Vodafone Submission to Ofcom Call for Inputs: 900/1800/2100MHz Annual Licence Fees (ALFs)

Vodafone welcomes the opportunity to contribute to Ofcom's review of Annual Licence Fees (ALFs) for the 900MHz, 1800MHz and 2100MHz bands. We note that in its review of ALFs during 2023, Ofcom stated its willingness to consider evidence of the fees deviating from market value. BT discussed its request to vary 1800MHz fees with us in advance of submission to Ofcom, and we agreed that it made little sense for multiple licensees to approach Ofcom with similar requests, hence our waiting on Ofcom's call-for-inputs before advancing arguments.

Given Ofcom spent a lot of time developing the distance methodology for assessing spectrum market value and the associated approach to annualising this value into fees, we believe that there needs to be a trigger of new evidence to conclude that a change is needed. We are comfortable that the current annualisation factor represents a reasonable compromise on taking a long-term view on the cost of capital, and would support maintaining the existing figure in order to maintain stability. However, we believe that there are three developments that warrant an update to the market value assessment underpinning ALFs:

1. Technology change to spectrum fungibility

There has been a profound change to the technology capability available to MNOs over the past decade. When 800MHz spectrum was awarded in 2013, its auction value was high because this afforded the only path to deploying the then latest LTE (4G) technology using sub-1GHz spectrum – which has value in providing both indoor and outdoor coverage. This meant that 800MHz was more valuable than 900MHz spectrum, regardless of the technical propagation characteristics being similar; at the time there was no prospect of using 900MHz for the latest technology. Similarly, the award of 3400MHz spectrum in 2018 attracted relatively high prices because it was the only path to deploying NR (5G) technology. Fast-forward to the current decade, and this technology specificity has largely disappeared. Vodafone's valuation of 700MHz spectrum was relatively low, because we were able to deploy NR technology in existing spectrum bands/holdings.

The key message is that the fungibility of spectrum means that (at least within similar bands) there is no particular value in one sub-band over another. Any mobile spectrum can be used for any mobile technology[1]. The consequence for ALFs is that rather than looking at specific bands, instead it is appropriate to group bands of equivalent functionality (propagation characteristics, ability to deploy M-MIMO etc). In broad terms, we suggest the groupings are:

- Deep indoor/outdoor coverage – low-band (700/800/900MHz),
- Shallow indoor/outdoor coverage – lower mid-band (1800/2100MHz) and
- Capacity – upper mid-band (2300/2600/3400MHz)[2].

[1] 700MHz may only/mainly be used for 5G, but this is because there is little point in using it for legacy technology rather than there being any particular barrier to deploying other technologies. Via Dynamic Spectrum Sharing (DSS), 800MHz can support both 4G and 5G; Vodafone is using 900MHz to support 4G and 5G (plus a legacy tail of 2G).
[2] Note that we have excluded 1400MHz from this list as there isn't ideal alignment with any of the groupings, given its downlink-only nature. However, we believe that the outcome of the forthcoming 1400MHz auction will provide Ofcom direct evidence of market value.

Set against this backdrop, there is no reason why the market value of 900MHz would be different to that of 700MHz[3] and, echoing the argument made by BT, that there should be any difference in market value between 1800MHz and 2100MHz. They're interchangeable.

2. Increasing importance of mid-band spectrum

The distance methodology draws heavily on ascertaining the value gradient between low-band and mid-band spectrum, using international benchmarks. However, we believe that this gradient is constantly evolving, due to a combination of increased demand for spectrum that provides network capacity, and technology change that is evolving upper-mid-band/capacity spectrum to having characteristics nearer to lower-mid-band/outdoor coverage spectrum. Having achieved a coverage layer, MNOs' principal focus is on rolling out sufficient capacity spectrum to meet growing consumer demand. Conversely, technology innovations in the deployment of M-MIMO in the 3400MHz band means that cell radii now rival those of 2100MHz.

We would not for one moment suggest that on a per MHz basis, mid-band spectrum has the same value as sub-1GHz spectrum (nor that upper and lower mid-band values have converged). However, there is clearly a flattening of the gradient over recent years, meaning Ofcom needs to treat benchmark data with significant care, especially as that data ages. Due to this uncertainty, the distance methodology should only be used where there is no alternative.

3. Availability of benchmark data

Ofcom developed the distance methodology to address the paucity of UK auction data to directly state UK market value. However, recent UK auctions now provide the information that Ofcom needs to directly examine the market value of spectrum in the UK, particularly when the fungibility of spectrum is considered.

If one is at market in Manchester wishing to buy potatoes, what matters is the selling price for potatoes in Manchester. The latest selling price of potatoes in Birmingham is irrelevant to this question. If there is evidence of the latest selling price for potatoes in Manchester, there is no need to engage a convoluted mechanism of looking at the price of carrots and cabbages relative to potato pricing in Birmingham and Bristol, then multiplying that up by carrot and cabbage pricing in Manchester. If we know the price of potatoes in Manchester, why would we do anything other than directly rely on that price?

The fact that Vodafone concluded it could equally-well use 900MHz to deploy 5G NR coverage demonstrates that it is interchangeable with 700MHz, and we know from the latest 2021 auction data that 700MHz spectrum was valued at £14M/MHz. Applying the distance methodology, with the pitfalls

[3] We note that 700MHz has coexistence requirements with respect to DTT, that could be argued to impact its value. However, 900MHz also has coexistence requirements with GSM-R which has a material impact on deployment, especially for Vodafone as the adjacent licensee.

of international benchmarks and evolving value gradient, is both unnecessary and potentially misleading: the 2021 auction outcome tells us that 900MHz is valued at £14M/MHz.

Vodafone commissioned economic experts Frontier Economics to examine the developments that Ofcom should consider when determining whether the current level of ALFs materially differ from spectrum market value. We present their analysis, which provides more detailed evidence of the points that we raise above, as Annex 1 to this submission.

Whilst not uncontroversial (due to the need to exercise considerable regulatory judgement), the distance methodology has served Ofcom well in setting ALFs. However, it was only developed as a second-choice alternative to be used when directly-relevant auction data was unavailable. When there is directly-applicable auction data, there is no argument for using the distance methodology in preference to using that auction data[4]. We assert that this is the case for 900MHz, as it is interchangeably usable with 700MHz.

Frontier also raise important arguments about the overall value of spectrum. Ofcom's analysis to-date has assumed that spectrum values are broadly constant in real terms – hence increasing historic auction outcomes by inflation when restating them in current terms, and also the ongoing inflation-indexing of ALFs. However, this omits two considerations:

1. Ofcom's previous analysis assumed that inflation would not deviate widely from the Bank of England's target of 2%. Clearly this has not been the case in the last few years, with the macro-economic shocks of COVID followed by the invasion of Ukraine. There is strong evidence that assets do not increase in value in-line with inflation when there are inflation-shock events; we would add that when this principle is applied to spectrum, it cannot be credibly argued that spectrum has increased in value by 25% over the last couple of years (when there has been no corresponding increase in industry revenues).
2. Absent inflationary shocks, it may be reasonable to consider that *overall* spectrum values increase in-line with inflation, or at least in-line with industry revenues. However, ALFs do not apply to *overall* spectrum, instead they are applied on a unit/per-MHz basis. Our challenge is whether it is credible that the spectrum stocks/supply available to the industry has doubled over the last decade, while there has been no corresponding increase in demand (i.e. mobile industry revenues), yet the methodology adopted by Ofcom assumes the **unit** value of spectrum remains the same in real terms.

Absent better information we do not argue that Ofcom should abandon the approach of inflating ALFs according to CPI, but we do believe that there needs to be a regulator on this – that the value of CPI be

[4] The only argument for not using that data could be that auction bidding behaviour could theoretically be influenced by a desire to subsequently suppress ALFs. However, MNO auction strategy is determined by our private value for spectrum in terms of cost avoidance plus potential commercial benefit – it would be supremely speculative to modify bidding behaviour on the off-chance of potentially reducing future ALFs. Even if that was a feasible strategy, a bidder pursuing this approach would hand spectrum to its competitors in the auction for a price below market value. It would be an illogical and commercially-damaging thing to do.

capped at a level to ensure that it doesn't erroneously assume inflation shock values are grand-fathered into spectrum values. For example, a 4% cap could be applied moving forward (being double the anticipated long-term rate). Likewise, auction values should be indexed forward to current values using the 2% inflation rate that Ofcom assumed when originally devising the methodology.

Recommendations

Given Frontier's analysis, we suggest the following:

1. 900MHz lump sum value should be set according to the functionally-equivalent 700MHz auction outcome.
2. When inflation-indexing the 700MHz valuation from 2021-2024, ideally a value of 2% p.a. should be used, but at worst inflation should be capped at 4% p.a..
3. 1800MHz ALFs should be set according to the functionally-equivalent 2100MHz ALFs.
4. 2100MHz ALFs should be rebaselined to remove the effect of inflation shock which is not reflected in a corresponding increase in spectrum value. Ideally a value of 2% p.a. should be used from the original fee set, but at worst inflation should be capped at 4% p.a..[5]
5. Maintain annualisation factor as set by the 2100MHz ALF analysis.
6. In the event that Ofcom does not accept our arguments on spectrum fungibility (and can provide compelling evidence to refute our arguments), then at the very least the impact of the global inflation shock should be stripped out of existing 900/1800/2100MHz ALFs, i.e. the forward-looking ALFs to be rebaselined to incorporate a maximum of 4% p.a. inflation from 2021 onwards.

Vodafone UK
September 2024

[5] We do not argue that there should be any reimbursement for over-inflated ALFs in past years – our focus is on getting the correct baseline moving forwards.

Annex A
Frontier Economics: "Ofcom 2024 Review of Annual Licence Fees"

See separate file