



# Vodafone Response to Ofcom Consultation: Annual Licence Fees for UK Broadband's 3.4 GHz and 3.6 GHz spectrum



# Executive Summary

Ofcom's proposals set the annual licence fee ('ALF') for the spectrum held by Three's subsidiary UK Broadband ('UKBB') too low, in a way that would harm competition and that is inconsistent with Ofcom's duties.

Vodafone urges Ofcom to undertake further analysis:

1. To address Ofcom's current under-estimation of the market value of UKBB's spectrum; and
2. To test Vodafone's submission that the correct approach is to set the UKBB ALF at the polar upper end of the market value range, considering the specific circumstances of this spectrum block.

In relation to its consideration of its statutory duties, Ofcom does not consider the question of how a specific ALF might be chosen from within the range of market values Ofcom identifies. Since Ofcom does not deal with these statutory concerns such as the impact of its proposals on consumers and competition in relation to market value, it must do so as a subsequent stage.

Analysing the issue with respect to Ofcom's statutory duties shows that there is a material risk to competition associated with setting the UKBB ALF too low that needs to be given greater weight in Ofcom's thinking. Ofcom has already taken action that allows Three to develop an effective monopoly on 5G-ready spectrum in a large contiguous block. Under-pricing the key spectrum that delivers this advantage makes that a bad situation worse. Harm to consumers arising from the risk of undermining competition is much greater than any harm to consumers of the incremental differences between a higher and lower ALFs (the price impact is immaterial, for example). As such, any reasonable analysis would conclude in favour of a higher ALF than that proposed by Ofcom.



# Introduction

In Ofcom's earlier consultation, Vodafone disagreed with Ofcom's proposal to vary<sup>1</sup> the terms of UKBB's 3.6GHz licence to both change the frequencies and increase the permitted transmit power by a factor of three. At the heart of Vodafone's objection was Ofcom's failure to consider the implications for competition of the decision to create such a large contiguous block of spectrum that is suitable for 5G services. We consider that Ofcom's reasoning was flawed in portraying the decision as a simple variation. Ofcom's analysis adopted the wrong counterfactual of UKBB already being licensed to use 84MHz of spectrum with identical characteristics to the recently-awarded 3.4GHz spectrum. The correct counterfactual would have been one of 84MHz of spectrum of significantly impaired value because of limitations in the permitted transmit power. Had Ofcom used the proper counterfactual, then it would have recognised that there was significant incentive on UKBB to cooperate in defragmenting the 3.4-3.8GHz band because, absent this, it possessed spectrum of limited value for 5G mobile services.

Despite objections by Vodafone and others, Ofcom granted the variation with immediate effect. It is vital that Ofcom now acts to set an ALF for this spectrum that truly takes into account the value of the licensed spectrum as it stands following the variation.

Ofcom's proposals fail to achieve this objective, and as a result, the proposals fail to meet Ofcom's duties and established policy framework. The effect is that Ofcom proposes an ALF which is some 20% lower than the equivalent paid by UKBB/Three's competitors in an auction that occurred less than a year ago, with an additional discount provided for a transitional period.

# Legal Framework

As Ofcom correctly points out, the legal framework for the setting of spectrum licence fees derives from Ofcom's duties under EU and domestic legislation. Ofcom's powers to set spectrum licence fees above cost are well-documented, and have been considered by the court, including in the Court of Appeal's recent judgment in relation to Ofcom's 2015 decision on ALFs for 900MHz/1800MHz spectrum.<sup>2</sup>

The most critical points are that:

- In setting spectrum prices above cost, Ofcom is required to act '*in accordance with* its relevant statutory duties. These duties are expressed in UK law in terms that expressly give effect to Art 8 and related provisions of the Framework Directive.

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<sup>1</sup> For the avoidance of doubt, although we use the term "vary", Vodafone does not accept that the decision to license UKBB to utilise the frequencies 3600-3605MHz represents a licence-variation: it is very clearly an award of spectrum that was not previously licensed to anyone.

<sup>2</sup> EE Limited v Ofcom [2017] EWCA Civ 1873.



- Under EU law, Ofcom must take all reasonable steps to achieve the promotion of competition, including but not limited to ensuring that there is no distortion or restriction of competition and by encouraging efficient use of radio frequencies<sup>3</sup>. This is reflected in UK law in the form of Ofcom's principal duty to further the interests of consumers, including by promoting competition<sup>4</sup>.
- Ofcom's various duties are not mechanistic or, necessarily, entirely independent; there may be trade-offs between them to be made. Ofcom cannot, for example, treat its task as being wholly about market value: it must exercise its discretion and turn its mind to whether other factors have a bearing on the final figure to be set as a spectrum licence fee. As the Court of Appeal noted<sup>5</sup>:

*An NRA like Ofcom which is charged with the function of setting licence fees in the manner envisaged by Article 13 of the Authorisation Directive is not therefore tasked with a straightforward calculation of market value based, for example, on a real auction of licences in which the various mobile operators are permitted to bid against each other for the available spectrum. **Although the NRA is entitled to and will ordinarily calculate the fees on an opportunity cost rather than a cost recovery basis, it is expressly required by Article 13 to take into account the Article 8 objectives such as promoting competition and investment in new technology which may in its calculation of the licence fee require some qualification of the price.** There is, of course, an argument that some of these considerations, if they call for a discount in the fee by reference to what the mobile operator would be prepared to offer for the licence, are likely to have been factored into any actual bid for the licence and do not therefore call for further adjustment of the fee by the regulator. But these are matters for the expert judgment of Ofcom and the other regulators and questions of methodology lie outside the scope of this appeal.*

- In exercising that judgment, Ofcom enjoys a margin of discretion but must exercise this in a manner consistent with the requirements of administrative law (and the procedural duties imposed under the CA03)<sup>6</sup>. That includes consistency with Ofcom's established policies and practices, to ensure fair and even-handed treatment across different parts of Ofcom's spectrum policy programme.

Ofcom does not proceed to properly work within the established framework and instead sets the UKBB spectrum licence fees in a manner inconsistent to meeting its duties. This is incomprehensible, as Ofcom has devoted substantial effort building a fleshed-out policy framework that it can use to reconcile these various duties and take decisions about spectrum licence fees that are in line with its legal obligations. That policy framework is set out in the Strategic Review of Spectrum Pricing ('SRSP'), published in 2010, which Ofcom commits to using (in the SRSP and in the consultation) as the basis for considering the correct ALF to set for UKBB.

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<sup>3</sup> FD Art 8.

<sup>4</sup> Communications Act 2003 ('CA03'), section 3.

<sup>5</sup> Court of Appeal ALF judgment, paragraph 11. Emphasis added.

<sup>6</sup> The procedural duties include that Ofcom's decisions be reasonable, consistent, proportionate and transparent.



Ofcom correctly identifies the SRSP as the relevant established policy framework to assess an ALF for the UKBB spectrum. The SRSP itself makes specific commitments to spectrum licensees about Ofcom's approach to future decisions concerning spectrum pricing<sup>7</sup>:

*We will apply this Framework in future fee reviews, recognising that we need to take account of the particular circumstances of the frequency bands and licence types under review. It is likely therefore that in any specific fee review that some principles and methodologies will have more weight than others and in some circumstances that we may need to diverge, for specific reasons, from these principles and methodologies. In general where we propose to do this we will set out our reasoning and consult.*

SRSP sets out eight principles and four methods for assessing licence fees. In the SRSP, Ofcom expresses a healthy degree of scepticism that any single method will have all the answers. Principle 7 relates to the use of market data (such as auction outcomes) to set spectrum fees:

*We will take account of observed market valuations from auctions and trading alongside other evidence where available when setting reference rates and AIP fee levels. However, such market valuations will be interpreted with care and not applied mechanically to set reference rates and AIP fees.*

The four methods that Ofcom commits to use in assessing spectrum fees are:

AIP methodologies	Page Numbers
<b>AIP methodology 1: AIP and congestion</b>  In setting AIP fees, we will assess current and future congestion in existing use and demand for feasible alternative uses in the frequency band in question and at different geographic locations over the relevant timeframe, given technological, regulatory and international constraints and using readily available evidence.	P. 82 - 86
<b>AIP methodology 2: reference rates</b>  Reference rates will be based on the estimated opportunity cost of spectrum use, considering both the current use and any feasible alternative uses. These estimates will be informed, where appropriate, by the available market information (if any), and economic studies of the value of spectrum in different uses.	P. 86 - 95
<b>AIP methodology 3: calculating individual licence fees</b>  In converting reference rates to fees, we will take account of the opportunity cost and the amount of spectrum denied to others. This will generally be based on frequency, geographical location, bandwidth, geographical coverage or other measure that reflects the geographical extent of co-	P. 95 - 98

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<sup>7</sup> SRSP at paragraph 2.1.



ordination requirements and in some cases the exclusivity of an assignment.	
<b>AIP methodology 4: impact assessments</b> We will undertake Impact Assessments on our fee proposals to identify any potential detrimental impacts to spectrum users, consumers and citizens. We will need to consider carefully the balance of benefits and risks of the implementation of all changes in fees.	P. 98 - 103

Vodafone agrees with Ofcom that the SRSP provides the correct policy framework to assess prospective ALFs for the UKBB spectrum. However, in the consultation, the approach that Ofcom does in fact adopt is not the SRSP framework, in the form that Ofcom sets it out in 2010. For example, despite the clear requirement stated in AIP method 4 of the SRSP to do so, Ofcom does not undertake a proper impact assessment in the consultation.

The policy framework that Ofcom adopts in the consultation is in fact not novel: it is the framework that Ofcom applied in setting ALFs for 900/1800 MHz spectrum. However, Ofcom will be aware that stakeholders had reservations that the approach was not in-line with the SRSP and was only adopted because of the circumstances following the 2010 Direction from the Secretary of State for that particular spectrum.

The SRSP approach is to take account of a wide range of inputs, and then, in light of the various factors, develop a view on value using a range of techniques. On the use of auction data specifically, Ofcom was at pains in the SRSP to point out the extent to which it was a technique to be used cautiously and with reference to the wider context within which an AIP assessment was being undertaken:

#### **Conclusion on principle 8: use of market valuations in setting AIP fees**

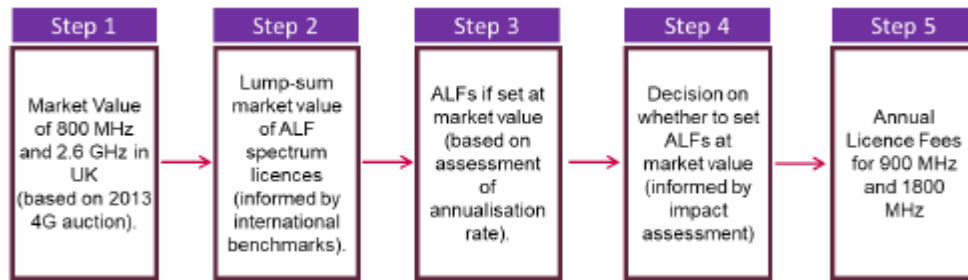
- 4.308 We agree with those responses that advised caution when looking at observed market valuations for an indication of spectrum opportunity cost of "similar spectrum" and agree that the list of factors that could affect auction valuations that we provided in our consultation document is not exhaustive and will have to be determined on a case-by-case basis.
- 4.309 We agree also with the many responses who believe that suitably caveated, the use of observed market transaction could be relevant and useful when setting reference rates on which to base fee levels.
- 4.310 We therefore conclude that we will adopt principle 8, as outlined in the consultation document with some minor changes to the text as one of our AIP pricing principles. These changes are to make it clear that we will use observed market valuations when setting reference rates and AIP fees.

**AIP principle 8: use of market valuations in setting AIP fee levels**  
We will take account of observed market valuations from auctions and trading alongside other evidence where available when setting reference rates and AIP fee levels. However, such market valuations will be interpreted with care and not applied mechanically to set reference rates and AIP fees.



In contrast to the SRSP, the '2010 Direction approach' is to assess the 'full market value' first, and then to consider whether there is any reason to deviate from that outcome. Ofcom adopted this approach in relation to 900/1800 spectrum:

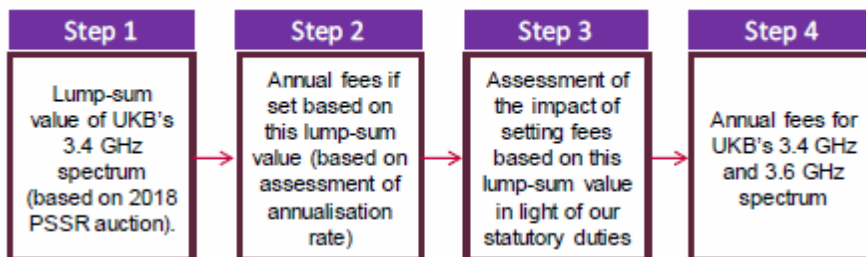
Figure 3.1: Framework for setting the appropriate ALFs



Source: Ofcom

And the same approach is then adopted in this consultation:

Figure 3.1: Framework of steps



The approach of considering market value first, and in isolation, and then applying Ofcom's statutory duties as a question as to whether to deviate from that presumptively correct answer is not the approach Ofcom takes in the SRSP, which is focused on emphasising the multiplicity of different tools that can and should be used by Ofcom to assess AIP<sup>8</sup>. This distinction is not simply a matter of obscure administrative law or a sequence that does not matter because the outcome is always the same, regardless of the order of the questions. In fact, the framework makes a material difference to the outcome.

One significant difference is that under the SRSP, a consideration of the factual matrix within which the question arises is the *starting point* for the assessment. Under the 2010 Direction approach, those facts are only relevant to the extent they apply a reason to set aside the chosen full market value outcome.

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<sup>8</sup> It is true that, as the Court of Appeal notes, Ofcom refers in SRSP to consideration of statutory factors *after* an assessment of outcomes that will lead to spectrum efficiency: see the Court of Appeal ALF judgment at paragraph 43. But read in context, this text is about how Ofcom approaches its general duty to secure the optimal use of spectrum, rather than the question of assessing market value: see SRSP at paragraph 3.13 (preceding the extract cited by the Court of Appeal).



As a result, Ofcom adopted the approach in the 900/1800MHz ALF decision of treating those statutory duties as an ‘overlay’ or afterthought, to be added in only after an assessment of full market value had been reached. There were two possible reasons to take this approach:

- First, because it came closest to Ofcom’s reading of the significance of the 2010 Direction (since clarified by the court); and
- Second, pragmatically in the circumstances of that case, it minimised the work to be done to fix the problem identified on appeal. Having already reached a determination with respect to full market value (in isolation), Ofcom understandably wished to leave as much of its initial reasoning intact and only take those steps that represented the minimum necessary to repair the problem caused by the earlier error.

However, adopting that approach meant cutting some corners: Ofcom’s 2018 900/1800 statement does not address all the problems identified by Vodafone and others in its original approach (for example, there was still no impact assessment undertaken)<sup>9</sup>. It is a pragmatic compromise, not an example of best practice.

Whatever the justification for its approach in the 900/1800 decision, there is no basis for Ofcom taking the same approach to this process (and it is a serious error for Ofcom to do so). Neither of the two reasons above applies in relation to the UKBB spectrum: there is no equivalent of the 2010 Direction giving any reason to deviate from the SRSP in terms of the role given to market value, and this consultation is (obviously) taking place at the outset of Ofcom’s deliberations, not after the event.

Ofcom’s choice of adopting the 900/1800 decision as a template for this spectrum pricing decision introduces a ‘path dependency’ where the problems of the previous error are perpetuated, and repeated. The effect of this error of approach is to skew Ofcom’s analysis away from the fact-based assessment of the sort that Ofcom commits itself to adopt in the SRSP and instead to divert Ofcom into a circular logic concerning the virtues of AIP.

The specific problems that this approach creates include:

- Ofcom does not undertake a true impact assessment of its proposals, in any form recognisably applying Ofcom’s guidelines for impact assessments (or, in the language of the Court of Appeal, ‘*a calculation which takes into account ... the impact that fees set **at that level** would have in relation to competition or individual users of the system: i.e. the Article 8 considerations*’<sup>10</sup>). Specifically, although it seeks to describe ‘Step Three’ in its analysis as being to ‘*assess the impact*’ of setting fees at the level implied by market value, Ofcom does not do so<sup>11</sup>. For example, there is little evidence, let alone robust analysis, on the likely impact on consumers or competition of the specific fee levels Ofcom intends to set consistent

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<sup>9</sup> Vodafone Response to Ofcom’s Consultation: Annual Licence Fees for 900 MHz and 1800 MHz frequency bands Section 2.3, [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/119294/Vodafone.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/119294/Vodafone.pdf)

<sup>10</sup> Court of Appeal ALF judgment at paragraph 45 (emphasis added).

<sup>11</sup> The exception is one assessment of the impact on vulnerable consumers, which is cursory and does not in any event consider the key issue of the choice between different views of market value: consultation at paragraph 4.39. Vodafone agrees with Ofcom’s assessment that questions of different impact on vulnerable consumers are not likely to be relevant in this case, so this counterexample does not address the problem that Vodafone is identifying.





with market value. An impact assessment might be expected to test the impacts of the two different possible market values that Ofcom weighs up and see which of those two sets of impacts be preferred in terms of its statutory duties – for example, is one of them more likely to promote competition? Currently, this assessment is missing in Ofcom’s analysis.

- Because it asks itself the wrong question, Ofcom’s approach in Step Three to assessing its statutory duties is circular. In summary, Ofcom assesses market value in Steps One and Two, then having done so, asks itself, ‘is there any reason not to apply market value *in general* in this case?’ Unsurprisingly, it decides that market value is *in general* the right answer. However, it does not ask itself the specific and direct questions that need to be asked to test Ofcom’s view on the appropriate ALFs, not in general terms but in relation to the specific proposals that Ofcom has developed.

In this case, a key failure by Ofcom is not to take account of the competitive impact of the contiguity of the spectrum held by UKBB (following variation). That failure means that the analysis by Ofcom of its statutory duties in Section Four of the consultation is perfunctory and does not engage with the right questions. Ofcom concludes, in summary, that there is no reason in principle to do anything different to depart from its view of market value. That is the wrong question, and it is already asked and answered in the SRSP: it is clear that in principle, and all other things being equal, market value has many virtues. But what is the specific impact of Ofcom’s proposals – not the impact of adopting ‘market value’ but the specific impact of those upper or lower prices that Ofcom calculates in relation to this spectrum? The consultation does not ask or answer this question; Ofcom’s circular reasoning misses the key issues and, as a result, does not engage with the relevant evidence.

These points are more fully explored in Vodafone’s answer to Question Four.



## Answers to Questions

Question 1: Do you agree with our proposal to set ALFs in respect of UKB's 3.6 GHz spectrum at the same rates as for UKB's 3.4 GHz spectrum?

Vodafone agrees that the licence fees for 3.4GHz and 3.6GHz should be linked in a way that reflects the extent of similar economic and technical characteristics of that spectrum. We have seen no evidence that suggests terminal availability, technical standards or propagation characteristics will differ between the bands; indeed many European countries have awarded the bands in a single exercise. That implies that ALFs should be closed aligned between the two.

Question 2: Do you have any views on our provisional conclusion to use the marginal opportunity cost to other users to calculate the lump sum value for the purposes of setting ALFs for these bands? Please provide any evidence you have to support your position.

Vodafone disagrees with the conclusions reached by Ofcom. The effect of Ofcom's proposal is that Three/UKBB, having already been awarded an unmatched 100MHz of contiguous spectrum, will be charged ALFs for that spectrum that are 20% lower than its competitors paid only months ago (for inferior volumes of spectrum).

The Communications Act is quite clear that a principal duty of Ofcom is to **promote** competition<sup>12</sup>: this is a principal duty and any functions that Ofcom carries out, such as ensuring efficient allocation of spectrum, must be carried out subject to (and giving effect to) that duty.

Paragraph 3.41(b) of the consultation sets out Ofcom's analysis of whether setting the ALF too low would risk distorting competition, concluding that '*any risk to competition is likely to be fairly limited*'. However, Ofcom's principal duty is not to ensure its actions don't damage competition *too much* (although that is important): it is to **promote** competition. Providing one market player with a ~~3~~ subsidy over twenty years in comparison to what other stakeholders are charged does not promote competition; it undermines the level playing field.

The statutory regime gives Ofcom two chances to pick up this concern:

- First, the market value of UKBB's spectrum should reflect the value associated with the advantage that this spectrum offers to Three in its current amended form.
- Second, even if that value were not able to be taken into account in the assessment of 'market value' (for example, if that were only a value specific to Three), then the impact of Ofcom's ALF proposals in providing a competitive benefit to Three (in the form of lower ALFs) should be taken into account in the impact

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<sup>12</sup> Communications Act 2003, 3(1)b



assessment. Because Three already has a significant advantage, it should not have that tilt in the playing field exacerbated by the level of ALFs that are set. The risks associated with an unlevel playing field are much greater than Ofcom's other concerns (for example, on consumer prices or spectrum efficiency). Accordingly, this is a basis for choosing a higher rather than a lower form of market value (as discussed in relation to Question Four).

Vodafone agrees that the ALF should be set with consideration to the value that other excluded users would put on spectrum, ✂

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This will shape the outcomes in UK mobile competition, including perhaps in ways that neither Ofcom nor Vodafone, nor anyone else, may anticipate.

To help ensure that spectrum efficiency is most likely to emerge in a complex and dynamic environment, an appropriately set ALF would encourage an incumbent user to divest spectrum where the value it achieved from the spectrum was less than the ALF. ✂

Vodafone also questions whether a simple analysis based on a per MHz valuation of similar spectrum is rich enough to factor in the value of contiguity. Under a per MHz approach, two blocks of 80MHz and 20MHz would be subject to the same ALF as one of 100MHz. Yet Ofcom acknowledges<sup>13</sup> that the performance, and hence commercial value, of the two blocks could be compromised by as much as 18% when compared to a single contiguous block. This is quite apart from factoring in the cost to overall spectrum efficiency of UKBB/Three's holdings fragmenting the band.

Nevertheless, if Ofcom is to adopt the approach of examining benchmark values of similar spectrum, we acknowledge that the recent auction of 3.4GHz spectrum provides a reasonable guide. There are good reasons to treat this data with caution (as recommended by SRSP) however. In particular:

1. Any auction can only reflect the values that bidders place on spectrum under the environment on the auction day.
  - a. The format of a Simultaneous Multi Round Auction ('SMRA') means that the marginal price that a bidder places on an incremental lot of spectrum applies not only to that incremental lot, but instead to all of the lots on which it is bidding. This will lead to a different result when compared, for example, to a bidder being able to bid a price uniquely on the incremental lot.
  - b. In the case of 3.4GHz, bidders would have had to make their own judgements on the timing and content of any future 3.6GHz award. For example, Telefonica put forward proposals for

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<sup>13</sup> Variation of UK Broadband's spectrum access licence for 3.6 GHz spectrum, Para 4.36, [https://www.ofcom.org.uk/data/assets/pdf\\_file/0014/130253/Statement-UK-Broadbands-spectrum-access-licence-3.6-GHz.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0014/130253/Statement-UK-Broadbands-spectrum-access-licence-3.6-GHz.pdf)



the treatment of UKBB's 3.6GHz spectrum that would have meant up to 160MHz of spectrum would be available in the forthcoming auction.<sup>14</sup> We must assume that Telefonica thought this to be a feasible option that Ofcom would give due consideration to, meaning that when determining a bidding strategy. This would tend to imply that its valuation of 3.4GHz would have been higher, had it known that less spectrum would become available for subsequent auction than it thought at the time, as the chances of a "second bite of the cherry" are less than they might have expected. Similarly, both Vodafone and BT's responses to the same consultation demonstrate a belief that Ofcom would take some action to defragment the spectrum, hence lessen the need to achieve a large block of contiguous spectrum in the 3.4GHz auction: in the event, Ofcom is not intervening. In any case, it is probable that all bidders suppressed demand in the auction, given

- c. Although in pure economic terms it may be reasonable to assume perfect capital markets such that stakeholders are able to bid to their intrinsic value for spectrum, the reality is that bidding behaviour is driven by budgetary constraints.
2. One can assume that – leaving aside the importance of breakpoints such as 100MHz - spectrum values decrease with each additional MHz. In the auction, Three bid for *incremental* spectrum at £37.8m – it is the marginal value, the implication is that its valuation for its spectrum as a whole (40 MHz at 3.4 GHz plus 80 MHz at 3.6 GHz) would significantly exceed that. Vodafone can think of no reason why Three would ascribe spectrum at an abnormally high value in comparison to everyone else, so this indicates that from an efficiency point of view, £37.8m represents a conservative choice.

In Annex A we provide analysis

Ofcom's approach of taking a **bespoke** marginal value approach to the spectrum, hence concluding that a lump sum valuation of £31.1M/5MHz, is novel (to say the least). In the derivation of 900MHz and 1800MHz ALFs, Ofcom applied a different reasoning, taking the **market clearing price** for 800MHz and 2600MHz. It then went on to derive fees for 900MHz and 1800MHz by examining European benchmarks, once again using the market clearing prices.

There is some evidence that if Ofcom had taken the path of examining individual bidder behaviour in European benchmarks, it would have reached different conclusions. Within the timescales of responding to this consultation it has not been possible to carry out a full analysis, but based upon a review of auctions in Germany, Ireland, Italy, Portugal and Spain, we consider that the European benchmarks used in Ofcom's analysis would be suppressed if Ofcom had taken a similar approach of looking at marginal prices rather than market clearing prices<sup>15</sup>. We are not seeking to re-open that debate, but Ofcom should clearly be

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<sup>14</sup> Telefonica UK's response to Variation of UK Broadband's Spectrum Access Licence for 3.6GHz spectrum, para 7, [https://www.ofcom.org.uk/data/assets/pdf\\_file/0030/117777/Telefonica-UK.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0030/117777/Telefonica-UK.pdf)

<sup>15</sup> More detail is available on request.



consistent when dealing with competitor stakeholders, otherwise it will fail in its duty to promote competition – it cannot decide to use a novel approach to valuation simply on the basis that in the case of 3.6GHz it is uniquely setting ALFs for a specific operator rather than licence holders generically.

There is, however, further logic to show that the approach of using a bespoke marginal value in setting the ALF is flawed. Consider the implications for spectrum trading:

1. Suppose Ofcom goes ahead with its proposals and sets the ALF based on disregarding Three's marginal bidding, instead focusing on the next excluded bid of Telefonica.
2. Imagine now that Three subsequently decides that it wishes to dispose of some of the spectrum, and (with Ofcom's consent) trades it to Vodafone.
3. It would then be meaningless for Vodafone to be paying an ALF that was set with respect to [every other bidders]' behaviour in the most recent auction, where the "*every other*" component was not evaluated with respect to Vodafone as the licensee, but instead with respect to Three – because Three now has no interest in the spectrum concerned and it is Vodafone that is excluding other users.
4. Logic dictates that Vodafone's ALF should then be set according to the alternative users that *Vodafone* is now excluding. That would include Three, and an examination of the marginal value that Three placed on the spectrum in the auction would conclude that this is £37.8M: the outcome would be that Vodafone's ALF after the trade would be higher than Three's ALF before the trade.
5. Clearly this would be nonsensical, but it would be equally nonsensical for Vodafone's ALF to be based upon *someone else* excluding access to the spectrum. This demonstrates that tailoring ALFs to the incumbent licensee is deeply flawed, because that licensee can change.

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However, our point is not about encouraging or discouraging spectrum trades, rather that if Ofcom's approach results in a different ALF being set between equivalent spectrum bands and/or between competing licensees, then spectrum trades that occur will expose the illogicality of the approach adopted by Ofcom.

The dangers of adopting a bespoke approach can also be illustrated with respect to ✂

Ofcom's approach will ✂

**In summary, Vodafone considers that a bespoke approach using a marginal opportunity value of £31.1M is flawed. £37.8M is the only value that is in-line with pricing paid by other competing operators, hence is the only value that is competitively neutral, hence is the only value that meets Ofcom's principal statutory duty to promote competition. Vodafone agrees that Ofcom should set a conservative ALF, but as we have set out there is every reason to believe that £37.8M represents a conservative valuation of the spectrum in question.**



Question 3: Do you agree with our proposed approach to annualisation?

It is important that the approach taken for setting ALFs is consistent across the mobile spectrum bands managed by Ofcom. Absent this, as competing operators have a mix of spectrum licences, the inevitable effect is that competition would be distorted. Vodafone is comfortable that the proposed approach to annualisation is consistent with that utilised for the 900MHz and 1800MHz band, and therefore agrees this approach for the 3.4GHz and 3.6GHz bands.

Question 4: Do you agree with our provisional conclusion that fees set based on our estimate of market value will best meet our statutory duties?

Vodafone does not repeat the points made in the section dealing with the 'Legal Framework' but they comprise part of Vodafone's answer to this question.

As stated in the response to Question Three, it is critically important that there is consistent application of ALFs across mobile spectrum bands. Vodafone accepts in principle that (consistent with SRSP) ALFs being set reflective of market value brings many advantages and, all else equal, is likely to be the best outcome in setting ALFs. Obviously, there is scope for disagreement concerning the derivation of market value in practice and on the facts of a particular case.

Vodafone is concerned that the overall approach that Ofcom adopts is virtually identical to the approach taken in the 900/1800 MHz ALF statement, despite the different legal contexts within which those decisions or proposals arise. As a result, the analysis in Step Three that Ofcom offers to meet its various statutory duties is consistent with (and in many respects virtually identical to) that which Ofcom carried out in setting 900MHz and 1800MHz fees. For the reasons explained earlier, this is the wrong approach. In our response to the derivation of 900MHz and 1800MHz fees, Vodafone raised concerns about Ofcom's approach of deriving ALFs then bolting on an impact analysis, rather than keeping in mind its statutory duties at each stage of deriving the ALFs. As noted in the 'Legal Framework' Section of this response, at the time there were two significant factors cited by Ofcom that meant that this was an appropriate approach to take: the presence of the 2010 Direction, and the fact that Ofcom's analysis of those duties was occurring after, and not in parallel with, Ofcom's assessment of market value.

Neither of these factors is applicable to the assessment of UKBB's ALFs, and Ofcom errs in giving undue credence to the approach taken in the other 9/1800MHz ALF process.

Put simply, Ofcom appears to have asked itself the wrong question in undertaking Step Three. The question that Ofcom adopts in the consultation is to test *whether those duties require Ofcom to deviate from the principle of market value* rather than whether a specific view of market value best meets Ofcom's statutory duties.



Consider the following provisional conclusions from Ofcom's reasoning, in relation to the various duties:

### On spectrum efficiency

Ofcom begins with the conclusion that market value will tend to lead to efficient outcomes, and essentially repeats the SRSP's core points on this issue. It then frames the choice as being whether to '*depart from ... market value in this case*':

- 4.20 *We said in the SRSP that we would assess the role of spectrum fees on a case-by-case basis. Given the risks to efficiency outlined above, then to depart from setting the ALF for UKB's 3.4 GHz and 3.6 GHz spectrum based on market value in this case, we consider we would have to be sufficiently confident that:*
- a) *these risks to spectrum efficiency are not material for this spectrum holding i.e. we can rely on the possibility of trading alone to ensure the allocation of spectrum is efficient; and / or*
  - b) *setting ALFs based on our estimate of market value will either not help to address the risks to efficiency or will introduce other barriers to efficiency-improving outcomes.*

Ofcom then explains its view that neither of these two conditions is met, meaning that there are no bases on which to deviate from a market value-based approach on the facts of this case, ending with the same conclusion it began with:

- 4.26 *As such, we consider there is a risk that H3G may not fully account for the opportunity cost of its UKB 3.4 GHz and 3.6 GHz spectrum. We recognise this risk may be smaller in this case than in situations where there has not been a recent auction of spectrum in the same band. On balance, however, **we consider that setting an ALF at market value is likely to secure optimal spectrum use by creating appropriate incentives to hold or release spectrum.***

[...]

#### *Overall view*

- 4.36 *Our provisional view is that **setting ALFs based on our estimate of market value will secure optimal spectrum use and therefore give effect to our statutory duty at section 3(2) of the Communications Act.** Although H3G as the licence-holder may be a particularly high-value user of the UKB 3.4 GHz spectrum, and new spectrum awards may play some role in addressing the demand of other operators, efficient use of this spectrum may also come from other users being able to access the UKB 3.4 GHz and 3.6 GHz spectrum in the future. Furthermore, while we also recognise that mobile operators can trade spectrum licences, we consider there is a risk that MNOs may be less responsive to the opportunity cost of holding spectrum (through forgoing the revenue from trading it) than to ALFs based on market value. This implies that trading may not in itself be sufficient to ensure that spectrum is allocated most efficiently.*



The key point is that Ofcom's reasoning is entirely occupied with whether to adopt market value, and not to any extent in informing what that market value ought to be, or the judgments used in reaching a particular view of market value.

## On consumers

Again, Ofcom begins by explaining why market value is a good approach in general:

*4.37 In general, and consistent with our wider policy on spectrum fees, we consider that retail prices should reflect the input cost of spectrum, and this does not reflect a market failure, or markets failing to work in the interests of consumers. As such, it would not be appropriate to maintain the price of ALF spectrum below its market value in order to artificially suppress consumer prices through a mobile spectrum subsidy.*

*4.38 As such, **we consider that setting ALFs in accordance with market value will provide efficient price signals for the use of scarce spectrum by operators. This will benefit consumers by ensuring that spectrum is used in the most efficient way for the provision of downstream services for which there is greatest value. ...***

*[...]*

*4.40 In contrast, if the price of UKB's 3.4 GHz and 3.6 GHz spectrum is below opportunity cost, there is a risk that it will continue to be held by H3G even if it is not the highest value user of that asset. This is harmful to consumers and society more widely, particularly in recognition of the scarcity of this spectrum, its asymmetric allocation between MNOs and the scope for demand and technology to change through time. **We consider this harm to the prospects for long-term efficiency and consumer welfare to be enough to set ALFs based on our estimate of market value** even if consumer prices for today's mobile services might be lower with subsidised use of UKB's 3.4 GHz and 3.6 GHz spectrum.*

*[...]*

*4.42 We have sought to apply a policy based on efficient price signals which, in general, should lead to better welfare outcomes. In doing so we have considered where there are potential adverse implications on consumer welfare that would cause us to depart from our policy based on efficient pricing of spectrum. As explained in this section and in accordance with our primary duty to further the interests of citizens and consumers, **we have not identified or seen any reasons which we consider would justify departing from setting ALFs at market value.***

*4.43 We recognise that setting ALFs above market value could lead to worse outcomes for consumers than setting ALFs below market value. As discussed above in paragraph 4.35, we consider that we have adequately addressed this risk to our statutory duties in our interpretation of the evidence on market value.*

Again, Ofcom's reasoning is focused on the question of whether market value is the right approach, and whether Ofcom should 'depart' from market value. Ofcom's analysis is flawed at the most basic level: it does not engage with the relevant question, which is '*what impact will Ofcom's proposed ALFs have on consumers – and what are the implications for Ofcom's choice as to what ALFs to set?*' Ofcom fails to engage with the





question of what impact the ALFs might have on price, suggesting the answer is unknowable (4.38). But critically, Ofcom's assessment of consumers' interests in the benefits of competition is one-sided: it touts the possible benefits to consumers of market-value ALFs in a way that is entirely unrealistic ('*or even of entry another operator*') but does not deal at all with the much more real-life and practical concern raised by Vodafone of the risk to consumers associated with a tilted playing-field in favour of Three if the UKBB ALF is set too low.

### On investment

Again, Ofcom's starting point is the virtue of market value:

*4.44 Our view is that investment decisions should reflect the true costs of inputs. This is achieved by setting ALFs based on market value, as this requires operators to pay the opportunity cost of their spectrum holdings.*

And its conclusion is that there is no reason to deviate from market value:

*4.48 We do not consider that ALFs based on our estimate of market value will necessarily lead to lower investment levels. Furthermore, even if stakeholders identified evidence of specific investments which would be made with internal funds in the event of lower ALFs, but which would not be made if ALFs were set at market value, **our provisional view remains that this would not be a sufficient reason to set ALFs below market value.***

This analysis does not deal with the question of whether Ofcom's ALF proposals will have an impact on investment. For example, it does not deal with the question of whether investment by Three in its 5G spectrum has been undertaken in a way that factors in a competitive advantage that Three has secured in 5G-ready spectrum and, if that is the case, whether that implies that ALFs for UKBB spectrum are being set too low.

### On competition

Because Vodafone is particularly concerned that Ofcom's approach to competition is wrong, this section bears closer analysis. We do not repeat here the points already made in relation to Question Two, but those points are also relevant here.

Ofcom's overall logic in the very brief discussion of competition has the same problems seen in relation to the other parts of Section Four of the consultation - Ofcom begins by explaining that market value was decided (in the SRSP) to be the preferred approach:

*4.49 Our view on spectrum fees and competition, as set out in the SRSP, is that fees are unlikely to introduce distortions to competition in downstream markets when they reflect the opportunity cost of spectrum.*



Ofcom then points out that market value levels the playing field between auctioned and non-auctioned spectrum, as being a basis for adopting and not departing from market value.

*4.50 We consider that setting ALFs at market value places MNOs with different mixes of (auctioned and non-auctioned) spectrum on a more level footing. In other words, there is a risk that setting the ALF of UKB's 3.4GHz and 3.6 GHz spectrum below market value could have an adverse competition impact by effectively giving H3G a discount or "subsidy" relative to the other MNOs who acquire their entire 3.4 GHz or 3.6 GHz spectrum at auction.*

Levelling the playing field across different spectrum bands with different effects on the downstream mobile market is agreed to be the broad strategic objective of Ofcom's work in setting AIP for mobile spectrum for all concerned.

Ofcom then assesses whether market value ALFs for UKBB could lead to market exit by Three, concluding that it could not. Finally, Ofcom considers whether there is any reason to set ALFs lower than market value to promote competition:

*4.53 Finally, we have not identified any reasons why it might be appropriate to selectively discount UKB's 3.4 GHz and 3.6 GHz spectrum below market value to promote downstream competition. We have recently assessed competition in the UK mobile services sector as part of our Statement on the award of 2.3 GHz and 3.4 GHz spectrum, and we consider that the current provision of mobile services is generally working well, with the four MNOs competing strongly and prices remaining relatively low compared to other countries.<sup>68</sup> Even if this were not the case, changing one competitor's relative input costs via a reduction in ALFs is unlikely to be the most effective approach to promote such competition.*

*4.54 Overall, therefore, our provisional view is that **setting ALFs for UKB's 3.4 GHz and 3.6 GHz spectrum based on our estimate of market value is consistent with promoting competition.***

What is missing from this analysis is the question of the wider value to Three of the newly-varied licences and the competitive impact of  $\Sigma$ , that this spectrum holding represents. Ofcom has failed to consider the competitive impact of providing spectrum to Three at ALFs some 20% lower than the equivalent of what Three's competitors had to pay at auction. It has failed to consider the competitive impact of Three having contiguous spectrum rather than fragmented (for the avoidance of doubt, even if Ofcom considers the imbalance of spectrum appropriate, it should at least charge an ALF that reflects the value of contiguity).

#### **Overall conclusion on Question Four**

In summary, Vodafone's submission is that Ofcom's provisional analysis fails to undertake a proper impact assessment. In each case, the question Ofcom asks is: does this statutory duty provide any reason to adopt a different approach than market value in this case? The answer in each case is, unsurprisingly, 'no' – and that is correct: none of those duties by themselves require Ofcom to move away from market value as the correct approach in general. This point was already decided in the SRSP. That conclusion takes Ofcom no further,



and it is largely redundant (and circular in its reasoning). That is why much of Section Four of Ofcom's consultation simply rehearses points already made in the SRSP. It is correct, as far as it goes, but misses the point.

Ofcom's specific policy choice in the consultation – the decision that must be informed by an impact assessment – is not whether to adopt market value at all, but *which of the various 'market values' it ought to adopt in setting UKBB's ALFs*. This choice is set out clearly in Ofcom's consultation:

*3.42 In light of the above, we consider that there are arguments both for and against calculating the lump-sum value by reference to either the marginal opportunity cost to other users (£31.1m per 5 MHz) or the market clearing price (£37.8m per 5 MHz).*

*3.43 Our provisional view is that, on balance, and in light of our duty to secure the optimal use of the spectrum in the interests of citizens and consumers, the arguments in favour of using the marginal opportunity cost to other users to calculate the lump sum value (in particular that the market clearing price may be higher than necessary to promote optimal use of the spectrum) outweigh those in favour of using the higher market clearing price in this case. We are therefore provisionally minded to use the marginal opportunity cost to other users (£31.1m per 5 MHz) for the purpose of setting the ALF on UKB's 3.4 and 3.6 GHz spectrum*

This choice between a higher or lower price for the UKBB spectrum is not about whether the SRSP was right to conclude that market value is the best approach in most cases. It is a meaningful choice that has a real-world impact on the ALFs that will be paid by UKBB. It can be expected to have an effect, at the margins, on spectrum efficiency, investment, competition and consumers. It is not dealt with at all in Section Four of the consultation.

Ofcom, in effect, treats the question of whether to adopt the higher or lower market value as being a wholly econometric question in respect of which its statutory duties in relation to spectrum efficiency, investment, consumers and competition have no bearing. It is wrong in law to do so.

The most important effect of Ofcom's approach is that Ofcom has not placed sufficient emphasis on promoting competition in carrying out Step One of the analysis. This leads directly to Vodafone's core concern, which is that Ofcom has undervalued the continuity premium for UKBB's spectrum.

The direct effect of this is that Ofcom's preference to use a bespoke marginal opportunity value rather than the market clearing price represents a significant failure of Ofcom's statutory duties, demonstrating that Ofcom's impact analysis is inadequate. But more generally, it is apparent that Ofcom's desire to re-use the framework that it was forced to assemble, shaped by circumstances, in light of the Court of Appeal judgment, is leading it into an error in relation to this process.



Question 5: Do you agree with our proposal to introduce ALFs for UKB's 3.4 GHz spectrum immediately, and to phase in the revised ALFs for UKB's 3.6GHz spectrum in two steps as described?

Vodafone considers that Ofcom has significantly erred in granting variations to UKBB's licences without first having addressed the issue of ALFs. The situation at the time of this response is that Three/UKBB is fully able to utilise the spectrum in question for 5G mobile services, yet is being charged ALFs that can be best described as "peppercorn". This is damaging to competition **today**, so is unacceptable, and should be remedied by Ofcom at the earliest possible opportunity. Indeed, there is significant logic in Ofcom setting the ALFs at a level to recover the underpayment by virtue of the "payment holiday" that UKBB has effectively been granted during this consultation process.

Vodafone agrees that the fees for 3.4GHz should be introduced in full as soon as possible following the conclusion of this consultation.

For the 3.6GHz band, we concede that there is a degree of impaired value, in that the band is used by incumbent satellite and fixed link users. However, it is wholly disproportionate to award a 50% discount until such usage ceases in 2020. Although there are incumbent users, this is mainly clustered at the top end of the band, i.e. in the frequency ranges 3680 – 3800 MHz. As such these users place no restrictions on the deployment of masts utilising UKBB's 3.6GHz spectrum.

Table 1 below shows incumbent users in the frequencies licensed to UKBB. Vodafone was unable to find any fixed link usage extending below 3680MHz. For satellite usage, we are not able to carry out detailed analysis of the locations where UKBB is prevented from deploying masts, absent detailed information of the topology and screening at each earth station site. However, we have given an indication of the likely exclusion areas, based on the input of our expert satellite link planners.

It should be noted that Table 1 represents a worst-case scenario, because it presupposes that these incumbents will continue to use the spectrum until mid-2020; it would be somewhat imprudent not to plan to exit earlier, with 2020 representing a backstop for contingency planning purposes. ✂



Table 1<sup>16</sup> – incumbent users in the UKBB 3.6GHz frequencies

Location Lat	Location Long	Azimuth(s)	Earthstation	Likely Impact
51° 36'	-0° 34'	112°-226°	Chalfont	✂
51° 6'	-1° 23'	109°-165°	Crawley (Winchester)	✂
52° 45'	-2° 54'	122°	Nescliffe (Shrewsbury)	✂
51° 15'	-0° 9'	202°	Redhill	✂
51° 51'	-1° 18'	113°-205°	Whitehill (Oxfordshire)	✂

From Table 1, the most problematic location appears to be ✂. However, Vodafone understands that this site is relatively well-screened so the consequent exclusion zone may be limited.

Vodafone does not seek to belittle the importance of protecting incumbent users, nor to suggest that UKBB would face no impact in protecting those users. What is clear, however, is that it is fanciful to suggest, as a 50% discount indicates, that UKBB is unable to deploy to areas covering 50% of UK geography, or even 50% of the UK population. Vodafone suggests that a ✂ discount until 2020 would be more appropriate, reflective of the additional administrative burden placed on UKBB in having to coordinate deployment via Ofcom.

If Ofcom is to apply a discount in excess of this, we think it a reasonable expectation that Ofcom publishes detailed analysis of the justification for that figure. For the avoidance of doubt, such justification cannot incorporate any element of an introductory glidepath due to the step change in ALFs (because that's merely reflective of UKBB having been undercharged historically), nor can it incorporate any considerations of device/ecosystem availability (because this is already factored into the 3.4GHz benchmark pricing which was used to set the ALF).

Finally, we note that on an ongoing basis, Ofcom intends to take an approach of levying ALFs on the anniversary date of the original award of spectrum. Within the next few years, it is likely that ALFs will become payable on the 1400MHz and 2100MHz bands, as well as the existing 900MHz/1800MHz ALFs. Each of these payments will be subject to the benefit of paying in ten instalments. It is therefore likely that the payment cycles will become complex both for operator and Ofcom finance departments. It would be better to harmonise ALF payment dates on a single date. Whilst 31<sup>st</sup> October is not ideal (as it falls half way through typical financial years, so instalments overlap year-ends), it is an established practice and the status quo position. On that basis, Vodafone suggests that the best and most convenient approach for all concerned is for 31 October to be the common payment date for all spectrum ALFs.

Vodafone Ltd  
February 2019

<sup>16</sup> Taken from Wireless Telegraphy Register on 17/1/2019. ROES excluded because no locations are provided; there are a large number of entries for BBC monitoring but the location of these is unknown.



## Annex A: ✂