



Arqiva's Response to the Ofcom Consultation on Setting licence fees for 412 MHz

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Executive Summary

Arqiva is the licence holder, along with Airwave, of the 412 MHz spectrum and has held the spectrum since it was awarded through an auction in 2006. Arqiva uses the spectrum to operate a smart metering network for the water and energy sectors delivering important value to society by delivering a reduction in water use, energy and greenhouse gas emissions contributing to the UK's efforts to combat climate change. Airwave uses its share of the spectrum to provide critical communications services to the Police and the other Emergency Services.

Arqiva welcomes the opportunity to respond to this consultation and it urges Ofcom to look again at the valuation methodology it has adopted, the level of licence fee it is proposing and the phasing of the implementation. This point of view is informed by the following:

- The AIP methodology used by Ofcom significantly overstates the demand from business radio as an alternative UK-wide use and produces markedly different results than the methodology adopted to set AIP levels for comparable spectrum bands – adjusting the methodology and/or adopting the approach used for other bands would both produce a level of AIP up to 10x lower;
- Ofcom has not considered the low level of demand for alternative uses to the 412 MHz spectrum, including business radio, driven by the wide range of alternative technologies now operating across other licenced and un-licenced spectrum bands that are available;
- Ofcom has not adhered to its principles of allowing for uncertainty when estimating the opportunity cost of spectrum use or taking into consideration the detrimental impact of its proposals on investment, incentives and competition in the market;
- Any application of the AIP should incorporate a phased implementation so it can be fairly reflected in Arqiva's commercial relationships. Arqiva's contracts in this area are typically long-term in nature and given the uncertainty in the quantum of any potential AIP and Arqiva's reasonable expectations that it would be lower, it was not feasible to include this in its commercial contracts.

Arqiva's thinking and analysis has been informed by work undertaken by Frontier Economics which has reviewed Ofcom's proposals and provided a view on whether it is consistent with Ofcom's spectrum management objectives. This work concludes that Ofcom has significantly over-estimated the level of licence fee which should be applied and that adopting an appropriate methodology and principles should result in a licence fee of **£156,000 – £261,600 per annum versus the £1,584,000 proposed by Ofcom**. It also concludes that a glidepath should be introduced to phase in any licence fee as Arqiva could not have anticipated the level of fee and there is risk that without this, innovation, competition and societal benefits could be stifled.

In this response Arqiva outlines the rationale for this view and requests that Ofcom reviews its assessment of the level of AIP fee applicable.

Ofcom's approach to applying AIP is not appropriate and a more reasonable approach under the same methodology would lead to much lower fees

Ofcom has used business radio – which is typically used for voice communications in a specific area – as the most likely alternative use for the 412 MHz spectrum. It observes that in some locations there is excess demand for spectrum amongst business radio users and therefore they might wish to use the 412 MHz band as an alternative.

Whilst this may be the case in some locations Ofcom has assumed that this is the case in all locations and at a national level. This appears to be flawed logic. Just because there is excess demand in some – typically dense urban areas – it cannot be assumed that this applies in all locations or across all nations of the UK. To do so, and just apply the benchmark of business radio pricing from high demand areas,

massively over-estimates the opportunity cost of the spectrum and is certainly not consistent with adopting a cautious or conservative approach to setting fees. It is not clear to us why Ofcom has adopted an approach which assumes areas and, ultimately, users in Scotland, Wales or in rural areas should be paying the same price for the spectrum as, for example, dense urban areas in England.

If this approach is modified and only areas where there is likely to be genuine evidence of excess demand for spectrum are included, namely London and a few other metropolitan areas, this should result in a licence fee of, at most, between £189,600 and £261,600 per annum. A significant reduction on that proposed by Ofcom.

Ofcom has been inconsistent in the methodology it adopts and if it followed the approach it applied for the 900 MHz, 1800 MHz and 2100 MHz bands it would result in much lower fees

The case for a lower level of fees is strengthened by the fact that Ofcom has not been consistent in how it has set AIP-based licence fees. In the case of 900 MHz and 1800 MHz spectrum in 2018 it adopted a methodology whereby it used the price for 800 MHz spectrum as an anchor point and then used international benchmarks of the difference in price between 800 MHz and 900 MHz and 1800 MHz to determine a ratio and applied this to set the licence fee in those bands in the UK. We note that Ofcom has also adopted this methodology in its current consultation around fees for 2100 MHz spectrum.

If Ofcom had chosen to adopt the same methodology with the 412 MHz spectrum and the recent 700 MHz auction prices used as the most up to date market benchmark, then evidence from international markets, most notably Norway and Sweden, suggests that the 412 MHz spectrum should be valued around 19-22% less than the 700 MHz band. This would suggest a fair level of licence fee for 412 MHz spectrum should be around 10% of the level proposed by Ofcom - £156,244 per annum rather than the £1,584,000.

Arqiva does not understand why Ofcom has not taken this into account given that it felt that the methodology was acceptable in 2018, and is currently using it for the 2100 MHz spectrum, and given the uncertainties that exist when adopting its alternative approach of assuming blanket excess demand for public radio across the whole of the UK. A more rounded, considered and cautious approach should be adopted, and Arqiva asks that Ofcom revisits its thinking.

This is particularly the case as Ofcom has valued the spectrum at 10x more than if it had used the methodology it uses for comparable spectrum and which it is currently proposing in its open consultation on AIP for the 2100 MHz band. Arqiva asks that Ofcom looks at the outcome of the different methodologies it is choosing to adopt – in this case it suggests that the 411MHz spectrum, a narrow band with fairly limited uses, is nearly as valuable as the 2100 MHz band which will be used for consumer mobile services where there would be strong demand in any market-based allocation.

Ofcom has not considered the impact of existing and emerging technologies on demand for 412 MHz spectrum which should translate into a much lower level of fees

Since the spectrum was awarded in 2006, a growing range of new technologies have become available to serve the same needs as the 412 MHz spectrum. This further reduces the alternative value of this spectrum. A further important point which demonstrates why the licence fee for 412 MHz spectrum should not be set at such a high level is that the reality in the market is that.

The introduction of 5G (enabled by the additional spectrum that has been cleared for its use) offers significant advantages over solutions for business radio using dedicated spectrum. In addition, there is 'Push-To-Talk over Cellular' (known as PTTToC or POC), which allows devices connected to a cellular network to function as if they are on a radio network and which can also be viewed as a substitute. Notwithstanding these alternatives, there is a growing range of other Low-power wide-area network

technologies which deliver the same or similar services including LTE-M and NB-IoT using cellular networks or Sigfox and LoRA utilising unlicensed spectrum.

Taking into account this growing set of alternative network technologies which business radio or other alternative users of the 412 MHz spectrum makes the clear case that the opportunity cost of Arqiva's use of the spectrum is likely to be relatively low and only set to diminish over time.

Arqiva noted that the evidence provided in the consultation by Ofcom did not consider these important supply-side factors in setting its proposed level of licence fee. For this reason, our suggestion is that Ofcom reviews this area again and brings in its very experienced and expert technology function to provide a view. Ofcom produced an excellent report 'Technology Futures'¹ in January 2021 which looked at technologies shaping communications for the future. It covers the technologies mentioned above and should have provided a strong basis on which to inform the setting of licence fees in the 412 MHz band.

Ofcom has not taken into account the uncertainties and risks associated with setting fees at such a high level

Arqiva is concerned that Ofcom has not fully considered the risks associated with its provisional licence fee. In Ofcom's own guidance and approach to setting AIP it acknowledges that setting a licence fee too high risks spectrum being left unused or having unintended consequences in the market. To avoid this risk, Ofcom expresses a clear preference for a licence fee that may potentially be too low rather than too high and typically seeks to estimate licence fees on a cautious, conservative basis.

Arqiva does not believe that Ofcom has adopted this approach in this case and has not factored in the risks of setting fees at such a high level. Arqiva's use of the spectrum for smart metering generates positive externalities which benefit UK society, including water and energy saving and a reduction in greenhouse gas emissions. This has been recognised in the recent Climate Change Committee progress report² which reported Arqiva's work and the potential for a full rollout of smart water meters to save 0.5% of the UK's total Greenhouse Gas emissions and contribute significantly to meet climate change targets and move to net zero. Applying licence fees at such a level could hinder meeting this level of rollout and targets.

Furthermore, there is also the real risk of undermining competition in the downstream market in which Arqiva operates. Arqiva competes against other providers which have different cost structures many of which use unlicensed spectrum or cellular spectrum. This means that Arqiva will struggle to pass on cost increases to its customers, given that Arqiva does not have market power and other competitors are not affected by the introduction of the licence fee for the 412 MHz band. By overstating the value of 412 MHz spectrum and setting the licence fee too high, Ofcom risks undermining competition in the downstream markets in which Arqiva operates.

Arqiva asks that Ofcom reassesses its approach and that it takes into account the risks of distorting competition in the market and the risks of undermining the wider external and societal benefits of Arqiva's use of the spectrum if sets the AIP rate too high. Given the uncertainties involved it should adopt a cautious approach.

A glidepath should be introduced to mitigate any un-intended consequences and the fact that the level of fees could not be anticipated by Arqiva

¹ https://www.ofcom.org.uk/__data/assets/pdf_file/0011/211115/report-emerging-technologies.pdf

² [Progress-in-adapting-to-climate-change-2021-Report-to-Parliament.pdf](https://www.thecc.org.uk/progress-in-adapting-to-climate-change-2021-report-to-parliament.pdf) (thecc.org.uk)

Whilst the licence for the 412 MHz band does highlight that a licence fee will be applicable from October 2021, prior to publication of the consultation Arqiva had not received any guidance from Ofcom as to the likely level.

Since securing the spectrum Arqiva has made significant investments in its infrastructure so that it can provide connectivity for smart meters to support the rollout of these vital services to the energy and water sectors, contributing to energy efficiency, reduced water use and greenhouse gas emission targets. Arqiva has long-term contracts and provides an important service for society.

Arqiva could not have anticipated the level of licence fee proposed by Ofcom and therefore it would have been impossible for it to factor this into contracts or its investment decisions. Arqiva's reasonable expectations were that Ofcom would be consistent in its approach in applying AIP and that it would continue with its stated preference for setting licence fees on a conservative and cautious basis. Arqiva was expecting a much lower level of fee based on the information set out above.

Arqiva notes that in other sectors and spectrum bands Ofcom has adopted a phased approach to licence fees. This includes the aeronautical sector where AIP was phased in over a 5-year period with other time periods applying in other cases.

Arqiva requests that in addition to reviewing the level of the licence fee that a phased approach is adopted. This will provide time to adjust to the level of any fee and minimise the impact on its ongoing innovation and contractual discussions with customers. This will help to maximise the investment that can go into these important new services helping to support the UK's green agenda and sustainability targets across the water and energy sectors.

The remainder of our response is structured as follows:

- Information about Arqiva;
- Response to the individual consultation questions;
- Supporting evidence – report by Frontier Economics.

About Arqiva

Arqiva is a communications infrastructure and media services company, operating at the heart of the broadcast and wireless communications industry in the UK. It is at the forefront of network solutions and services in an increasingly digital world. Arqiva provides energy metering services in the North of England and Scotland to the DCC through the Government's energy metering programme and it is a large-scale provider of smart water infrastructure in the UK. It has contracts with some of the UK's largest water companies, including Anglian Water, Thames Water and Yorkshire Water.

Arqiva builds and monitors the digital infrastructure which facilitates the operation of smart metering networks, through its radio network and use of the 412 MHz spectrum. In addition, Arqiva has a growing portfolio of complementary services, for example designed to support water companies and consumers to manage water use and minimise leakage. Over time these services will help to address issues across the network from clean water generation through to distribution to wastewater and sewage.

As a Critical National Infrastructure provider Arqiva's broad system of connectivity solutions and managed services provides a base to serve the growing needs of the water and energy sectors. Arqiva is actively investing to enable us to support these sectors as they develop and look to reduce their energy consumption, greenhouse gas emissions and environmental impact.

Arqiva is owned by a consortium of infrastructure investors and is headquartered in Hampshire, with major UK offices in London, Buckinghamshire and Yorkshire and operational centres in Greater Manchester, West Midlands and Scotland.

Response to consultation questions

Question 1: Do you agree with our provisional conclusion that there is likely to be excess demand for the 412MHz band in future and that therefore an AIP fee is appropriate? Please provide any evidence to support your position

No. See the arguments set out in our summary and in the report by Frontier Economics. Ofcom has not demonstrated a clear case that there is excess demand across the UK for the 412 MHz spectrum. There are two areas where Arqiva feels that Ofcom has significantly over-estimated the potential excess demand.

First, there are growing range of potential technologies available to serve the needs of alternative use cases for the spectrum including for business radio. This includes 5G, 'Push-To-Talk over Cellular' (known as PTTToC or POC), Low-power wide-area network technologies including LTE-M and NB-IoT based on cellular networks and Sigfox and LoRA based on unlicensed spectrum.

Taking into account this growing set of alternative network technologies which business radio or other alternative users of the 412 MHz spectrum could, and are increasingly likely to, adopt should have led to a conclusion that that the level of excess demand is low and likely to diminish over time.

Second, Ofcom's methodology has assumed that whilst there may be pockets of excess demand in specific dense, urban locations that there is somehow excess demand at the same level across the whole of the UK. Arqiva does not believe that to be the case and does not feel that Ofcom has provided evidence of this being so.

Arqiva believes that Ofcom should adopt a more cautious, conservative and evidence-based approach and, on the technology side, ensure that it has engaged its technology team to provide an up to date view on the potential impact of available technologies on the likely level of excess demand for 412 MHz spectrum now and over time.

Question 2: Do you agree with our provisional conclusion that UK-wide exclusive Business Radio is the highest value alternative use for the 412MHz band? Please provide any evidence to support your position

Business radio may be the highest value alternative use in some locations, but it is not clear, and Ofcom has not provided sufficient evidence, that this applies across the whole of the UK. In some areas there might not be a meaningful or valuable alternative use. Arqiva feels that Ofcom should reassess its methodology to take this into account. Furthermore, as set out above, the growing range of technologies available to serve the needs of business radio users or other alternative use cases for the 412 MHz spectrum should lead a conclusion that the value for alternative uses is low and set to diminish over time.

As set out in our summary and through the report by Frontier Economics, Arqiva does not feel that Ofcom has been consistent in the application of its methodology in setting the AIP. It is highlighted that the approach adopted for the 900 MHz and 1800 MHz bands, and in the open consultation on charging for 2100 MHz spectrum, drawing on international benchmarks and real market data from the 700 MHz spectrum auction would lead to a licence fee 10x lower than that currently proposed by Ofcom.

Given the uncertainties involved in setting AIP rates Ofcom should draw on a variety of available evidence and, where alternative methodologies it has adopts suggest a much different result, it should take this into account.

Question 3: Do you agree with our provisional conclusion to set the annual licence fee for 412 MHz equal to the Business Radio UK-wide fee for high usage bands? Please provide any evidence to support your position

No. As set out in the response above, Arqiva does not believe it is the case and Ofcom has not provided sufficient evidence that there is excess demand for 412 MHz spectrum from business radio in all locations of the UK. It is therefore not appropriate to assume that the licence fee should be equal to the Business Radio UK-wide fee for high usage bands. This massively overestimates the potential value. Arqiva believes that Ofcom should adopt a more cautious and conservative approach in line with its own guidance and best practice in setting AIPs.

Ofcom should adjust its methodology and consider a balanced range of factors in determining a rate. This means only estimating rates where there is proven evidence of local excess demand from public radio, taking into account the growing range of technologies available to serve the needs of business radio users or other alternative use cases for the 412 MHz spectrum and taking into account the alternative approach to informing the rates based on the methodology adopted for the 900 MHz, 1800 MHz and 2100 MHz bands.

This should lead to a level of licence fee 10x lower than that currently proposed by Ofcom. Given the uncertainties involved in setting AIP rates Ofcom should draw on a variety of available evidence and, where alternative methodologies it adopts in other cases, including its current assessment of the 2100 MHz band, show a much different result it should take this into account.

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?

Arqiva believes that Ofcom should ensure that it takes into account a range of factors when it estimates the potential market of the 412 MHz spectrum. Arqiva does not feel that it has done so in this case.

Reiterating our points above, Ofcom should adjust its methodology and consider a balanced range of factors in determining a rate. This means only estimate rates where there is proven evidence of local excess demand from public radio, taking into account the growing range of technologies available to serve the needs of business radio users or other alternative use cases for the 412 MHz spectrum and taking into account the alternative approach to informing the rates based on the methodology adopted for the 900 MHz, 1800 MHz and 2100 MHz bands.

Furthermore, Arqiva is concerned that Ofcom has not fully considered the risks associated with its provisional licence fee and has not factored in the risks of setting the licence fee too high or having unintended consequences in the market. Frontier Economics has highlighted that through Ofcom's guidance around AIP and its application in other areas, Ofcom expresses a clear preference for a licence fee that may potentially be too low rather than too high and to estimate licence fees on a cautious, conservative basis. Arqiva does not believe that Ofcom has adhered to this in its proposed approach to setting licence fees in this instance.

Arqiva's use of the spectrum for smart metering generates positive externalities which benefit UK society, including water and energy saving and a reduction in greenhouse gas emissions. Applying licence fees at the level proposed by Ofcom could hinder the rollout of important smart metering technology and deprive the UK of these important benefits. There is also the real risk of undermining competition in the downstream market in which Arqiva operates. Arqiva competes against other providers which have different cost structures many of which use unlicensed spectrum or cellular spectrum. This means that Arqiva will struggle to pass on cost increases to its customers, given that Arqiva does not have market power and other competitors are not affected by the introduction of the

licence fee for the 412 MHz band. By overstating the value of 412 MHz spectrum and setting the licence fee too high, Ofcom risks undermining competition in the downstream markets in which Arqiva operates.

Question 5: Are there any other comments that you wish to make in respect of the proposals that we make in this consultation?

Arqiva requests that Ofcom reconsiders its approach to setting the licence fee for 412 MHz spectrum and takes into consideration the points made above which would lead to a fee around 10x lower than currently proposed by Ofcom.

A further point relates the phasing of the introduction of any fees. Whilst the licence for the 412 MHz band does highlight that a licence fee will be applicable from October 2021, prior to publication of the consultation Arqiva had not received any guidance from Ofcom as to the likely level.

Since securing the spectrum Arqiva has made significant investments in its infrastructure so that it can provide connectivity for smart meters to support the rollout of these vital services to the energy and water sectors, contributing to energy efficiency, reduced water use and greenhouse gas emission targets. Arqiva has long-term contracts and provides an important service for society.

Arqiva could not have anticipated the level of licence fee now proposed by Ofcom and, therefore, it would have been impossible for it to factor this into contracts or its investment decisions. Arqiva's reasonable expectations were that Ofcom would be consistent in its approach in applying AIP, including the approach it adopted in 2018 for the 900 MHz and 1800 MHz bands, and that it would continue with its stated preference for setting licence fees on a conservative and cautious basis. Arqiva was expecting that any fee would take into account the growth in alternative technologies, particularly those using cellular and 5G and unlicensed bands which limits the opportunity cost of the 412 MHz spectrum. Given this, Arqiva was expecting a far lower level of fees than has been proposed by Ofcom.

Arqiva notes that in other sectors and spectrum bands Ofcom has adopted a phased approach to licence fees. This includes the aeronautical sector where AIP was phased in over a 5-year period with other time periods applying in other cases.

Arqiva requests that in addition to reviewing the level of the licence fee that a phased approach is adopted. This will provide time to adjust to the level of any fee and minimise the impact on its ongoing innovation and contractual discussions with customers. This will help to maximise the investment that can go into these important new services helping to support the UK's green agenda and sustainability targets across the water and energy sectors.

Appendix - Supporting evidence: Report by Frontier Economics

See separate supporting document.