

### **Introduction - Minister Thomas**

- Policy and Strategy – Richard Oliphant
- 5G in Context – Ivan Kiely
- Permitted Development – Jennifer Chance
- Health Issues in Perspective - Henrietta Ewart
- Q&A

### **Policy and Strategy**

- Chief Ministers Committee Report
  - Received by Tynwald in May 2018
  - Identified the importance of new technology such as 5G
- National Telecoms Strategy
  - Unanimously approved by Tynwald in October 2018
  - Supportive of 5G implementation
- Programme for Government
  - Enterprise and opportunity Island

### **Value of mobile networks to our economic and social development**

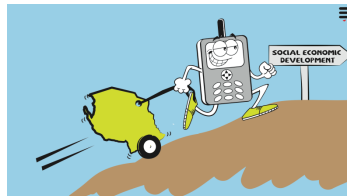
Through revenue generation, investment and employment

They allow businesses and consumers to increase productivity

As mobile networks are used for an increasingly wide range of functions, their economic and social impact will continue to rise

There are over 88,000 mobile phones on Island increasingly used to communicate, work, play, transact, and to contact the emergency services

**Without them we would not attract new business to the island and existing ones (and people) would leave**



### **5G in Context**

- 5G is scheduled to be fully standardised and ratified at the end of 2019 as part of the IMT2020 vision.
- It will enable higher download speeds for consumers, massive machine-to-machine (IoT) connections, and provide low latency for critical communications.
- It is expected that in the Isle of Man that the key bands for delivery of 5G will be 700MHz and 3.6GHz,
- The Commission is currently working on releasing these bands for licensing.

## **Planning**

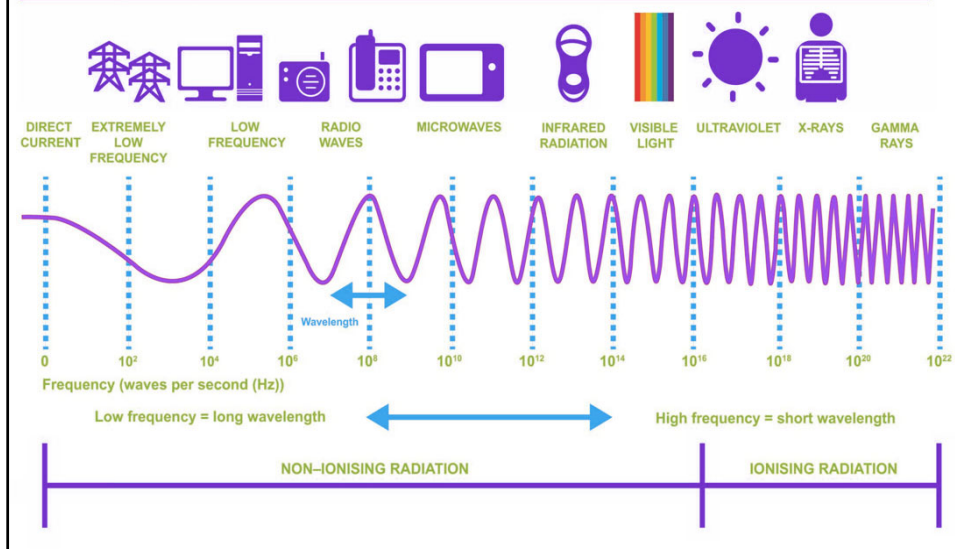
- Enabling infrastructure through Permitted Development
- Planning Reform

*undertake a range of procedural changes which introduce faster processes to allow new smaller telecoms improvements"*

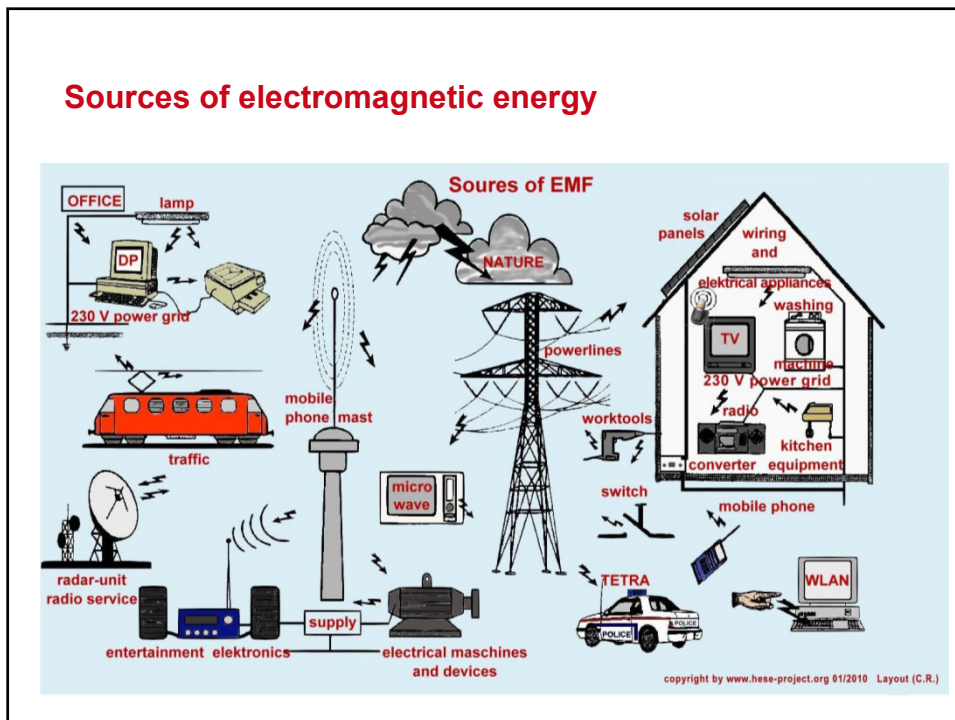
- Proposed PD
  - easier to understand
  - speedier
  - allows for development in Conservation Areas subject to Prior Approval
  - controls development in special areas
  - large masts removed

## **Health Issues in Perspective**

## The electromagnetic spectrum

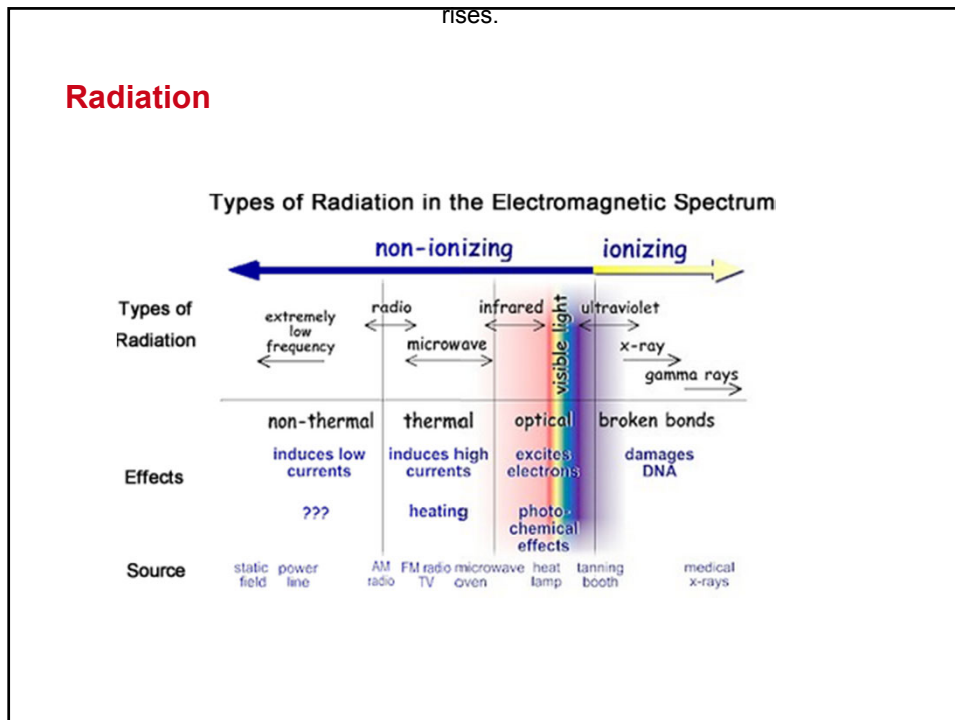


## Sources of electromagnetic energy



rises.

## Radiation



## Is 5G different?

- The radiofrequency part of the EMF spectrum has frequencies from 30 Hz to 300 GHz. The corresponding wavelengths are 10,000 km to 1 mm.
- The ICNIRP guidelines are based on evidence covering the whole range (30 Hz to 300 GHz).
- The 700MHz, 3.6GHz, and 26GHz bands have been identified across the EU as Pioneer Bands for 5G services.
- In urban areas across UK and elsewhere 5G will operate towards the higher end of the harmonised frequency range (26GHz) but this still well within the frequency range covered by the current ICNIRP safety limits.
- In Isle of Man, frequency is likely to be 700MHz and 3.6 GHz – this is at the lower end of the frequency range, using frequencies that are already in use here

**What is the evidence for impact on human health?**

- 25,000+ research papers published over last 30 years
- WHO International EMF Project
- Multiple independent reviews by national governments and health protection agencies (from more than 30 countries)
- Systematic review of all the evidence has repeatedly indicated no evidence of harm to human health from EMF exposures within existing safety guidelines (ICNIRP)

**Claims by anti-EMF lobbyists**

- Some lobbyists argue against all EMF (from electricity power lines through to mobile phones, wi-fi and so called 'dirty electricity')
- Others focus specifically on 5G
- 5G claims include:
- This is new radiation to which the population has never been exposed and about which there is no evidence for impact on human health (False)

### Anti-5G claims continued

- More and more experts are accepting that EMF and 5G in particular is harmful to health:
  - Environmental Health Trust
  - Bio-initiative Report
  - International Scientists 5G Appeal
  - Sarah Starkey (independent expert, UK)
  - Lennart Hardell (clinical oncologist, Sweden)
  - Martin Pall (emeritus professor of biochemistry, Washington State)
  - Joel Moskowitz (social scientist, California)
  - Mark Steele (expert 'inventor', Gateshead)

### Characteristics of 'experts' and their websites

- 'Argument from authority' – 'I/we are experts so must be believed'. No – this is a logical fallacy – arguments should be judged on quality of evidence, not on individuals
- Use of strong, unevidenced statements to set tone for their website/paper (eg 'the evidence that radiofrequency radiation is harmful to life is already overwhelming, 5G Appeal – statement is false)
- Presentation of masses of 'stuff', poorly organised, no critical appraisal but all said to prove harms
- Follow up of references cited often indicates misinterpretation, misquoting and/or misrepresentation
- Highly selective use of studies which support their *a priori* position (cherry picking)

### What about the precautionary principle?

- If it hasn't been proven beyond doubt that a technology is 100% safe, then it shouldn't be used
- Science can never prove a negative!
- Application of precautionary principle would have precluded introduction of multiple everyday technologies (motor transport, air travel, trains, electricity, ladders – to name a few)

### Sources of evidence (based on principles of evidence-based science)

- WHO International EMF Project: <https://www.who.int/peh-emf/project/en/>
- National government and health agency reports, e.g.:
  - <https://www.gov.uk/government/publications/radiofrequency-electromagnetic-fields-health-effects> (for the UK)
  - <https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/electricity> (Australia)
  - <https://www.health.govt.nz/publication/electric-and-magnetic-fields-and-your-health> (New Zealand)
  - <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09583.html> (Canada)
  - <https://www.fcc.gov/general/radio-frequency-safety-0> (US)
- Independent critical appraisals of major publications
  - [www.emfandhealth.com](http://www.emfandhealth.com)
- Quality assured database of EMF related publications:
  - <https://www.emf-portal.org/en>.