Your response

Executive Summary

As critical systems users, the Joint Radio Company (JRC) welcomes the opportunity to respond to this consultation on behalf of the electricity and gas utility operators. JRC highlights that communication networks are dependent on access to resilient and robust electricity supplies. Also, with the evolving Smart Grid, that the existing intelligent electricity monitoring and control systems are being expanded to the extremes of the electricity network. This expansion in the operational communications needs of the energy utilities will require access to additional spectrum. This developing need is being explored within Ofcom's current direct engagement with the Energy Utilities which we welcome. To this end we encourage Ofcom to establish a specific work item to further this Industry need. This may be pursued under the heading of '**Managing spectrum and planning for future requirements**' within the Annual Plan. It is worth noting the ongoing developments within the Republic of Ireland where the Communications Regulator (ComReg) has acknowledged the need for additional spectrum to be made available to facilitate Smart Grid developments and in so doing is proposing to afford access to 2 x 3 MHz of spectrum in the 400 MHz range for the Irish utilities.

With Climate Change and Energy Security becoming major global issues, Governments and Regulators in most countries are addressing the new communications requirements for energy utilities. It would therefore be appropriate for Ofcom's 2019/2020 Annual Plan to reflect this global movement and include a specific work item evaluating spectrum requirements for utilities.JRC welcomes the essential work of the Ofcom Field Teams and Spectrum Licensing Teams in support of the day-to-day operational telecoms needs of the energy networks.

The Joint Radio Company Ltd (JRC)

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.

The VHF and UHF frequency allocations managed by JRC support telecommunications networks to keep the electricity and gas industries in touch with their field engineers throughout the country. These networks provide comprehensive geographical coverage to support the installation, maintenance and repair of plant in all weather conditions on a 24 hour/365 days per year basis.

JRC's Scanning Telemetry Service is used by radio-based System Control And Data Acquisition (SCADA) networks which control and monitor safety critical gas and electricity industry plant and equipment throughout the country. These networks are designed to provide resilient and reliable communications to unmanned sites and plant in remote locations to maintain the integrity of the UK's energy generation, transmission and distribution system.

JRC also manages microwave fixed link and satellite licences on behalf of the utility sector.

JRC supports the European Utility Telecommunications Council's (EUTC) Radio Spectrum Group and participates in other global utility telecom organisations. JRC participates in European Telecommunications Standards Institute (ETSI) and ITU-R working groups developing new radio standards and recommendations; plus European telecommunications regulatory groups and workshops.

JRC works with the Energy Networks Association's Future Energy Networks Groups assessing ICT implications of Smart Networks, Smart Grids & Smart Meters and is an acknowledged knowledge source for cyber-security in respect of radio networks.

JRC Response

Ofcom plays an important role in providing access to spectrum to the electricity utilities so that they can deliver a stable and efficient supply of electricity to the UK's citizens and consumers in addition to the organisations that provide products / services that depend on electricity, e.g. broadcasting, broadband, and mobile 2G / 3G / 4G / 5G networks.

The monitoring and control of the electricity grid system is dependent on 2 MHz of 400 MHz Band licensed spectrum allocated by Government to the energy utilities. The ever-increasing demand to manage the wider electricity network necessitates access to additional licensed spectrum for the energy utilities ideally 2 x 3 MHz of 400 MHz Band. JRC is therefore pleased to see within Section 4.19 of the Annual Plan that Ofcom will be '… analysing the use of spectrum across specific sectors to support our strategic reviews and inform our policy'. Also, within Annex 2, Ofcom's **Developing an updated spectrum strategy** statement that 'We will continue our work to develop our spectrum strategy, gathering information from stakeholders to ensure that spectrum is made available to meet changing requirements.' To this end, we welcome the current industry engagement being undertaken by Ofcom to establish a more detailed understanding of the Operational Telecommunications needs, both now and in the future, of the energy utilities. The timing of this is particularly relevant in light of the anticipated network benefits to be realised from future Smart Grid developments which are central to Government Energy Policy. (NB: the spectrum requirements for the control of the Smart Grid should not be confused with the less stringent requirements associated with Smart Meters monitoring.)

It is worth noting the ongoing developments in the Republic of Ireland where the Communications Regulator (ComReg) has acknowledged the need for additional spectrum to be made available to facilitate Smart Grid developments and in so doing is proposing as a minimum to afford access to 2 x 3 MHz of spectrum in the 400 MHz range for the Irish utilities. Moreover, ComReg summarises in Chapter 2[1] of ComReg Consultation 18/92 the International developments relating to the 400 MHz Band of which Ofcom has provided significant input.

JRC is pleased that Ofcom recognises the importance of ensuring that Network and Information Systems (NIS) need to be of high quality and secure. Electricity and gas grid control systems already have a very high level of security, in most instances being isolated from public telecommunications networks, especially the public internet Utility Operational Telecoms systems are designed to high levels of availability and resilience, with critical elements having at least 72 hours of independent power back-up. From 2020, utility control telecommunications will be mandated to meet the requirements of the 'Security of Network and Information Systems (NIS) Regulations 2018'. Current estimates are that this

[1] ComReg Consultation 18/92, 'Further Consultation on the Release of the 410 – 415.5 / 420 – 425.5 MHz Sub-band, 24th October 2018. https://www.comreg.ie/publication/further-consultation-on-the-release-of-the-410-415-5-420-425-5-mhz-sub-band/

is likely to increase the data payload of utility operational telecoms systems by a factor of four, adding a further dimension to the need to increase telecommunications capacity with consequential impact on radio spectrum requirements.

In summary, access to additional spectrum is becoming increasingly important for the energy utilities to enable future operational enhancements and facilitate consumer and citizen needs, e.g. increased Electric Vehicle charging and more Distributed Generation. We therefore encourage Ofcom to continue to show leadership in terms of its role in affording spectrum access for the industry and in due course establish spectrum access arrangements that will support the enhanced network functionality demanded.

Ofcom Spectrum Licensing Teams:

JRC welcomes the essential work of Ofcom's Spectrum Licensing Teams. The timely processing of licence applications / variations to facilitate the operational needs of critical national infrastructure is essential to the continued smooth running of the UK's evolving electricity and gas Smart Grid systems.

It is very much appreciated by JRC, with its many hundreds of licences, that we have access to a central point of contact within the Licensing Team. This enables most issues to be resolved more quickly than may otherwise be the case.

Ofcom Field Engineering Teams:

JRC appreciates the hard work of Ofcom's Field Engineering Teams especially with their prompt attention to resolving harmful interference issues. This work is essential for the continued smooth running of the UK's evolving electricity and gas Smart Grid systems.