, and

6.9.4.3 the fact that licensees have recently developed 20-year business cases as one of the requirements for participation in the recent spectrum auction.

¹¹³ Vodacom submission Section D2, MTN paragraph 3.1.1.

¹¹⁴ Vodacom pages 26-42.

¹¹⁵ MTN Section 3.

¹¹⁶ Vodacom, paragraph Section A3.

¹¹⁷ Vodacom response, Part B.

¹¹⁸ Telkom submission, Section 1.4.

¹¹⁹ Telkom submission, page 2.

- 6.9.5 At the same time, when the models are developed, care will be taken to ensure that the information burden on licensees will be kept to the minimum needed to inform the cost modelling process. This includes, for instance, consider stakeholder internal modelling, as Telkom requests.¹²⁰
- 6.9.6 Stakeholders will not be required to provide information not relevant to the proposed pure LRIC approach. TD information to be requested will follow a sense-check approach, derived from a TD questionnaire, on for instance the number of sites built by geotype, actual network operating expenditure, assets, and the like. In that case, Vodacom's suggestion in respect of using the Authority's previous TD model using its own updated information will not be relevant.¹²¹
- 6.9.7 In addition, and linked to limiting the information burden on licensees, there is a balance to be struck between providing for a sufficiently granular model and ensuring that the model is transparent to stakeholders. The more granular the model grows, the more complex it becomes, and the less transparent it becomes. The Authority will thus carefully weigh the requirement for a sufficiently granular model with the need for the transparency afforded by simplicity. This will also ensure that the modelling process is not unduly burdensome on licensees.
- 6.9.8 Limiting the information burden on licensees will promote objective 2(y) of the ECA not to unduly interfere in the commercial activities of licensees

6.10 **Summary on Methodology**

- 6.10.1 Termination rates set at pure LRIC are likely to promote competition, investment and low prices for consumers, for the reasons explained above. A brief summary of the reasons for this are as follows:
- 6.10.1.1 First, there have been a number of changes in market conditions that mean that the methodology that the Authority applies to setting termination ought to change to the pure-LRIC methodology:

¹²⁰ Section 1.2 and 1.3 of Telkom's submission.

¹²¹ Section A4 of Vodacom submission.

- 6.10.1.1.1 In particular, Telkom and Cell C are no longer new entrants, which means that asymmetry in their favour needs to be removed. In order to promote competition in the absence of asymmetric termination rates and in the presence of low on-net prices that are below termination rates, lower termination rates applying the pure LRIC standard are needed.
- 6.10.1.1.2 In addition, there has been a substantial decrease in termination rates and increase in call volumes that has not given rise to any of the negative possible effects, such as the waterbed effect resulting in disconnections, or lower investment and reduced coverage, that would have made the Authority circumspect historically. This means that applying LRIC+ is no longer proportionate, since any potential harm from lower termination rates has not arisen, and the harm to competition and consumers from applying LRIC+ would continue.
- 6.10.1.1.3 Furthermore, there has been substantial growth in OTT services which stakeholders have commented on. Their success in the absence of termination rates or any charges to consumers is a relevant consideration where the choice of costing methodology for traditional termination rates is concerned. Applying pure-LRIC, which is closer to marginal costs and will likely result in higher usage volumes, will help bring traditional voice services closer to the business model used in OTT services, assisting in the growth of traditional voice services.
- 6.10.1.1.4 Another change in market conditions is the massive growth in data services, which means there is less justification to charge high termination rates on the basis of recovering joint and common costs from voice services. There is also less risk of any waterbed effect or risk to investment, arising from low termination rates. This means that a lower termination rate, such as that which would arise under pure LRIC, is proportionate, given the beneficial effects of this for competition and consumers.
- 6.10.1.2 Second, pure LRIC will result in lower termination rates, bringing rates closer to marginal cost, resulting in greater volumes of voice minutes

being consumed than under the current regime. This promotes allocative efficiency.

6.10.1.3 Third, pure LRIC is unlikely to harm investment based on the experience with implementing it in other countries, and the experience in South Africa where lower termination rates did not result in lower coverage or lower investment. On the contrary, it is likely that a more level playing field is more likely to promote investment, by challenger and incumbent networks alike.

6.10.1.4 Fourth, low-income consumers will likely benefit from being able to make more voice calls and receive more voice calls as a result of lower termination rates, as has been the case over time in South Africa. Economic research in South Africa suggests that low-income consumers benefit from increased consumer surplus as a result of lower termination rates.

6.10.1.5 Fifth, persistent on-net discounts below termination rates by MTN and Vodacom show two facts:

6.10.1.5.1 Call termination rates are well above cost in South Africa, and

6.10.1.5.2 The first-mover incumbent networks are still able to use on-net discounts to drive tariff-mediated network effects, entrenching their positions.

Both facts mean that lower termination rates, i.e. applying pure LRIC, are needed in South Africa.

6.10.1.6 Sixth, pure LRIC has been applied in many other countries, including in Africa. In fact, even lower termination rates at zero are currently applied in a number of countries, including developing countries like India. Pure LRIC is thus a reasonable methodology applied by reasonable regulators.

6.10.2 In addition, pure LRIC models often apply the economic depreciation method, which also leads to smoother termination rates over time, and does not front-load revenue recovery, as tilted annuities do. Economic depreciation is therefore a reasonable approach to apply in South Africa.

6.10.3 The links between the analysis in this report and relevant objectives in the ECA.

Objective in the ECA	Comment on objective
<i>(b) promote and facilitate the development of interoperable and interconnected electronic networks, the provision of the services contemplated in the Act and to create a technologically neutral licencing framework</i>	Termination rates set at pure LRIC will likely result in greater volumes of traffic flowing over interconnection links, thus promoting interconnected electronic networks. These volumes are currently sub-optimal, given the on-net discounts described in Section 6.7.
<i>(d) encourage investment, including strategic infrastructure investment, and innovation in the communications sector</i>	Lower termination rates set at pure LRIC are likely to promote investments by challenger networks, and in response, incumbents too, as explained in Section 6.5.3.
<i>(f) promote competition within the ICT sector;</i>	Lower termination rates are likely to assist smaller rival networks in South Africa, and prompt consequent competitive responses from incumbents, thus promoting competition, as explained in Section 6.7.
<i>(m) ensure the provision of a variety of quality electronic communications services at reasonable prices;</i>	Economic research on the impact of lower termination rates in South Africa and other countries shows how they result in lower retail prices, to the benefit of consumers, as explained in Section 6.5.2 and 6.6.
<i>(n) promote the interests of consumers with regard to the price, quality and the variety of electronic communications services;</i>	

Objective in the ECA	Comment on objective
<i>(y) refrain from undue interference in the commercial activities of licencees while taking into account the electronic communication needs of the public;</i>	The information burden on licensees is considered in Section 6.9. As explained there, the information to be requested from licensees will be kept to a minimum.
<i>(z) promote stability in the ICT sector.</i>	As explained in Section 6.7, by promoting the expansion of smaller rivals, lower termination rates reduce the risk of their exit, thus promoting stability in the sector.



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7 Responses to stakeholder comments on methodology

Stakeholder comments insofar as they relate to process and costing methodology, and references to where these comments were considered in this document, are provided in the tables that follow. Comments that summarise the Authority's various documents are not replicated here so as to not make this document unwieldy. Detailed comments on the shell models and questionnaires, and responses to those comments, such as on geotypes, RAN parameters, core network parameters, WACC, the implementation of economic depreciation, and the like, will be provided at a later stage once the Authority has further refined the pure LRIC models.

7.1 Cell C

Comment	Considered:
1. Cell C Limited ("Cell C") is grateful for the opportunity provided by Independent Communications Authority of South Africa ("ICASA") to make submissions in the ongoing call termination rate ("CTR") review. In this regard, Cell C makes this submission to ICASA on the overall modelling approach and other related issues. Our collection of the data requested by ICASA remains ongoing for delivery in September 2023 as requested.	Section 5

Comment	Considered:
<p>2. Cell C believes that ICASA’s proposed approach to regulating call termination rates will lead to significant detrimental impacts for Cell C and other similarly situated or smaller licenced operators including new mobile voice challenger licensees (“smaller operators”), which will in turn lead to negative impacts on the effectiveness and competitiveness of the mobile market for consumers in South Africa.</p>	<p>Section 6.7.</p>
<p>3. ICASA’s plan to apply the same, symmetrical rates to Cell C and the two larger operators Vodacom and MTN, fails to recognise the long-standing realities of the market and its two dominant players. Because of the entrenched large market share of approx. 80% held by both, Vodacom and MTN have for many years enjoyed on-net calling advantages which Cell C and other smaller operators are simply unable to replicate. This has led to a market structure which has not fundamentally improved in the past decade. There is no effective competition between the players in the market, and challenger operators such as Cell C cannot effectively target those call volumes, customer groups or segments of the market which are entrenched within the large operators. Put simply, symmetrical termination rates do not correspond with the highly asymmetrical market in evidence today.</p>	<p>Section 3 and 6.7.</p>
<p>4. Consequently, Cell C finds itself only able to target and gain a share in a small portion of the market, and has achieved substantially less than ICASA’s target of a small operator operating at a minimum efficient scale of 20% market share [1]. The entrenched and static nature of the market shares of the two large players demonstrates that the competitive landscape has not improved and ICASA’s interventions in what is intended to be pro-competitive measures have not been strong or broad enough. ICASA’s application of asymmetry in call termination rates in the past has been one of those intended interventions, but in Cell C’s opinion, the</p>	

Comment	Considered:
<p>implementation of call termination rate regulation has not sufficiently reflected the cost and market asymmetries between large and small players, and has not effectively addressed any part of the market dominance of Vodacom and MTN.</p>	
<p>5. Alongside voice, Cell C must also compete in the mobile data market – itself the subject of a major inquiry in 2019 by the Competition Commission. The growth of data traffic makes the market challenges faced by Cell C extremely difficult to overcome. Due to higher frequency spectrum needing more sites for coverage, and higher cost (high-demand) spectrum, the differences in economies of scale of the players in the market become even more pronounced than in the voice market. As part of its inquiry, the Competition Commission came to the view that the market has two dominant operators, Vodacom and MTN, and that the retail mobile market is “stubbornly concentrated”, i.e. entrenched. Furthermore, the Competition Commission added that Vodacom certainly (and MTN borderline possibly) has a market share in mobile services which for many years exceeds the threshold for a conclusive determination of dominance [2]. ICASA cannot ignore these findings as they evidently apply to the broader market in which ICASA seeks to apply its wholesale call termination regulations.</p>	
<p>6. Cell C urges ICASA to consider pro-competitive, and importantly pro-small operator, regulatory mechanisms which reflect the significant differences between smaller operators such as Cell C, and larger operators Vodacom and MTN. Such differences include the long-standing market shares significantly less than 20%, demonstrably higher unit costs of traffic faced by small operators, the needs for smaller operators to</p>	

Comment	Considered:
<p>match the coverage of large operators, and greater reliance on roaming as an unavoidable network input cost.</p>	
<p>7. VoIP and OTT services will introduce a shift in the use of the traditional circuit switched voice as compared to packet switched voice. This will negatively impact the voice termination market whereby the data used for packet-switched voice increases which contributes to losses in the traditional circuit-switched voice call market. We believe that this will amplify the dominance of the large players over smaller operators.</p>	
<p>8. Applying symmetric call termination rates on Cell C and large operators Vodacom and MTN will further entrench the large market shares of Vodacom and MTN to the benefit of their shareholders, while significantly disadvantaging Cell C as a smaller operator with higher unit costs. Symmetric call termination rates will reinforce the market failure and lessen competition, to the detriment of consumers. Symmetric call termination rates would also, in Cell C's opinion, go against the objectives set out in the Competition Commissions' Data Services Market Inquiry, where enhancing price-based mobile competition³ is needed to improve outcomes for consumers (including cost plus fair return for access to facilities), alongside the recommendation for enhancing ICASA's regulatory mechanisms⁴.</p>	
<p>9. As a result, Cell C urges ICASA to recognise the importance of call termination rates between operators and smaller operators as a key regulatory mechanism in the market to address the broader competitive market failure in the South African mobile market. Cell C urges ICASA to continue to apply asymmetric</p>	

Comment	Considered:
<p>termination rates between Vodacom/MTN and Cell C, for another 3-4 year period, reflecting Cell C's materially higher unit cost and long-standing lower market share circumstances evident in the market.</p>	
<p>10. Cell C was the first operator to promote and proactively support the on boarding of MVNO's in order to foster continued market competition. In addition, Cell C has been very deliberate in pricing constructs and product propositions in improving affordability to customers over the years.</p>	
<p>13. Whilst we reserve the right to comment in the future on aspects within the models and documents that we have not yet raised in this submission (especially given that the models provided thus far are only shells populated with placeholder values), Cell C are nonetheless in a position to provide important feedback on the following broad issues within ICASA's process as a whole:</p> <p>13.1. ICASA's apparent refusal to recognise the continued market failures in the mobile sector in South Africa</p> <p>13.2. need for continued asymmetry for smaller operators like Cell C</p> <p>13.3. ICASA's overall approach to the CTR review</p> <p>13.4. issues identified in the cost model shells published thus far.</p>	
<p>17. Cell C has (repeatedly) emphasised to ICASA over the past decade that the 2014 CTR process was massively flawed, both in modelling approach and in the pricing approach. Whilst ICASA claimed the approach was 'pro-competitive' in 2014 (i.e. allowing the small operator a higher termination rate based on the efficient cost of a small operator), the measure was in fact 'pro-large operator'. This bias arose because:</p>	

Comment	Considered:
<p>17.1. large operators were given a glide path above their efficient cost</p> <p>17.2. a conservative growth forecast was assumed for the large operators, which they easily exceeded;</p> <p>17.3. a substantial forecast in subscribers and traffic was assumed for the small operators which was impossible to achieve.</p>	
<p>18. The large operators were forecast to achieve only modest traffic growth, whilst the small operators were forecast to grow substantially. Therefore, as Cell C has repeatedly explained to ICASA, Cell C under-recovered in that period.</p>	
<p>19. The 2014 process is a clear example of how the implementation of a principle is just as important as the principle itself. Whilst a LRIC-plus pricing approach with asymmetric rates was meant to be pro-competitive in theory, in practice the flawed implementation of the modelling underpinning the pricing was in fact pro-large operator.</p>	
<p>20. In the current CTR process, ICASA are proposing a symmetric pricing approach. ICASA are presenting this as a pro-competitive approach in an effectively competitive market, as has been the experience in other jurisdictions (in particular, the European Union (EU) Member States). However, the South African mobile market does not function nearly as well as those in the EU and this is the fundamental flaw in ICASA's reasoning. Symmetric pricing of call termination rates will not be a pro-competitive remedy in South Africa since the South African mobile market is not effectively competitive.</p>	

Comment	Considered:
21. Cell C note that ICASA is subject to an ongoing legal appeal on the 2022 findings document.	
22. South Africa has had a persistently ill-functioning mobile market structure in both the wider and more narrow markets for as long as Cell C has been in existence. Vodacom and MTN remain by far the two well-established operators with significant market shares (consistently in excess of 70% of subscribers combined, as shown below). The other two operators, Cell C (third entrant) and Telkom Mobile (fourth entrant), have been in the market for more than a decade, but still remain unable to achieve the scale of the incumbents due to the continuing market failures. As can be seen in the chart below, it appears that the third and fourth operators are competing with each other for scale, with the top two operators retaining their combined market share in their “entrenched duopoly”.	
23. Cell C would also emphasise that, whilst Telkom’s market share has grown recently, it remains significantly smaller than Vodacom/MTN. Telkom’s growth will have been significantly supported through the benefits of scale and scope it gains from its dominant incumbent fixed business. These benefits include (i) extensive use of its fixed infrastructure in its mobile network deployment, (ii) common/overhead cost synergies with its fixed business and (iii) competitive fixed-mobile bundle pricing it can offer, including ‘on-net’ fixed-mobile and mobile-fixed calling. These are all benefits that Cell C cannot replicate.	
24. In the first nine years from Cell C’s launch in 2001, the market for call termination was unregulated. During this period, the incumbents used their first mover advantage and growing dominance to set termination rates substantially above their costs, which created a distorted competitive situation that curtailed	

Comment	Considered:
<p>22. Cell C's growth. This was combined with significant on-net/off-net price differentials in the retail market as a means to constrain the ability of small entrants and challengers to gain market share from the large players. Those price differentials persist today in parts of the retail market.</p>	
<p>25. In the first two regulatory interventions by ICASA in 2010 and 2014, ICASA failed to impose balanced, pro-competitive regulation, with poorly defined asymmetry rates. Cell C has frequently argued that the regulation was frequently more 'pro-large operator' than 'pro-competition'.</p>	
<p>26. The most recent (2018) CTR process, whilst not rectifying the broader market failures, was more balanced than the 2014 CTR process and more supportive of a pro-competitive and pro-challenger situation. This was because the glide paths were intended (to our understanding) to be entirely cost-based, starting at top-down costs of termination at different (large and small) scales in 2018 and ending at bottom-up costs of termination at different (large and small) scales in 2020. This process gave effect to the rationale of asymmetry, in reflecting that large and small operators have different levels of call termination cost.</p>	
<p>27. The implication of this overall process is that in 22 years of operation, Cell C has competed in a mobile market with effectively, only 4½ years of balanced, pro-competitive call termination regulation (those being the 4½ most recent years), having been implemented by ICASA. This is simply not enough time to address the historic imbalances in the industry, particularly since the industry has been rocked by ongoing economic stability. The governing statute for the sector, the ECA, which anticipated a series of pro-competitive measures to address the market imbalance, has been in effect 16 of the 22 years of Cell C's existence. It is</p>	

Comment	Considered:
<p>therefore with great concern to Cell C, that ICASA’s Discussion Document on CTR is now forging ahead with an unbalanced regulatory intervention, namely an abrupt move to symmetry.</p>	
<p>28. Paragraph 4.7.10.2 of the Findings document states that “The Authority has already granted small entrants asymmetry for twelve years, which is more than the recommended international best practice of three to four years.” This is the wrong perspective on two counts:</p> <p>28.1. Small operator asymmetry is of little pro-competitive benefit if the large entrant rate is not set in a pro-competitive way (in the 2010 and 2014 CTR processes, the large operator rate was set above the actual/efficient cost of a large operator)</p> <p>28.2. Whilst, three to four years of small operator asymmetry may be enough time for a pro-competitive asymmetric pricing remedy to work in other jurisdictions, in South Africa the anti-competitive effects of the past years take longer to be resolved given the entrenched positions of the two largest operators.</p>	
<p>29. As we have stated elsewhere in this response, ICASA seems to have set its mind on symmetry without any consideration for what evidence the results of the modelling process could actually produce in support of continued cost-based asymmetry for small operators versus large operators. This is reflected in the bottom-up model shells released thus far, which have very little consideration for modelling the costs of operators of different scale.</p>	
<p>30. Cell C is also of the strong view that LRAIC+ should be the costing approach used for asymmetric pricing for small operators, rather than pure LRIC. Cell C noted the framework used in ICASA’s guide documentation</p>	

Comment	Considered:
<p>7 released to assess the merits of pure LRIC. This framework was based on four criteria considered by Ofcom in 2009, namely (i) economic efficiency, (ii) distributional effects, (iii) competitive effects, and (iv) commercial and regulatory consequences.</p>	<p>Section 6.3 - 6.86.7.11.</p>
<p>31. However, the assessment in the guide documentation is only a very high-level consideration at best and (strangely) focuses more on other countries rather than the specific circumstances of South Africa. In particular, for criteria (iv), it is stated that “the commercial impact on individual licensees will depend on the calling patterns: licensees with balanced calling patterns will experience reductions in revenues as well as costs, and so reducing termination rates will have a neutral impact on overall profitability in this case”. However, ICASA are very much aware that calling patterns in South Africa are not balanced due to the entrenched duopoly present that Cell C has described to ICASA repeatedly over the last ten years. No presentation of an analysis of the call volumes to originated and terminated by operators in South Africa has been presented by ICASA.</p>	
<p>32. If ICASA wish to explore the merits of pure LRIC, then that is their prerogative. However, ICASA should actually undertake the analysis required, rather than just make assertions.</p>	
<p>35. However, at the very outset of its modelling process commencing in May 2023, ICASA released both a document justifying the use of (pure) LRIC and a bottom-up model of mobile networks that was only capable of calculating (pure) LRIC. Therefore, the message ICASA had undeniably sent to industry at that points was that it had already chosen its cost standard for pricing, without any prior engagement with industry.</p>	<p>Section 6.2.</p>

Comment	Considered:
<p>36. ICASA has indicated multiple times in the June 2023 clarification document that it has, in fact, not yet decided on the cost standard to be applied (or indeed, on other features of its modelling such as the depreciation approach).</p>	
<p>37. These declarations by ICASA must be sincere.</p>	
<p>38. It is essential that, after this unfortunate mis-step at the beginning of its modelling process, that ICASA make all its future cost modelling and pricing decisions based on careful, evidence-based reasoning tailored to the specific circumstances of the South African market, rather than rushing through the process to an ill-judged decision.</p>	
<p>39. Cell C also notes the revised timeline set out by ICASA. Whilst Cell C welcomes the far more adequate amount of time now provided for the data collection and top-down model population by stakeholders, Cell C notes that important future stages of the process appear to be getting compressed as a result. In particular, in the revised timetable, draft models are planned for release on 16 October, whilst submissions on the draft models are expected on 30 October. This will give stakeholders less than two weeks to review the models.</p>	Section 5.
<p>40. ICASA’s own experience from the previous CTR processes, most recently the 2018 process, will show that more than two weeks is required to review draft models given their complexity. ICASA should allow for four to six weeks of review time for any draft materials, with more time given especially for the first draft. Cell C therefore urges ICASA to revisit the later milestones in the CTR process and ensure adequate time is allowed</p>	

Comment	Considered:
<p>for each stage. This should be true for both industry review and ICASA preparation, since ICASA should not rush the process and attempt to “bulldoze” through the consultation responses without giving adequate consideration to arguments and evidence raised by stakeholders. If providing adequate time at all stages for all parties requires an extension of the timeline beyond the current planned end-date of 22/03/2024, then ICASA should do this without hesitation.</p>	
<p>41. Cell C also wants to strongly emphasise to ICASA that proper, separate modelling of large scale and small-scale operators must continue in this process, as was done last time. Considering different operator scales will be crucial to ICASA’s understanding of the structural issues facing the smaller operators in the South African mobile market, along with modelling of LRAIC and LRAIC+ results to understand the relative costs of different scale operators considering the substantial common costs of mobile (coverage) networks.</p>	Section 3.
<p>43. Finally, ICASA must ensure that it takes full account of the top-down models as submitted by industry stakeholders. These models are important to ICASA’s understanding of mobile costs in South Africa because they tell ICASA the real underlying costs of voice termination currently being experienced by other operators and how they differ between operators with large scale and small scale.</p>	
<p>55. Perhaps the largest omission in the bottom-up model is the lack of a calculation of the average incremental cost of termination. Cell C would refer to this costing approach as “LRAIC+” (long-run average incremental costs, with a mark-up for common business costs). This is the costing method that was used for pricing in</p>	Section 6.3 - 6.8.

Comment	Considered:
<p>the 2018 process (and in the 2014 process). Importantly, ICASA referred to this method as “LRIC+” in its 2022 Findings document.[10]</p>	
<p>56. Cell C notes there is various terminology in use by different authors, including (pure) LRIC, LRIC+, LRAIC and LRAIC+. Cell C’s interpretation is as follows:</p> <p>56.1. LRAIC and LRAIC+ are average measures of cost, where the costs of the network are allocated between services using routeing factors and the service volumes.</p> <p>56.2. (pure) LRIC and LRIC+ are truly incremental measures of costs, where it is only the avoidable cost of the service that is of interest</p>	Section 6.3.
<p>57. A diagram of the four different approaches to costing are shown below. Broadly speaking:</p> <p>57.1. (pure) LRIC only recovers a fraction of the incremental cost of a service, since it is only those costs avoided if the service in question is treated as the last service in the stack</p> <p>57.2. LRAIC would recover the incremental cost of a service, but would not allow for recovery of joint/common costs</p> <p>57.3. LRAIC+ would recover the incremental costs and an allocable share of the joint/common costs</p> <p>57.4. LRIC+ likely recovers a smaller share of the joint/common costs than with LRAIC+</p>	

Comment	Considered:
58. In the bilateral meeting between ICASA and Cell C in June 2023, it was indicated that a “LRIC+” calculation could be added to the bottom-up model i.e. a mark-up of the (pure) LRIC currently calculated in the model.	
59. Cell C does not see this as a viable option, since the main objective of a “+” is the sufficient/recovery of joint/common costs. LRIC+ as indicated in the bilateral meeting does not at all correspond to the LRIC+ as intended by ICASA in its historical documents.	
60. ICASA is already modelling a calculation in the top-down models that is similar to LRAIC+, since it is effectively calculating a fully allocated cost (FAC) of the top-down expenditures using a routing factor table. A similar routing factor table must be included in the bottom-up model to allow a proper LRAIC+ calculation to be implemented, since only this cost standard properly illustrates the variation in costs that will be experienced by the operators of significantly different scale in South Africa.	Section 3; Section 6.3-6.8.
61. The bottom-up model only includes a calculation of the pure LRIC of termination, which uses economic depreciation to annualise the capex and opex. Section 3.2.1 of ICASA’s guide documentation states that the model applies “a levelised cost of incoming voice minutes, including a time trend for inflation. This is the approach proposed by the GSMA, for example, and applied by regulators such as Comreg.”	Section 6.9.
62. ICASA has chosen to apply economic depreciation (and Cell C does not agree with its implementation in this case). Cell C has undertaken an initial review of the pure LRIC calculation and noted two apparent significant shortcomings in ICASA’s implementation that are described below. These are:	

Comment	Considered:
<p>62.1. Trend used to weight the demand volumes</p> <p>62.2. Whether economic depreciation is done before or after the difference step (i.e. placement of economic depreciation in the calculation).</p>	
<p>63. In both cases, the implementation is not at all consistent with best practice. Moreover, the implementation is also different from the ComReg approach referenced in the guide documentation. Therefore, the statement in the guide documentation is factually incorrect.</p>	
<p>72. With regard to ICASA's bottom-up model of mobile networks, whilst there is some limited capability to model operators of different scale (in terms of coverage, market share and unit costs of equipment), ICASA is not capturing other differences such as the assumed spectrum holdings, differences in overhead costs and the distinction between market share of subscribers and market share of traffic.</p>	<p>Section 3.</p>
<p>73. These are features that ICASA knows can impact the network costs of an operator and were considered in the 2018 process. ICASA should ensure the bottom-up model can consider these features through improved parameterisation in the model (effectively, through including more input cells on the Scenarios worksheet that can vary by modelled operator).</p>	
<p>77. As previously described, a significant omission is the modelling of any carriage of traffic by national roaming. This is a dimension that was modelled in some detail in the 2018 process but has been (for some unknown reason) omitted in this process thus far.</p>	

Comment	Considered:
78. Small-scale operators depend on some level of domestic roaming in order to serve their subscribers, since they do not have national coverage from their own network. This is also missing from the top-down model, since the cost per minute should be a blend of the costs of own-network traffic and the costs of traffic delivered via roaming.	
79. Both models should include the capability for a proportion of traffic to be carried (and costed) using domestic roaming. ICASA should refer to their models developed in 2018 to parameterise these features in a similar way.	
80. The v1.5 model appears to frequently source the model developed by the European Commission ("Eurorate model") for inputs. This is the case, for example, for many cells on the "2 Dimensioning" worksheet, as well as the assumed radii on the "3 Geography" worksheet.	Section 6.3 - 6.9.
81. Cell C finds it highly questionable that ICASA is not referring to its own models developed in 2018 for inputs by default. These models were refined through great effort by all parties concerned throughout 2018 over multiple consultations. These models provide a much more robust and South-Africa specific set of parameters than the European-specific parameters to be found in the Eurorate model.	
82. The change of the modelling structure from the 2018 models to the current proposed version also introduces many questions of principle which are not explored by ICASA, suggesting that the consultant has	

Comment	Considered:
<p>chosen an 'easy' model without any reference to the recent (robust) modelling principles and implementation undertaken in the 2018 process. Such questions include:</p> <p>82.1. why is there a change from forward-looking tilted annuity to a whole-timeframe economic depreciation?</p> <p>82.2. why is pure LRIC the only costing approach implemented?</p> <p>82.3. why is the network modelling so coarse with little detailed parameterisation by technology and geotype (Cell C suspect it is precisely because only pure LRIC is being calculated, which means that the calculation of incremental network costs is the emphasis, rather than total network costs)?</p>	
<p>83. Cell C strongly recommends that ICASA's 2018 models are used as the default source for inputs when more recent operator data has not been provided.</p>	

7.2 MTN

Comment	Considered:
<p>1.3 While MTN understands that the Authority is not seeking new submissions on the questionnaires at this stage of the regulatory process, we note that both the TD and BU questionnaires were updated following industry submissions on 7 June 2023. Most notably, the Authority has reduced the time horizon of the request</p>	<p>Section 6.9.</p>

Comment	Considered:
<p>to 20 years (2018-2037) for the BU model, and FY 2022/23 for the TD model which MTN understands to be the last available financial year, or 2022 in its case.</p>	
<p>1.4 MTN welcomes the reduced time horizon, and notes that some of the data MTN highlighted as wholly unnecessary for MTR modelling was removed (e.g., wholesale revenues). However, the scope of the data remains essentially similar, and we stand by the arguments of our previous submission, namely that a) this represents an extremely onerous data request for the purpose of MTR modelling, and b) it is not clear how much and how this voluminous data request in fact flows into the shell models. Notwithstanding this, MTN takes comfort from the Authority’s clarification that this data request is effectively to be produced on a best effort basis, and that “the Authority will not take any information not provided `adversely”.</p>	
<p>1.5 Critically, however, the main issue highlighted in MTN’s previous submission remains. The updated questionnaire and BU model shell continue to enshrine a specific modelling approach (pure-LRIC) and depreciation method (economic depreciation). This in turn informs the scope of the data requests, in terms of both the time horizon and the granularity sought. It is not clear why the industry continues to be asked to comment on very specific modelling shells and depreciation algorithms before the consultation and decision to adopt a specific cost standard and modelling approach has taken place.</p>	Section 6.2.
<p>1.6 If, for example, the Authority decided to change its modelling approach to LRAIC (as proposed below), and/or tilted annuities, much of the below submissions would be unwarranted and unnecessary. A new round</p>	

Comment	Considered:
<p>of consultation would likely be required on new model shells and questionnaires reflecting this updated approach.</p>	
<p>1.7 The Authority’s insistence in putting the proverbial cart before the horse leads us to believe that the Authority has in fact already made up its mind on the use of a pure LRIC cost standard (with or without mark-up), and this after-the-fact “consultation process” is a consultation only in name. It does not appear to be the intention of the Authority to consider the use of the previously adopted LRAIC modelling methodology. In fact, the Authority does not even discuss this possibility in the documentation issued to date, in that the Authority only ever discusses whether a mark-up should be applied to pure LRIC, but not why LRAIC, (which was deemed appropriate in 2014 and 2018) should now be jettisoned. MTN submits that the rationale identified in favour of a LRAIC methodology in the Authority’s previous determinations remains relevant in light of issues identified in the BU shell model.</p>	
<p>2.1 The modelling approach embedded in the BU shell model is pure LRIC [1]. This is confirmed in the modelling guide, where Acacia defends the use of the costing standard using four broad criteria[2]. In its Clarification Responses, the Authority suggests it may decide to move to a “LRIC +” approach by applying a mark-up on the pure LRIC model output (on some unspecified basis) to recover joint and common costs that are shared between different service increments. The proposed costing standard is thus pure LRIC with, or without a joint and common cost mark-up: LRIC, or LRIC +.</p>	

Comment	Considered:
<p>2.2 The Authority appears to ignore previous costing determinations (2014, 2018) were made on a different basis: LRAIC+. As a modelling methodology LRAIC is different from pure LRIC (or LRIC +). The fundamental difference is the definition of the increment that is being modelled: in pure LRIC / LRIC+ the increment is voice call termination traffic. In LRAIC, the modelled increment is all traffic (voice termination then gets allocated a share of this incremental cost using a cost-driver e.g., BH traffic). These are different modelling methodologies, which could potentially derive very different outcomes. The methodology also significantly impacts the precision and granularity of both the required data and modelling.</p>	<p>Section 6.3, 6.4.</p>
<p>2.3 It is still not clear why and how the Authority suddenly decided to change its modelling approach. The LRAIC approach was deemed to be adequate for MTR price setting in 2014 and 2018. In 2018, the Authority, through its Consultant (Aetha) stated LRAIC was preferred to pure LRIC because “[The] characteristics of the customary ‘Pure’ LRIC calculation make it extremely difficult to understand and follow, and hence to have confidence in the results. The results can also be sensitive to assumptions about demand, technology and costs a long way into the future.”[3]</p>	<p>Section 6.2.</p>
<p>2.5 Aetha, when proposing LRAIC further stated that: “The calculation will be far more transparent. The calculation will be far more stable/consistent over time and forecast scenarios. The model will not have to look a long way into the future. It will not be necessary to use the highly complex economic depreciation method”[4]. The consultants also previously highlighted the resource intensive nature of the data requirements and modelling required to derive accurate pure LRIC outcomes.</p>	<p>Section 6.9.</p>

Comment	Considered:
<p>2.6 The issues highlighted by Aetha during the previous MTR price setting round appear to be very relevant to the difficulties identified with the Acacia model, as highlighted in the next section below.</p>	
<p>3.1.1 Pure LRIC requires highly granular modelling across space and time to detect the impact of a relatively small traffic increment, whereas LRAIC unit costs are substantially less sensitive to simplification and averaging of inputs.</p>	
<p>3.1.2 The following sections define some of the key structural issues, every one of which may lead to materially inaccurate cost estimates. Due to the highly sensitive nature of the modelling and assumptions, these inaccuracies are much larger for the pure LRIC cost standard than for LRAIC.</p>	
<p>3.1.3 This section does not criticise specific input values (MTN understands this will be consulted upon once the populated models are published) and focuses exclusively on the model structure and algorithms. In other words, the issues identified below cannot be fixed by changing input parameter values but require changes to the model code / structure.</p>	

7.3 Telkom

Comment	Considered:
<p>1.1 Telkom welcomes the Authority’s review of the timeline and the time afforded to operators to comment on the methodologies on the TD/BU cost models.</p> <p>Telkom notes that the Authority has indicated that it will publish a briefing note on the Authority’s methodology stance on the 14th of August 2023. It further proposes the date of 14 September 2023 for inputs on the questionnaires / models to be provided by the operators. It has, however not indicated when it will publish the revised cost models.</p> <p>Given that the Authority has indicated that the revisions will entail the development of a new questionnaire and cost models, based on the feedback received from operators, it will have to provide operators a date on which it will provide operators with the models and questionnaire incorporating its revised methodology stance. The Authority is therefore requested to provide a date by which it will provide its revised questionnaire and models.</p> <p>In providing the reviewed questionnaires and models the Authority also needs to consider operators will need sufficient time to review and populate the revised questionnaire and models. Even if the revised models and questionnaires are provided at the same time as the Briefing note on Methodology stance, we have previously indicated that operators will require more than the proposed month to respond to the Authority’s revised models and questionnaire.</p>	<p>Section 5.</p>

Comment	Considered:
<p>In deciding on the appropriate time that operators will be afforded to provide the requisite data it needs to be considered that operators were provided more than 3 months during the 2018 review.</p> <p>In our submission on 7 June 2023 Telkom indicated that a minimum of 90 working days would be appropriate for the submission of data on the cost models. The period of 90 days commencing on the date when the Authority publishes its revised models.</p> <p>Telkom also notes that the Authority has indicated that it will publish draft models one month after it has received the data inputs from stakeholders. It then only provides stakeholders with 10 working days to comment. Telkom submits that at least 20 working days should be provided for stakeholders to comment.</p>	
<p>1.1 Given that it is highly likely that Telkom will be the only respondent in relation to fixed voice services, Telkom is concerned that even if the Authority undertakes to provide only aggregated data Telkom's actual costs for fixed voice services will become public knowledge. Given the commercially sensitive and strategic nature of such data it would be irresponsible for the Authority and detrimental to Telkom if such data were to become available in the public domain. Telkom therefore requests that the Authority undertakes that Telkom's proprietary data remain privileged and urges the Authority to clarify how it intends to protect the confidentiality of Telkom's cost and other data.</p>	
<p>1.1 Telkom is of the view that the level of data that is requested for the bottom-up models / questionnaire is too extensive and granular for the purposes of determining the costs of call termination. Furthermore, the level of granularity of the information requested in terms of volume information per technology / area,</p>	Section 6.9.

Comment	Considered:
network element information, and cost related information is not available at the level requested by the Authority. We have elaborated further on this aspect in Annexure B attached hereto.	
<p>1.2 Given that decreasing fixed call volumes is an international phenomenon and that the technology used to terminate fixed and mobile calls is becoming increasingly converged, Telkom suggests that there is no need to differentiate between fixed and mobile termination rates. The reasons for this have been spelled out in our previous submissions during this CTR review process. Notwithstanding, we highlight that:</p> <ul style="list-style-type: none"> • There has been a decrease in fixed voice minutes in South Africa and abroad due to fixed-mobile substitution. This is further exacerbated by convergence between mobile and fixed services and by subscribers increasingly moving to alternative services such as OTT voice. • In order to support legacy voice services Telkom needs to maintain its legacy switching assets for which there is no modern equipment available in the market. • Any new entrant building a new network to provide voice services in South Africa would build a wireless access network using mobile network technology. The modern equivalent network relevant for the purpose of calculating FTRs is therefore a mobile network. 	Section 4.
1.2 Should the Authority persist with a FTR cost study, Telkom strongly suggests that it should be on the basis of a top-down (TD) model only. Any bottom-up (BU) model based on current or historical cost accounting standards would not be reflective of any actual costs incurred and would hence produce spurious results.	Section 4, 5.

Comment	Considered:
<p>It needs to be considered that the current top-down model proposed by the Authority does not align with Telkom's top-down model and that Telkom's top-down model has been used for all previous reviews. In order to produce more accurate results Telkom strongly recommends that the Authority use Telkom's top-down model for the purposes of calculating the cost of fixed termination. This will also assist in avoiding an unnecessary resource-intensive process which will require retrofitting existing data.</p>	
<p>1.2 Changing Telkom's data from the existing model to the one proposed by the Authority would be a highly time-consuming and resource-intensive exercise. Telkom therefore proposes that the Authority adopt a similar approach to the one during the 2018 review whereby it will be more efficient and informative for the Authority to visit the Telkom premises where it will be able to interrogate the model directly.</p>	Section 6.9.
<p>1.2 Fixed subscriber numbers are decreasing and the number of minutes per subscriber are declining. Declining volumes will result in increasing unit costs over time. Telkom is not sure how the Authority plans to use hypothetical figures to determine a fixed call termination rate and whether such hypothetical figures will be useful.</p> <p>Notwithstanding Telkom's position, as highlighted above, we've provided comments on some of the parameters contained in the Authority's fixed BU model.</p> <p>In the "summary" sheet it seems that the Authority will be using a 5-operator model, each with a hypothetical market share of 20%. The commercial reality is that Telkom is effectively the only provider of fixed line voice services as defined. A model assuming 5 operators may therefore not be useful.</p>	Section 44. Specific parameters are not commented on at this stage.

Comment	Considered:
Please refer to the table in Annexure B for additional comments on the BU modelling parameters.	
1.3 As with the fixed top-down model, the mobile top-down model proposed by the Authority does not align with the structure of Telkom's top-down model. To collect and collate Telkom's data in order to populate an alternate model, as proposed by the Authority, rather than interrogating Telkom's existing model would be a highly time-consuming and resource-intensive exercise. Telkom therefore strongly recommends that the Authority use Telkom's existing top-down model. It will also be more efficient and informative for the Authority to engage with Telkom on site where it will be able to interrogate the model directly.	Section 6.9.
1.4 Telkom's supports the use of BU costing to determine mobile call termination rates. Telkom, however, proposes that in order to achieve lower costs to communicate for the economy at large the Authority should not rely only on the Long-Run Incremental Cost plus (LRIC+) cost standard if it intends to remove asymmetric termination rates (AMTRs) in favour of smaller operators. Telkom has previously indicated that LRIC+ is only appropriate for achieving pro-competitive outcomes if smaller operators, with market shares lower than 20%, are awarded higher AMTRs.	Section 3.
1.3 Notwithstanding Telkom's submitting that AMTRs with a premium for smaller operators would be appropriate given the highly skewed telecommunications market structure in South Africa, international precedent has advised that symmetrical rates should only be charged if termination rates are at pure Long-Run Incremental Cost (LRIC) or lower. In a highly skewed market, such as the South African market, zero termination charges may be most appropriate for achieving pro-competitive outcomes if asymmetry is	Section 3, 6.7.

Comment	Considered:
<p>removed. ICASA may also want to consider that a sender keeps all (“SKA”) approach will also assist in reducing the costs to communicate.</p>	
<p>1.3 Regulatory authorities in other countries, particularly in Europe, have analysed the mechanisms by which MTRs affect competition in the overall mobile market in detail. Broadly, they have found that:</p> <ul style="list-style-type: none"> • MTRs set above the level of LRIC reduce the effectiveness of competition between operators, and particularly to the disadvantage of smaller operators relative to larger operators; and • Asymmetric MTRs can serve to mitigate the competitive disadvantages faced by small operators when MTRs are set at LRIC+. <p>Telkom supports the view that LRIC+ is only appropriate if smaller operators qualify for asymmetry and this approach is also relevant in the South African context. If the Authority decides to use the LRIC+ cost methodology to determine call termination rates, asymmetric MTRs need to be applied to prevent any competition distortion in the South African market.</p>	Section 3.
<p>1.3 MTR symmetry should only be considered if the pure LRIC methodology is used to determine call termination rates. The Authority is also urged to consider termination rates equal to zero (SKA) considering that such a rate would assist with addressing distortions in the market and reducing the costs to communicate and given that a high proportion of calls by large operators are on-net and do thus not incur a termination charge. This is further supported by the increasing use of over the top (OTT) voice, which does not incur termination charges, as an alternative to traditional voice.</p>	Section 3, 6.7.

Comment	Considered:
<p>1.3 The table below reflects the options that are defined in the selection tab “operator scenarios” in the “summary” sheet and in the “scenarios” tab.</p> <p>With reference to the hypothetical market share of 20% and a large operator share of 30% (based on a 5-operator market), it seems that the Authority assumes that the mobile market is a relatively balanced market. Telkom is not sure how the Authority plans to use the proposed hypothetical figures to determine appropriate mobile call termination rates in a highly skewed market.</p> <p>Notwithstanding, the current mobile market shares in South Africa reflect a skewed mobile market. Figure 1, below, shows that the two large operators: Vodacom and MTN have revenue market shares of approximately 49% and 27% respectively (as calculated by Africa Analysis (2023) if the market is defined as the mobile market. Telkom Mobile had a revenue market share of approximately 13%, Cell C, just below 10% and Rain 0.27% in September 2022. The figures for the voice market are even more skewed as pointed out in the Call Termination Rate Discussion Document.</p>	<p>Section 3, 6.7.</p>
<p>1.3 Telkom notes that given the parameters proposed in table 1, Telkom, with a market share of less than 15% and with a population coverage of less than 87%, would qualify as a “smaller operator”. Accordingly, based on the Authority’s cost model, Telkom, like other smaller operator should qualify for a call termination premium. Telkom, however, submits that the quantum of the premium contained in the Authority’s current model is too low considering that the Authority has estimated, in its Discussion document, that the largest</p>	<p>Section 3, 6.7.</p>

Comment	Considered:
operator's share of the South African voice market was 56% in 2020. The current premium of approximately 45% (9c vs 13c) would therefore be more appropriate.	
<p>1.4 Telkom proposes that rather than re-inventing the proverbial wheel, the Authority apply the tilted annuity depreciation method as was adopted in previous reviews, rather than an untried economic depreciation method. It has been suggested in the literature that the latter method would be more appropriate for the calculation of depreciation of assets in a less technologically dynamic environment.</p> <p>The greatest risk of using the economic depreciation method for calculating the costs of termination would be that the forecast (including technology and traffic volumes) in highly uncertain and dynamic macro and microenvironments, as is the case in South Africa, is highly unlikely to be reliable over the forecast period.</p>	Section 6.9.
2. Telkom will be happy to engage with the Authority further in order to achieve an optimal call termination rate regime and is willing to make as much time and resources available as necessary for the Authority to conduct its top-down exercise at Telkom's premises.	

7.4 Vodacom

Comment	Considered
Exec summ: However, when the second phase commenced, it became evident that this was not the case. This is because it was clear, through the industry and one-to-one workshops, that the Authority was intending to	Section 6.2.

Comment	Considered
<p>set MTRs through a Pure LRIC approach (with economic depreciation). This contrasted with the LRIC+ approach to setting MTRs previously used by the Authority. These workshops also revealed that stakeholders had a number of other concerns with the Authority's approach to this phase, including with the data requests and shell models it had shared with licensees.</p>	
<p>Exec summ: As a result of this and following the licensees submitting extensive lists of concerns, Vodacom notes that the Authority has now appeared to shift its position, publishing a document on 15 June that appears to seek licensees' views on many aspects relevant to determining rates, including both key methodological choices (such as the cost standard which should be used) as well as detailed aspects of the modelling.[3]</p>	
<p>Exec summ: Vodacom notes that the Authority's approach to this "consultation" is unusual and does not follow the usual format of such documents. Instead, it simply presents a series of lengthy tables listing the issues / points made by licensees and the Authority's initial response to these, which invariably do not respond to the query but instead invite input. This means that the Authority has first adopted a new cost standard without having in any way consulted on it, presented modelling templates inexorably premised on this standard (Pure LRIC) and sought input on these modelling templates. When queried on the implications and assumptions underlying these templates and how these could or would be adapted were a different cost standard to be employed, it has then failed to provide any clarification, instead saying that all comments are welcome. This is contrary to an open and transparent consultation process and confusing as to what is proposed and why.</p>	

Comment	Considered
<p>Exec summ: What is clear, as set out above, is that all of this comes after the Authority has already undertaken considerable work on its cost models, which are premised on adopting Pure LRIC. The Authority therefore appears to have constructed a process that can yield one outcome only, while pausing midway to allow for comment on what has already been built. This is not a meaningful consultation process designed rationally, fairly and logically to determine the cost standard to be applied, as one would expect from a transparent, open and receptive consultation process. Further, the consultation on the more detailed modelling to be done (based on the determined cost standards) suffers from similar issues.</p>	
<p>Exec summ: Given this, Vodacom remains concerned that the Authority has already, in effect, prejudged the outcome of this exercise and that its pause is intended only to create the impression (and not the reality) of proper consultation with stakeholders on the choice of the cost standard and other key modelling issues. As such, Vodacom continues to reserve its rights to respond as it may at the appropriate point to protect its rights in regard to this Review process.</p>	
<p>Exec summ: Nevertheless, and despite its reservations, Vodacom seeks, in this document, to respond constructively where it can. However, in so doing Vodacom notes that many of the issues on which the Authority now appears to be seeking input are, whilst important, secondary to the key question of the cost standard that will be used when setting rates (in the sense that these can only be properly considered once the decision on cost standard is made). Indeed, Vodacom understands that the Authority is only seeking broad comments on its approach at this stage.[4] Therefore, in this submission, Vodacom discusses first the cost standard and then, to the extent possible, provides comments on conceptual and practical matters of model</p>	<p>Section 6.3-6.8.</p>

Comment	Considered
<p>implementation. Vodacom explains why the Authority should continue to use the LRAIC+ (also known as “LRIC+”) cost standard. If despite this, the Authority does nonetheless decide to move to Pure LRIC, and as should be clear from the remainder of this submission, then its current proposed approach will need significant changes, as its modelling approach is wholly inadequate.[5]</p>	
<p>Exec summ: Furthermore, as part of Phase I of its Review, the Authority has already decided to phase out asymmetric MTRs. Only new entrants will be allowed to charge asymmetric MTRs for a period of 3 years. In practice, it is not clear who such entrants could be. Given this, it may not be proportionate for the Authority to develop a model that can also estimate MTRs for new entrants. However, if the Authority does decide to estimate the MTRs for new entrants, it is important that this is specific to genuine new entrants, rather than other operators who have already been in the market for more than 3 years, such as Telkom and Cell-C. Vodacom notes that the Authority is modelling outcomes incompatible with its symmetry decision only to cater for the possibility that Telkom's challenge to its Phase I decision may be upheld by the courts. Vodacom's responses to the modelling of asymmetric MTRs must accordingly be regarded in the same vein.</p>	Section 3.
<p>A Robust and transparent consultation, with authorities listening to and considering, in detail, points made to them by other stakeholders, are both critical cornerstones of effective regulation. They are also both fundamental prerequisites for the Authority to act lawfully. Apart from the legal defects inherent in a failure to consult properly, such failures increase significantly the risks of regulation being inappropriately specified and having consequent negative impacts on consumers in South Africa. To this end, and for the reasons set out below, Vodacom has major concerns that, in this inquiry, the Authority is following an insufficiently robust</p>	Section 6.2.

Comment	Considered
<p>and transparent consultative process. This is particularly acute when it comes to determining the cost standard to use when estimating the costs of termination services. The Authority’s decision on which cost standard to use must be aligned with the requirements of the Electronics Communications Act (“ECA”) and so take into account the previous positions that the Authority has taken on the merits of different cost standards and depreciation methods. In particular, the Authority must justify any unexplained and anomalous departure from a position it has previously held and cogently defended.</p>	
<p>A2 In the initial stakeholder workshop for Phase II, followed by Vodacom’s one to one meeting with the Authority and its advisors, Acacia, it became clear that the Authority intended, without conducting a consultation, to follow a Pure LRIC approach and the use of economic depreciation. The engagement in these meetings and workshops was premised on this as if it were a given.</p>	
<p>A2 Given the numerous concerns raised by stakeholders regarding the lack of consultation on the cost modelling approach, the Authority published a Clarification Document on 15 June.[8] Stakeholders have, therefore, been invited to comment on the issues set out in this document when making submissions on 24 July 2023.[9]</p>	
<p>A2 Within the Clarification Document, the Authority confirmed (issue # 9) that it is considering adopting a Pure LRIC approach to modelling the costs of termination services, with this being combined with the application of economic depreciation. It also made it clear that these are departures from the previous methodologies used by the Authority. In addition, the Authority confirmed (issue #17) that it went ahead and</p>	

Comment	Considered
<p>implemented this approach (and departures from the 2018 approach) in the BU shell models, model guide and BU information requests.</p>	
<p>A2 Many of the issues on which the Authority now appears to be seeking input are, whilst important, secondary to the key question of the cost standard that will be used when setting rates (in the sense that these can only be properly considered once that decision is made). The Clarification Document (issue # 3, 10, 11, 17, 21) confirmed that, should the Authority finally settle on a different cost standard, the modelling guide, model shells and information requests will be re-issued. For this reason, as Vodacom understands it, the Clarification Document seeks (issues # 13 and 15) only broad comments on the models, model guide, and questionnaires.[10] Therefore, Vodacom understands that the scope of this consultation is limited to matters of the cost standard. However, to the extent possible, Vodacom also provides comments on conceptual and practical matters of model implementation.</p>	
<p>A2 After stakeholders raised concerns with the Authority’s lack of consultation, Acacia produced a guide¹¹ that attempted to justify the switch to Pure LRIC. Given that the Authority has now accepted that it needs to consult on the appropriate cost standard, it is unclear what status the Acacia guide has. Nonetheless, in this submission, Vodacom provides a more detailed response to Acacia’s guide and the points set out in it (Vodacom also commented on Acacia’s guide in its 7 June 2023 letter).</p>	
<p>A2 Another key issue raised in the Clarification Document relates to the potential differential treatment of different mobile operators. In this regard, Vodacom re-iterates that to the extent that the Authority wants to</p>	Section 3.

Comment	Considered
<p>consult on the modelling approaches for small and large operators, the small operator should only reflect genuine new entrants, in line with the Authority’s Phase I findings.</p>	
<p>A3 The Authority has not afforded parties sufficient time - The Authority confirmed that its self-imposed deadline to issue final regulations is March 2024. As a result, the Authority has already put in place stringent timelines for stakeholders to comply with the requests for information (though Vodacom notes that the Authority has also subsequently amended these).</p> <p>Given the Authority’s clarification that the Bottom-Up (“BU”) shell models, model guide and BU information requests may change following this “consultation” exercise, Vodacom will provide more detailed comments on timelines once the Authority decides on the cost standard and publishes any updates to the relevant documents. At this stage, Vodacom simply notes the Authority’s position in 2017, that collating the required data for regulatory cost models typically takes several months.¹² This will remain the case today. Indeed, even more time will be required if the Authority decides on a Pure LRIC cost standard, given the more complex nature of some elements of this approach (such as the application of economic depreciation and the degree of granularity required in the modelling). It is important, to arrive at reasonable outcomes, that the Authority recognises this and does not attempt to cut corners in order to meet its own internal deadlines.</p>	Section 5.
<p>A3 As a result of its failure to consult properly, the Authority has created an additional burden for stakeholders - From 26 May 2023 (publication of the Notice and relevant materials), all stakeholders were required to invest significant time and money to understand, review, and clarify the approach that the Authority had implemented. Depending on the outcome of this new exercise, stakeholders may be presented with new</p>	Section 6.9.

Comment	Considered
<p>modelling guides, model shells and information requests, all of which will have to be analysed, reviewed, and clarified again. This additional burden on operators comes at a time when operators are already having to devote significant resources to keeping their networks up and running given the energy crisis in South Africa. In future, Vodacom strongly urges the Authority to avoid imparting additional burden on licensees, by instead following, from the start, a robust, transparent and sequenced process.</p>	
<p>A3 There is a risk that the Authority has pre-empted the outcome of its consultation, whilst placing undue responsibility on licensees subject to regulation - Vodacom remains concerned that the Authority (and its advisors) have been pre-empting the outcome of the cost modelling phase. This is because:</p> <ul style="list-style-type: none"> - In relation to the BU shell model, it is not appropriate for the Authority to implement a Pure LRIC approach while claiming to be open to discuss whether a LR(A)IC+ or Pure LRIC approach should be implemented. - The race towards a self-imposed deadline generates serious questions about the Authority's willingness and ability, at this point, to alter the cost standard that it implemented, given this would entail a need to redo the modelling work it has done to date. Put simply, the consultation playing field has been laid squarely against any other cost standard. This is a major concern for Vodacom. - During the meetings with the Authority on 31st May (the stakeholder meeting) and 1st June (the one-on-one meeting), the Authority's advisors mentioned a number of times that the impact of call termination on certain network elements was negligible and hence those network elements could be excluded from the modelling. The Authority's response to the industry clarification questions, and comments made by its advisors during the meetings, further seemed to suggest that unless stakeholders submit corresponding data in relation 	<p>Section 6.2, and 6.9.</p>

Comment	Considered
<p>to any arguments they make, such arguments may be dismissed by the Authority / its advisors. Vodacom finds such statements most irregular given that it is the Authority imposing regulation, and one would expect it to substantiate its proposals, before requiring stakeholders to demonstrate and substantiate alternatives. This is especially important as the time given to stakeholders is limited, the scope of the areas that the Authority seeks responses on is very broad and the existence of additional opportunities for commenting on the Authority's modelling approach uncertain. Vodacom is concerned that the Authority is, in effect, adopting an unsubstantiated default position unless stakeholders are able to build and substantiate an alternative, instead of substantiating its proposals for input.</p>	
<p>A3 Vodacom is concerned that the Authority's proposals for licensees to complete a new Top-Down ("TD") model template will place undue burden on the industry. Given that the Authority intends to use the TD model as a cross-check for the BU modelling, requiring operators to spend significant time and resources to familiarise themselves and complete a new TD model is unjustified. Vodacom would instead propose that the results (e.g., the network dimensions) from the BU model are compared with operators' network dimensions (covered in the data request) and that operators complete the 2018 TD model template, given that this is already familiar to the industry. Furthermore, Vodacom supports the continuation of the 2017 approach towards TD modelling, i.e.:</p> <ul style="list-style-type: none"> • Using data for the actual operator (actual footprint, market share, technology mix, network topology, network scope, range of services, and costs). • Using data for the operator's most recent financial year ended; and 	Section 6.9.

Comment	Considered
<ul style="list-style-type: none"> • Using the tilted annuity depreciation method. 	
<p>B For wholesale access and interconnection markets where competition has been found to be ineffective and where operators are judged to have SMP, regulators may, as a remedy, require those operators to provide interconnection / access on approved, cost-based terms. In such cases, regulators have to decide how they should measure costs, i.e., what cost standard to use. In this section, Vodacom introduces the options available to regulators, before outlining the choices the Authority made and substantiated historically in this regard. From this, it is clear that the Authority has previously stated a preference for setting CTRs using a LRAIC+ cost standard, based on a large increment of traffic. This was partly because such an approach allowed operators to also recover a share of joint and common costs from call termination services, which would help ensure continued investment in electronic communications networks in South Africa. Furthermore, the Authority's own advisors had also recognised the complexity and lack of transparency involved with a Pure LRIC cost standard (see Section D.1 for further details).</p> <p>It is a requirement of the ECA that the Authority must identify changes in the market since its previous reviews, which would justify a move from LRAIC+ to Pure LRIC. As discussed in Section C.1, the Authority has not identified any such changes.</p>	<p>Sections 6.3-6.9.</p>
<p>B1 The choice of how to estimate costs (i.e., the "cost standard") is important because telecommunications networks, including mobile networks, typically offer a range of different services, such as voice termination, voice origination, voice transit, messaging and data. Many of the elements (and overheads) of a network are used to deliver several services, rather than being specific to a particular service. This means that</p>	<p>Section 6.3.</p>

Comment	Considered
<p>telecommunications networks exhibit considerable joint and common costs, whereby common costs are costs which are not directly attributable to specific services and joint costs are costs that can be directly attributed to more than one specific service (but not a single service). When estimating costs for the purposes of setting regulated prices, regulators, therefore, have to decide whether and how to take into account joint and common costs. That is, they need to decide the cost standard to use.</p> <p>In such circumstances, a regulator will typically choose between four broad ways of estimating costs:[13]</p>	
<p>B1 Pure Long Run Incremental Cost ("Pure LRIC") – Pure LRIC measures the incremental cost of a reasonably efficient operator providing a single service over the long-run. Fixed costs that are specific to a particular service (i.e., "direct fixed costs") are also included in an estimate of the Pure LRIC of a service, as such costs are also incremental over the long run. However, the Pure LRIC of a service does not include any contribution towards joint and common costs. Pure LRIC is typically calculated by estimating the costs that could be avoided if a particular service were no longer provided. Therefore, Pure LRIC applies a broad service increment for network dimensioning (e.g., all voice and data traffic), but uses a narrow service increment for unit cost calculations (e.g., call termination services). If an operator priced all its services at Pure LRIC, it would not, therefore, be able to recover efficiently incurred costs. This is because most of the elements of a mobile network are shared between a range of services, especially when it comes to coverage. Put another way, if a regulator sets the price of one service at Pure LRIC, the operator concerned must price its other services in such a way that still allows it to recover all of its joint and common costs.</p>	

Comment	Considered
<p>B1 Long Run Average Incremental Cost ("LRAIC") – LRAIC is the average incremental cost of voice termination as part of a larger increment (e.g., all network traffic). Therefore, the key difference between Pure LRIC and LRAIC is that a larger services increment is used when estimating incremental unit costs. This means that LRAIC will typically be above Pure LRIC because a greater share of costs is likely to be variable when a larger services increment is used. For example, in the Figure below, the joint costs for services 1, 2 and 3 would be included as part of LRAIC if the increment being removed includes these three services. In addition, LRAIC could also be greater than Pure LRIC if there are economies of scale i.e., marginal costs fall as output increases (not illustrated below).</p>	
<p>B1 Long Run Average Incremental Cost Plus ("LRAIC+") – LRAIC+ captures the average incremental cost of voice termination as part of a larger increment (i.e., LRAIC) plus a contribution towards joint and common costs. There are a number of different ways to allocate joint and common costs between services e.g., in proportion to traffic volumes or using Equi-Proportional Mark-Ups ("EPMU").¹⁴ In principle, however, if an operator priced all of its services at LRAIC+ (using a consistent approach to allocate joint and common costs to services) it would be able to recover its efficiently incurred costs. This measure is often also referred to as "LRIC+". For ease, Vodacom uses interchangeably that nomenclature in the remainder of this submission. For the avoidance of doubt, however, this means LRAIC+.</p>	
<p>B1 Fully Allocated Cost ("FAC")^[15] – With FAC, all costs are taken into account and split between different services. The FAC of a product or service is the total cost of that product or service divided by the total volume, i.e., the average cost of the product or service. The first step in calculating FAC is to identify direct costs (fixed</p>	

Comment	Considered
<p>and variable) and then assign these costs to individual services based on the extent to which the different services use various cost elements. FAC also includes a contribution towards joint and common costs. The FAC of a service is typically above or similar to LRAIC+.</p>	
<p>B1 Despite these terms being commonly used and understood in the sector, Acacia has, in its Guide, described only three possible cost standards for setting voice CTRs, namely Pure BU-LRIC, BU-LRIC+ and FAC. Of potentially more concern, Vodacom notes that Acacia described BU-LRIC+ as an approach that “considers the fixed and variable costs avoided without termination (BU-LRIC) and adds an additional margin to cover joint and common costs that are shared between different services”[16]. This is not the same as LRAIC+, as Acacia’s description still focuses on a narrow service increment i.e., voice termination services. Acacia also hasn’t described LRAIC (or LRAIC+) as a possible cost standard, despite this arguably being the most common standard for estimating termination costs. Given this, Vodacom is concerned that the Authority and Acacia may not understand fully the choices to be made when determining the appropriate cost standard. In Section D of this submission, Vodacom therefore sets out in more detail the implications and importance of how an increment is defined and in particular, what this means for modelling Pure LRIC.[17]</p>	
<p>B2 At no point has the Authority used Pure LRIC as the cost standard in previous market reviews. Therefore, a move to Pure LRIC would represent a new and untested approach towards determining CTRs in South Africa. It follows, therefore, that such an approach should only be applied following a full and transparent consultation and if the Authority is able to identify those changes in the competitive nature of the market that mean a change to the remedies (pro-competitive conditions) is appropriate. Indeed, such a consultation would not</p>	Section 6.3.

Comment	Considered
<p>only be best practice; it is expressly required under the ECA. This is because, under ECA, when reviewing existing pro-competitive conditions, the Authority has to consider whether it would be proportionate to modify the pro-competitive conditions given changes in competition:</p> <p>“(8c) Where, on the basis of such review, the Authority determines that the licensee to whom pro-competitive conditions apply continues to possess significant market power in that market or market segment, but due to changes in the competitive nature of such market or market segment the pro-competitive conditions are no longer proportionate in accordance with subsection (7), the Authority must modify the applicable pro-competitive conditions applied to that licensee to ensure proportionality.”[18] [Emphasis added]</p>	
<p>B2 As explained in Section C.1, the Authority has not identified any changes in the competitive nature of the call termination markets that would justify a move to Pure LRIC. For clarity, Vodacom summarises below how the Authority has approached the matter of the cost standard during previous call termination reviews.</p> <ul style="list-style-type: none"> • 2010 Regulations - The Authority’s 2010 Final Regulations set MTRs based on FAC. The MTRs introduced in the 2010 Regulations followed a glide path towards these rates, beginning from a higher, unregulated level. • 2014 Regulations - The Authority’s 2014 Final Regulations explained that MTRs were set on a cost orientated basis. As per the Authority’s briefing note¹⁹ issued at the time, these rates were determined based on the LRIC+20 cost standard. The Authority justified the move to LRIC+ on the basis that: <ul style="list-style-type: none"> - “LRIC+ would allow operators to recover a portion of joint and common costs incurred in the provision of wholesale voice call termination service through termination rates. 	

Comment	Considered
<p>- [This would] ensure continued investment in electronic communications networks in South Africa.</p> <p>- [This would] correct the imbalances created in 2010 wherein the 2010 Call termination Regulations applied different cost standards to different markets.[21]</p> <ul style="list-style-type: none"> • 2018 Regulations - The “cost-based” MTRs described in the 2018 Final Regulations continued to follow a LRIC+ approach. In a briefing note (dated 24 November 2017), the Authority clarified that by ‘LRIC’ it meant LRAIC calculated over a large increment (all the traffic services provided by the operator)²² and that ‘LRAIC+’ meant LRAIC plus a mark-up for other common costs including corporate overheads such as accounting and finance, HR, corporate IT, office buildings, office equipment.²³ The Authority’s advisors (Aetha, Mazars and Africa Analysis) also made it clear that they were using a large increment in order to estimate CTRs: <p>“Regarding the technical question of the cost increment, we have adopted a ‘large increment’ approach.</p> <p>- ‘Large increments’ were typical in the EU telecoms regulatory cost models produced prior to the European Commission's promulgation of “pure” LRIC</p> <p>- A typical ‘large increment’ would be: all the traffic from all voice services.</p> <p>- The use of large increments, combined with the universally used ‘equi-proportional mark-up’ (EPMU) method for distributing common costs, will avoid the need for complex combinatorial LRIC calculations”[24]</p> 	
<p>B2. In summary, therefore, the Authority (and its advisors) have previously been clear that they preferred modelling the cost of call termination services using a large services increment, whilst including a contribution towards joint and common costs. This contrasts with the Authority’s current proposals where it proposes to</p>	<p>Section 6.3-6.9.</p>

Comment	Considered
<p>model call termination services using Pure LRIC i.e., estimating the avoided cost if termination services were no longer provided. Given this, the Authority would be applying a broad increment for traffic dimensioning (e.g., all voice and data traffic), but using a narrow increment when calculating unit cost calculations (i.e., call termination services). This is an important distinction as a smaller share of costs will be identified as avoidable when using a narrow increment compared to a broader increment. Indeed, modelling the cost of voice termination services using a Pure LRIC approach is a highly theoretical exercise, as operators would not be able to offer a full suite of mobile services if they did not offer voice termination services. Therefore, in practice, operators would never consider just removing voice call termination services from their networks, as this would mean that subscribers would not be able to receive calls. Given this, modelling voice termination services using a Pure LRIC approach is not consistent with operators' business models or how they make investment decisions.</p>	
<p>B2. As set out in the following section, moving to Pure LRIC could have significant negative implications for consumers in South Africa. At the very least, these need to be considered properly by the Authority.</p>	Section 6.5.
<p>C. For the reasons set out in this submission, Vodacom concludes that there is a strong economic case for the Authority to continue setting MTRs based on LRAIC+ i.e., using both a wide increment and including a share of joint and common costs. This is because there is a significant chance that a move to Pure LRIC would make low-income customers, who primarily benefit as mobile subscribers from receiving mobile calls, less attractive to serve, so likely leading to increases in other charges faced by those subscribers. This would, in turn, result in mobile services becoming relatively less affordable for those customers, creating a material risk that a</p>	

Comment	Considered
<p>significant number of such subscribers could be deterred from using mobile services, especially given the current cost-of-living crisis.</p>	
<p>While there have been some moves in other jurisdictions to setting MTRs based on Pure LRIC, Vodacom notes that it is still the case that the majority of non-EU countries (including virtually all African countries for which information is publicly available) set MTRs using LRAIC+ or a similar methodology, such as FAC. In the EU, the Commission advocated the use of a Pure LRIC approach in 2009, [25] at a much earlier stage of development in mobile markets, and notably when MTR voice revenues still accounted for a much more significant share of total revenues. In 2009, voice services were also the main driver of competition, whereas data services have now become far more important. The situation in South Africa today is, therefore, materially different to the situation in the EU around 2009. Furthermore, in practice, as the EU's 2020 delegated act applies a single MTR in all EU countries, in all countries bar one (France[26]), rates will actually be above Pure LRIC going forward.[27]</p>	<p>Section 6.7, 6.8.</p>
<p>In the rest of this part, Vodacom:</p> <ul style="list-style-type: none"> • Explains that the Authority has not identified any changes in the market that would justify a move to Pure LRIC, meaning that it has not met the prerequisites set in s67(8)(c) of the ECA; and • Explains that MTRs have already fallen significantly in South Africa, so reducing any perceived benefits of moving to Pure LRIC; 	<p>Sections 6.3-6.8.</p>

Comment	Considered
<ul style="list-style-type: none"> • Sets out some of the key characteristics of South Africa, which need to be taken into account when deciding on the most appropriate cost standard; and • Responds to the arguments that Acacia has made in relation to efficiency, distributional effects, competition, and the commercial and regulatory consequences of moving to Pure LRIC. <p>In considering the points made here, Vodacom also directs the Authority to the expert report by Frontier Economics, which is again provided as part of this submission.</p>	
<p>C1 As set out in Section A, under the ECA, the Authority has to identify changes in competitive conditions in order to modify pro-competitive interventions.</p> <p>The Authority found in Phase I that the four market failures it identified in 2014, which included above cost pricing,²⁸ would manifest in the absence of regulation of the relevant markets and, therefore, determined to retain cost-based pricing. During the 2014 and 2018 reviews, the Authority concluded that LRIC+ based pricing removed the market failure associated with above-cost pricing. In its Briefing Note dated 15 August 2014, the Authority illustrated the difference between LRIC and LRIC+ and justified its decision to adopt LR(A)IC+ on the ground that, amongst others, LR(A)IC+ would allow operators to recover, through termination rates, a portion of joint and common costs incurred in the provision of wholesale voice call termination services.</p> <p>Given the Authority’s own finding that there were no changes in the competitive nature of the call termination markets (with all operators continuing to have a 100% market share), Vodacom has seen no evidence of any legal and/or economic basis to justify why cost-based pricing based on LR(A)IC+ is no longer proportionate,</p>	<p>Sections 6.3-6.8.</p>

Comment	Considered
<p>a jurisdictional pre-requisite of the statute, and why a more extreme Pure LRIC approach (where joint and common costs are ignored and hence not recovered in any form from call termination services, and a smaller services increment is used) is proportionate and consistent with an obligation of setting CTRs using cost-based pricing. Critically, neither the Authority, nor its advisor, Acacia, seems to have considered the implications of its proposed Pure LRIC approach and the potential negative consequences of this for South Africa.</p>	
<p>C2 As a result of the transition to a LR(A)IC+ cost standard combined with falls in the unit costs of providing termination services, regulated MTRs have fallen substantially over time in South Africa, as shown in Figure 4 below. It is important to take this into account when considering the various points raised by Acacia, as this impacts the merits of different cost standards. And, although Vodacom can't prejudge the exact results of the cost modelling exercise, it is clear that even under LR(A)IC+, MTRs would continue to be low in South Africa. Indeed, in this regard Acacia has itself highlighted that MTRs in South Africa are already below the average in Africa (see Section C.7).</p>	<p>Sections 6.3-6.8.</p>
<p>C2 In general, given that MTRs are already set at a low level in South Africa, termination revenues and payments now only represent a small percentage of overall revenues and costs. [REDACTED] This lack of materiality helps explain why any move to Pure LRIC is likely to have no or only a minimal impact on the fixed sector or on competition between mobile operators (which is one of the justifications that has previously been used by some regulators to move to Pure LRIC). It also means that the waterbed effect from moving to Pure LRIC would have limited impact on the average mobile subscriber. However, given how price sensitive low-</p>	<p>Sections 6.5, 6.6, 6.7.</p>

Comment	Considered
<p>income users are likely to be and given that they tend to be net receivers of calls, it is still likely that a move to Pure LRIC would adversely impact low-income subscribers (see Section C.5, below).</p>	
<p>C3 It is important that the Authority takes into account the specific characteristics of South Africa when interpreting international precedent and in turn determining the most appropriate cost standard on which to set MTRs in South Africa. Table 1 provides a comparison between South Africa and the EU for a number of measures – the main jurisdiction where an authority considered Pure LRIC to be an appropriate cost standard. As we return to in subsequent sections, a number of these characteristics may impact the most appropriate cost standard in South Africa and make LRAIC+ more appropriate in South Africa than in the EU:</p> <ul style="list-style-type: none"> • South Africa has a low population density, and a considerable share of its population lives in rural areas; • South Africa has low penetration of fixed services, which means that for many people, mobile services provide the only realistic way of accessing telecommunication services; • Although there is considerable take-up of mobile services (68% unique penetration), a material share of the South African population still do not use mobile services, meaning there is ample scope for further increasing take-up – especially given these customers are unlikely to have a fixed connection; and • South Africa’s relatively low GDP per capita combined with its high-income inequality will mean that a segment of the population will have very low incomes and therefore are likely to be very price sensitive. 	<p>Section 6.8</p>

Comment	Considered
<p>C4.1 Acacia has argued that “Pure LRIC is likely to lead to the efficient allocation of resources in South Africa, since bringing the costs of wholesale termination services close to their marginal cost is likely to lead to the optimal consumption of voice calls.”⁴¹ Vodacom disagrees with this statement. This is because, given the presence of common and joint costs for telecom services, not all telecoms’ services can be priced at marginal (incremental) cost. Pricing MTRs at Pure LRIC may mean higher prices for other mobile services due to the waterbed effect, which could lead to the sub-optimal consumption of such mobile services. Therefore, it is important to consider the full implications of this – something which Acacia does not appear to have done.</p>	<p>Section 6.5.2.</p>
<p>C4.1 Since MTRs based on Pure LRIC do not (among other items) recover the costs associated with providing network coverage, the choice between Pure LRIC and LRIC+ for setting MTRs tends to have a relatively larger impact on MTRs, in proportionate terms, in countries that are sparsely populated. This is because a higher proportion of total network costs relates to the provision of population coverage, compared to countries with higher population densities.</p>	<p>Sections 6.5.2, 6.8.</p>
<p>C4.1 As shown in Table 1, South Africa has a much lower population density and a higher share of people living in rural areas than the EU. In particular, South Africa has a population density below half that of the EU. Since a greater proportion of its population is dispersed (i.e., across rural areas), it is consequently relatively more costly to provide population coverage in South Africa relative to countries where the population is more heavily concentrated around urban centres. All else the same, this could mean that the potential impact of moving to Pure LRIC for termination will be greater in South Africa than in the average EU.</p>	<p>Sections 6.5.2, 6.8.</p>

Comment	Considered
<p>C4.1 Acacia, in the Guide, appears to assume that it will always be optimal to price termination services at Pure LRIC, with common and joint costs recovered from other services and charges (such as fixed charges). However, this is not always the case. For example, Ofcom’s 2015 Mobile Call Termination Statement, which Acacia quotes when considering the link between MTRs and investment, quotes academic research that the optimal termination rate mark-up over Pure LRIC only tends to zero as it becomes more unlikely that low use customers will give up their mobile phones in response to price rises (i.e., the more inelastic is subscription demand). Ofcom then argues that in the UK, the elasticity of subscription is likely to be very low, meaning that in the UK, the optimal mark-up is likely to be low or near zero. Whilst this might be the case in the UK, with almost universal take up of mobile services, Acacia has presented no evidence on why this might be the case in South Africa. Given the very clear differences in income distributions between the UK and South Africa and the fact that, as set out in Table 1, 32% of South Africa’s population still do not use mobile services, this seems a very significant omission (especially when combined with the likely proportionately greater amount of common and joint costs in South Africa, compared to the UK and EU). There is a very significant proportion of lower income customers in South Africa who could, therefore, be negatively affected by a policy which requires mobile operators to disproportionately recover common and joint costs from other services, especially given the current cost of living crisis. A failure to take this into account materially affects the rationality and potential lawfulness of any decision to adopt this standard.</p>	<p>Sections 6.5.2, 6.8.</p>

Comment	Considered
C4.2 Acacia states that the transition to Pure LRIC would not adversely impact investment incentives as investments are linked to expansions in data, rather than voice services. However, this is also not correct nor properly substantiated.[42]	Section 6.5.36.5.2
C4.2 [REDACTED]	Sections 6.5.3, 6.6
C4.2 Given the continued need for investment in the South African mobile sector, this risk is arguably greater than it might be in other jurisdictions. In particular, given the extremely low levels of fixed voice and broadband penetration in South Africa (see Table 1), it is vital that mobile networks are able to continue to provide near-universal coverage and that mobile operators are incentivised to further expand their networks into the least economically viable areas. Not only is network coverage important for ensuring equality of access to basic	Sections 6.5.2, 6.8

Comment	Considered
communications services, but higher mobile penetration has long been credited with driving significant increases in GDP growth. ⁴³	
<p>C5 The Acacia guide devotes only three sentences to examining the distributional effects of a move to Pure LRIC. It argues that lower termination rates will lead to lower retail prices and so benefit lower income consumers.⁴⁴ Acacia’s conclusion does not, however, reflect the reality of the South Africa market and is a patently inadequately grounded conclusion.</p> <p>As set out in the Frontier report, a move to Pure LRIC would result in no share of common or joint costs being recovered in the termination revenues received by mobile operators, compared to a scenario in which the Authority continues to use LR(A)IC+. As a result, mobile operators may seek to recover these common and joint costs from retail services (or through a reduction in handset subsidies, for example). This so called “waterbed effect” could arise for two reasons:</p> <ul style="list-style-type: none"> • Setting termination rates below LRIC+ would reduce the net termination revenue that the mobile sector, overall, receives, with this not contributing to common and joint costs; and • Mobile subscribers who are net receivers of calls will become less profitable with lower MTRs. 	Section 6.6
C5 These effects would disproportionately impact low-income users. This is because low-income users are likely to be net receivers of calls (and, as shown in the Frontier report, there is also a correlation between low ARPU and low-income consumers). [REDACTED]	

Comment	Considered
<p>[REDACTED]</p> <p>[REDACTED]</p> <p>A move to Pure LRIC will make these customers (i.e., where incoming calls exceed outgoing calls) less profitable for all MNOs. Mobile operators would therefore have to raise retail prices to restore profitability, with the likely result that for a number of the individuals with these connections, participation in the mobile market could become unattractive. The Acacia Guide has completely ignored this tranche of customers and the relevant assessment in this regard.</p>	
<p>C6 Acacia argues that moving to Pure LRIC will be pro-competitive, on the basis that it will reduce on-net/off-net price differentiation in the market and hence reduce tariff mediated network effects.[45] Again, however, Acacia has copied the principle of this position from the debate that took place in Europe over the switch to using Pure LRIC (for example, quoting from the Irish communications regulator) and has not considered the application of this principle to the South African market today. It is true that relatively high MTRs can lead to some concerns over the impact of on-net / off-net tariff differentials. However, for two reasons, this is not the case in South Africa today.</p>	Section 6.7
<ul style="list-style-type: none"> • Firstly, MTRs in South Africa are already significantly below the average levels in the EU when the European Commission ("EC") proposed a switch to Pure LRIC. As set out in Section 3.2.1 of the Frontier report, when the EC produced its 2009 Recommendation, the average MTR within the EU was 8 EUR cents/minute. In comparison, the current MTR for larger operators in South Africa is around 0.5 EUR cents/minute. As such, any supposed competitive benefit in South Africa from moving to Pure LRIC will be much more muted than 	

Comment	Considered
<p>the benefits expected in the EU, around the time that the Recommendation was published. Indeed, in the EU, some of those benefits were also linked to a concern that the relatively high level of MTRs created a competitive distortion with fixed line telephony (given FTRs were much lower). Again, this is not relevant in South Africa given both the smaller scale of the fixed line sector and, critically, the very small difference between fixed and mobile termination rates today.</p>	
<ul style="list-style-type: none"> • Secondly, and unsurprisingly given the relatively low level of MTRs, on-net / off-net pricing differentials are not an important feature of South Africa’s mobile market. Indeed, all of Vodacom’s contract and prepaid tariff plans include “Any network” voice tariffs, meaning there is no longer a differentiation between on-net and off-net pricing. 	
<p>Further, Acacia’s position on the competitive effects of moving to Pure LRIC in its Guide are not consistent with recent statements made by the Authority and Acacia in other documents. As part of the Authority’s Answering Affidavit to Telkom in its review of symmetric MTRs, Acacia made it clear that any externalities under LRIC+ will be limited:</p> <p>“That the fact termination is regulated costs (LRIC+) of a hypothetical efficient operator means that externalities are limited and there will not be under-recovery”[46]</p>	
<p>In its 2022 Findings Document, the Authority also stated that the negative externalities faced by smaller operators have already fallen as a result of setting MTRs based on LRIC+:</p>	

Comment	Considered
<p>“Further, since 2014, the Authority has used the LRIC-plus cost standard to calculate the efficient cost of providing fixed and mobile termination services. This has led to a reduction in the negative externalities faced by smaller operators.”⁴⁷</p>	
<p>Finally, to the extent that the Authority does have any concerns about on-net/off-net pricing differentials, the move to symmetric MTRs should help to address this. In its Answering Affidavit to Telkom as part of the court review on symmetric MTRs, the Authority stated that:</p> <p>“the move to symmetric mobile termination rates (similar to fixed termination rates) is likely to foster competition due to the expected reductions of off-net retail voice prices, which is expected to improve the welfare of consumers”⁴⁸</p>	
<p>^{c7} AS its final criterion, Acacia argues that there is limited risk arising from switching to Pure LRIC because of the pattern seen in many countries around the world for MTRs to have declined sharply, with some countries having implemented a bill and keep regime for termination. Whilst recognising that MTRs in South Africa are already below the average for Africa, Acacia states that a switch to Pure LRIC will lead to further significant reductions in MTRs, but that this, “need not, however, have a substantial impact on the regulator since the Authority already collects detailed bottom-up cost information for setting termination rates”. It is unclear what Acacia means by this or why this is relevant. Acacia then also suggests the commercial impact on any operator will be limited, as the switch to Pure LRIC will affect both interconnection outpayments and receipts.</p>	Section 6.8

Comment	Considered
<p>Indeed, it is not clear really what point Acacia is seeking to make with this criterion. However, with the exception of the EU, its benchmarking does not show that Pure LRIC is a standard approach to setting MTRs.</p>	
<p>C7.1 As set out in Annex A of the Frontier report, ITU data suggests that a significant majority of African nations do not use Pure LRIC to set MTRs, whilst countries using bill and keep (zero interconnection rates) should clearly not be used in any benchmark of cost-oriented termination rates. Doing so cannot be rational.</p> <p>Acacia has stated that “the average termination rate for the 18 African countries in Figure 3 is 0.66 US cents per minute. In South Africa, rates stand at around US 0.52 cents per minute which is below the average.” Moving to Pure LRIC would likely mean that MTRs in South Africa would be even further below the average in Africa.</p>	
<p>C7.1 Finally, Vodacom notes that Acacia quotes termination rates in Tanzania as an example of rates in Africa under a Pure LRIC approach. This is not correct. The determination of Cost-based Interconnection and Retail Service Charges in Tanzania Telecommunications Market dated 2 November 2022, page 16, provides that interconnection rates will be set based on Forward-Looking Long Run Incremental Costs (FL-LRIC) plus a mark-up for common and joint costs.</p> <p>Kenya is one of the few African countries where termination rates are set using Pure LRIC. Whilst there are clearly a variety of factors that are likely to impact a country’s mobile performance, it is notable that the South African mobile market outperforms Kenya’s on a number of key measures. In particular, South Africa’s mobile</p>	

Comment	Considered
<p>market has higher take-up, lower prices, superior network quality and more widespread coverage. Yu also exited the Kenyan mobile market in 2014 and Orange divested its stake in Telkom Kenya in 2016.</p>	
<p>C7.2 The majority of countries that have applied Pure LRIC in the past have been in the EU. The EC's 2009 Recommendation on termination rates required all EU countries to move to Pure LRIC by 2012. The EC largely opted for Pure LRIC due to concerns about cross-subsidies between fixed and mobile markets, and smaller mobile operators facing barriers to expansion. However, the EC's 2009 Recommendation to use Pure LRIC for MTRs is of limited relevance to the current situation in South Africa. This is because:</p>	
<p>C7.2 When the EC produced its 2009 Recommendation, the average MTR within the EU was 8 EUR cents/min.⁴⁹ In contrast, the current MTR for larger operators in South Africa stands at around 0.45 EUR cents/min⁵⁰ (i.e., 1/18th of the level observed at the time of EC's 2009 Recommendation). Given the high level of MTRs in Europe at this time, the difference between fixed and mobile termination rates was very significant (approximately 7-8 EUR cents/min⁵¹). The EC, through its intervention, was, therefore, seeking to reduce this gap in order to limit the risk of competitive distortions between fixed and mobile markets.</p>	
<p>C7.2 This is not a concern in South Africa today. The difference between fixed and mobile termination rates in South Africa is currently only 0.15 EUR cents/min.⁵² As a result, there is very limited impact of termination rates on competition between fixed and mobile networks. Furthermore, compared to the situation in Europe 12 years ago, termination revenues now account, overall, for a very small proportion of total mobile operator revenues. Given this, changes in termination rate regimes are very unlikely to have any impact on overall</p>	

Comment	Considered
<p>competitive dynamics in South Africa’s fixed and mobile markets. As we set out in Section C.5, however, changes in termination rates could still have a significant impact on individual customers, especially those on low incomes.</p>	
<p>One of the overarching goals of the EC is to create a European single market. For this reason, the EC puts significant emphasis on ensuring that there is a harmonised approach towards regulation within the EU.⁵³ Linked with this, the EC has stated that:</p> <p>“Consistent low termination rates, in line with the Recommendation, are an important prerequisite for the sustainable implementation of the roam-like-at-home provisions”⁵⁴</p> <p>No countries in SADC currently set MTRs based on Pure LRIC. Indeed, continuing to use LRIC+ in South Africa would be more consistent with other SADC countries.</p>	
<p>The EC now sets a single maximum MTR that applies to all EU countries. Notionally, this has been described as being based on Pure LRIC. However, in practice, the maximum MTR is above Pure LRIC for most EU countries. This is because the EC (and its advisors Axon) estimated the Pure LRIC of mobile termination services for each EU country, but then took the country with the highest Pure LRIC (France) and applied this rate (rounded up) to set the EU-wide maximum. As a result, in other Member States the maximum MTR will be above the Pure LRIC faced by operators in those states.</p> <p>More generally, there are also important differences between South Africa and the EU as set out in Section C.3.</p>	

Comment	Considered
<p>C7.3 The EC has explained why the risks associated with setting MTRs too low are greater than the risks associated with setting MTRs too high⁵⁶. In particular, the EC states that its approach, i.e., setting the maximum MTR at the level of Pure LRIC in the EU Member State with the highest Pure LRIC costs of termination, and hence allowing regulators in other Member States to set prices above country specific Pure LRIC, is:</p> <p>“consistent with economic theory as generally, there is an asymmetric risk of setting prices too high or too low with the risks of setting the prices too low being greater than the risk of setting prices too high (i.e. in case of doubt it is preferable to risk setting the prices too high rather than too low). This is because the problem of under- investment (if the MTRs are set too low) is considered to be of greater importance to consumer welfare, including both quality and long-term prices for consumers, than the problems derived from over-investment (if the MTRs are set too high). This is important when approaching the setting of wholesale caps based on projections of either costs or prices, which will be subject to uncertainties regarding the accuracy of such projections, in particular further into the future.”⁵⁷ [Emphasis added]</p>	
<p>C7.3 To paraphrase the EC, cost-based rates are set based on forward-looking modelling exercises which rely to a large extent on forecasts about future costs and prices (and volumes). There is therefore an inevitable (and indeed likely) risk that MTRs set based on such an approach may not truly reflect the actual level of costs faced by operators in a given country. As such, it is prudent to set rates in a way that minimise the consequences of any errors.</p>	

Comment	Considered
<p>The consequences of forecasting errors are amplified under Pure LRIC, since any underestimate of the costs (and therefore MTRs) would mean that operators cannot even recover the incremental costs of termination services (let alone recover any joint and common costs). This means the asymmetric risks associated with setting MTRs provide an additional reason for not adopting Pure LRIC as the appropriate cost standard. In this regard it is important that the Authority recognises that it may be especially difficult to accurately estimate the Pure LRIC of call termination in South Africa, due to the practical challenges set out in Section D and in particular the need to develop a much more granular model than it appears to have done so far in the shell model and to trade-off appropriately the granularity that it is possible to model against the time period that should be covered by the model.</p>	