

Ofcom's Future Approach to Mobile Markets Discussion Paper

Introduction

Ofcom has focused the provision of spectrum access to Mobile Operators over the last 20 years, but it is important that Ofcom does not lose sight of the spectrum access needs of other platforms / systems, e.g. Energy Network Operators, Broadcasting, Transport, PMSE, etc. To this end we are very supportive of the work underway in Ofcom's 'Spectrum for Utilities' study and our response centres on the importance of ensuring that appropriate spectrum access is afforded to other users in order to support Government policy, i.e. the 'Net Zero' transition.

Background – JRC Limited

JRC Ltd is a wholly owned joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries used to support operational, safety and emergency communications. JRC manages blocks of VHF and UHF spectrum for Private Business Radio applications, telemetry & tele-control services and network operations. JRC created and manages a national cellular plan for co-ordinating frequency assignments for a number of large radio networks in the UK. As critical systems users, the Joint Radio Company (JRC) welcomes the opportunity to respond to this consultation on behalf of the electricity and gas network operators. JRC highlights that communication networks are dependent on access to resilient and robust electricity supplies. As the smart grid evolves, existing monitoring and control systems will need to be significantly expanded and extended. This expansion in the operational communications needs of the energy utilities will require access to additional spectrum.

JRC Response

JRC welcomes the opportunity to respond to this discussion document in light of Ofcom's focus over the last 20 years which has been the provision of increased spectrum access for the Mobile Operators with the displacement of other services, e.g. Broadcasting, PMSE, Fixed Links, Satellite, etc. It is imperative that Ofcom take a proportionate view of spectrum access needs of the Mobile Operators over the long term particularly in terms of the regulatory context in which they operate. As noted by Ofcom the market mechanisms approach has delivered good value for citizen-consumers, but they also acknowledge that as a result of the regulatory framework there has been a need for discrete interventions to address market failures, i.e. the need for government funding alongside the MNO funding (Shared Rural Network¹) to enhance service coverage for consumers and transport corridors. In addition, Ofcom note that there is no clear measure of service quality but assume that the choice presented by a competitive market would ensure the opportunity to switch. Ofcom's analysis suggests that the threat of and or the imposition of additional regulations on the Mobile Network Operators to facilitate outcomes that do not result from Market mechanisms will result in lower investment and potentially a flight of capital away from the UK Mobile Operators with the resultant reduction in service offering and choice over time.

At a time when resilience in the UK's critical infrastructure is under significant scrutiny (especially the energy sector following the winter storms of 2021 – 2022) it is clear that the Public Mobile Networks have not been designed to be resilient to mains power loss see ANNEX and also a Whitepaper recently published by JRC which explores the limitations of Public Mobile Networks when being considered against the operational requirements of mission critical networks². Furthermore, dialogue between the Energy Network Operators and both the Fixed and Mobile Network Operators indicates that they expect the Energy Networks to support their operational performance through a stable and robust supply capability. To ensure operational integrity of the energy networks they depend on 'in-house'

¹ [Shared Rural Network deal to address poor mobile coverage in rural UK \(governmentcomputing.com\)](https://www.government.computing.com)

² JRC Whitepaper, 'Operational Control of Mission Critical Networks and the Service Limitations of Public Mobile Networks,' April 2022, www.jrc.co.uk/publications-press

Operational Telecommunications (OT) systems that are designed to operate in the event of mains power loss. However, the existing OT systems do not have the capacity and capability to address the 'smart grid' connectivity and digitalisation requirements of the Energy Network Operators to facilitate the 'Net Zero' transition whilst maintaining a reliable, safe energy system delivering affordable energy to consumers. To this end JRC and its Members have been working closely with Ofcom as part of the 'Spectrum for Utilities' study to ensure the appropriate spectrum access outcome is afforded to the sector. A recent study by Gemserv^{3,4} exploring the options for OT delivery; Fixed, Public Mobile and Private Radio, has demonstrated that the Private Radio solution is the least cost solution, subject to spectrum access. Gemserv's work also indicates that for a Public Mobile Solution to be designed to be resilient to mains power loss a significant investment of circa £414m would be required, assuming that there is the physical capacity to accommodate the additional infrastructure which is understood may not be the case.

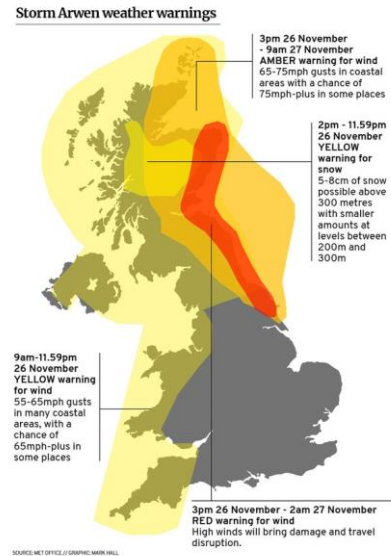
In light of the significant change to the Telecommunications Regulatory framework and profound change to the operating model of the Public Mobile Operators to facilitate outcomes such as Operational Resilience and guaranteed Quality of Service that would be necessary to ensure the OT system needs of Critical National Infrastructure operators, e.g. Energy Network Operators, investments that have not to date been justified by Operators under market mechanisms and would likely fall to the 'Public Purse.' Rather a focused intervention through the granting of spectrum access to the Energy Network Operators would be the most targeted and cost-effective approach for UKPlc based on the findings of Gemserv. To this end, we encourage Ofcom to focus their efforts on ensuring the MNOs are delivering the best possible consumer offering that market mechanisms will provide whilst ensuring that the appropriate regulatory intervention of dedicated spectrum access is afforded to Industry sectors such as Energy Utilities to allow the relevant infrastructure for critical operational data & voice services to be deployed.

³ [Energy customers could save up to £25 a year off their bill with networks using radio spectrum to deliver smart grids - Gemserv](#)

⁴ [Economic rationale for enabling Smart Grid functionality of the UK energy system via a Private Radio Frequency-based enhanced Operational Communications Solution \(jrc.co.uk\)](#)

ANNEX A

Case Study – Storm Arwen the Communications Challenge



An article by the BBC⁵ has highlighted the issues posed by Storm Arwen in particular the limitations associated with the migration from PSTN based services by Openreach whilst also acknowledging the issues resulting from the loss of mobile services due to mains power failure. The lack of robust and resilient public communications networks clearly poses a problem for consumers to be able to communicate with Friends, Family & Emergency Services, but also poses a significant challenge for the Energy Network Operators to be able to communicate with its customers in the event of an emergency of this type. Furthermore, from an operational perspective there is a clear need for the Energy Network Operators to be able to access suitably robust and resilient wide area voice communications capability to facilitate system restoration in such an event and this requirement cannot be supported by Public Mobile Networks.

In addition to the above;

- An [article](#) has been published by a regional paper after Andrew Bowie MP (Con, West Aberdeenshire and Kincardine) publicly urged Energy Minister Greg Hands to call for an Ofcom review of mobile communications network resilience during adverse weather. Bowie observed that DNOs' efforts to reconnect customers experiencing power outages from Storm Arwen were hampered by reliance upon mobile communications systems which collapsed during the storm.
- Richard Holden MP's (Con, North West Durham) constituency was severely impacted by Storm Arwen, leaving many of his older constituents in rural areas without mobile signal due to their reliance on VOIP connections. Notably, there has been a [petition](#) in Holden's constituency calling on BT Openreach to discontinue the VOIP rollout which has already received 400 signatures. In Parliament, he has highlighted the need for energy companies to engage with local resilience forums but has not raised the vulnerability of mobile networks.

⁵ <https://www.bbc.co.uk/news/uk-england-cumbria-59564480>, Storm Arwen: Why power cuts left people unable to phone for help, December 12th 2021.