



JRC 2021 Conference

# The role of spectrum policy in tackling the climate change issue

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# Background of the study

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- In June 2019, the UK Government passed legislation requiring the reduction of the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050.
- Operators and vendors have already undertaken climate change adjustments under CSR
- Study: **The role of radio spectrum policy in helping to combat climate change**
- Inspired by GSMA's response to Draft RSPG Opinion on a Radio Spectrum Policy Programme
- Our study looks at spectrum users as both enablers (reducing environments impacts) and polluters and draws a series of recommendations on how regulators and governments can adapt their spectrum policies to be more environmentally responsible.

# Structure of research

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## Relationship between ICT and climate change

Enabler of carbon emissions reduction

Polluter

Measuring and monitoring

Other actions from industry players

## Relationship between spectrum policy and climate change

Spectrum management issues

Enabling flexibility and fostering self-regulation

Spectrum provision issues

Network sharing

Legacy network switch-off

Specific system that are key to climate

# The relationship between the communications sector and climate change

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## Enabler (reducing carbon emissions)

- Change in behaviours (for example, through reduced travel, or through more efficient working practices)
- Use of digital technologies in different sectors: e.g. telecommunications, broadcasting, energy, industry
- Importance of science services

## Polluter (emitting carbon emissions)

- User devices : biggest part of chain in terms of carbon emissions (electricity consumption).
- Mobile networks (greener energy, energy-efficient equipment)
- Fixed networks
- Others

# Measuring and monitoring

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## Methods and tools to measure net impact of technologies on climate

Methodology

Private sector

Public sector

GeSI, ITU  
recommendations

GSMA benchmark  
initiative

Arcep's initiatives

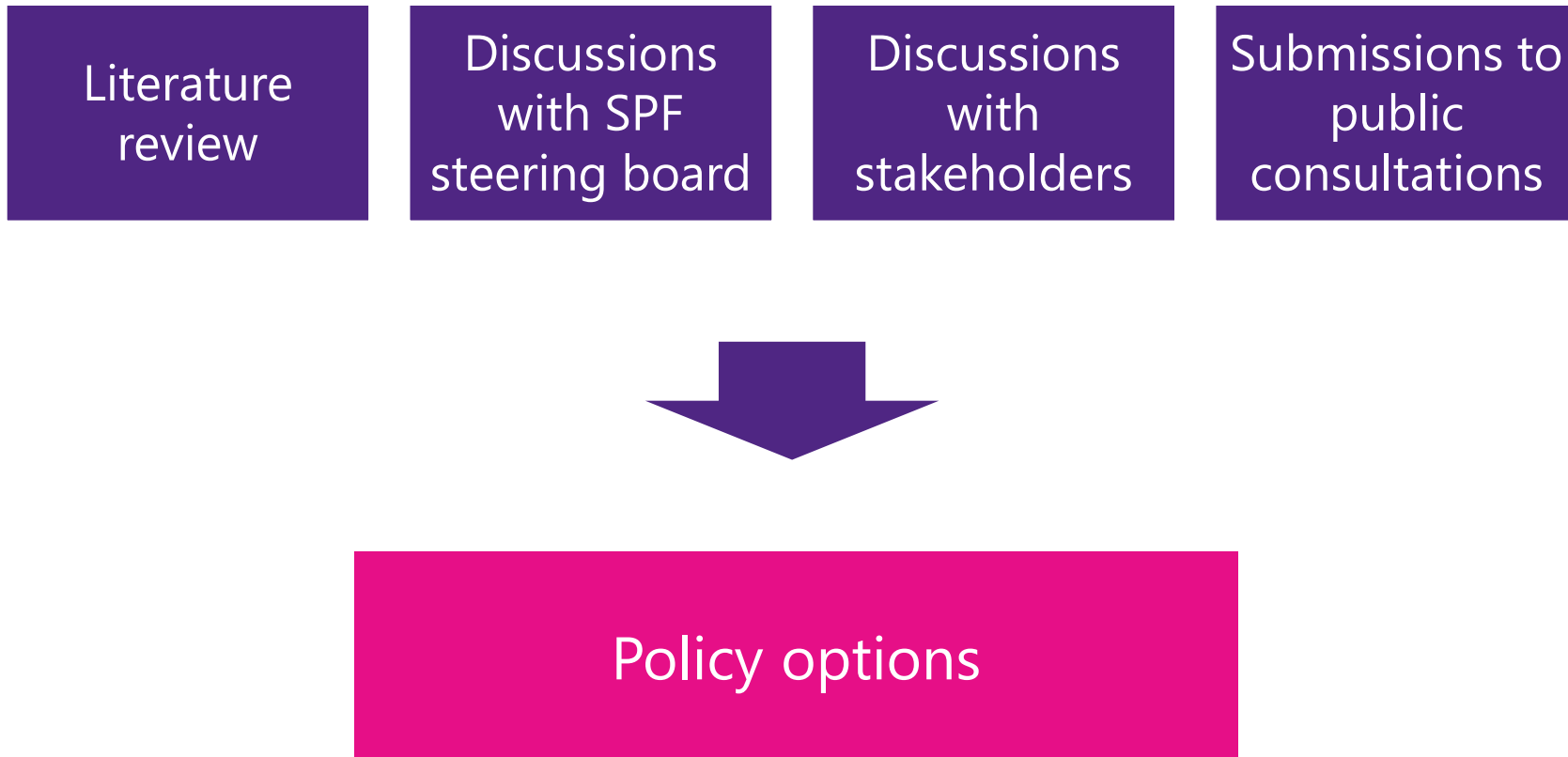
# The role of spectrum policy in combating climate change

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- Existing gap in research and existing literature – but strong interest in the subject
- Positions/propositions of spectrum policies made by organizations (ITU; RSPG; ETNO; GSMA; GeSI)
- On spectrum policy, most of the literature is about mobile networks.
- Approach by sector/vertical: Energy sector has the most information publicly available
- National Infrastructure Commission recommendation: Ofcom, Ofgem and Ofwat should have new duties to “promote the achievement of net zero by 2050 and improve resilience”.

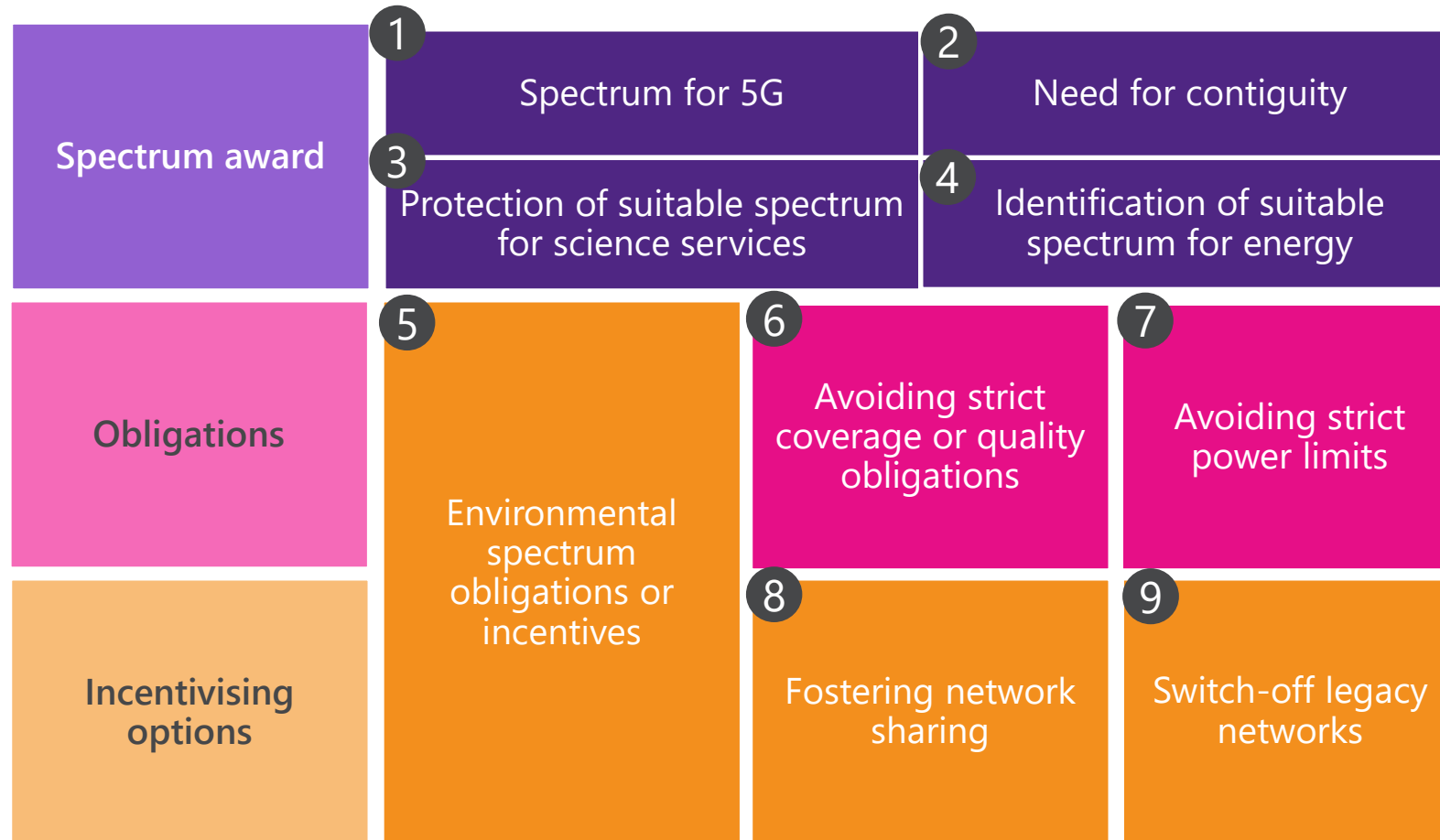
# A summary of research

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Discussions with: Joint Radio Company, Met Office, OFCOM, 450MHz Alliance, Digital UK

# Proposed spectrum policy options



Classified in two ways:

- Potential impact on climate change
- Assessed timeline

Priorities identified as short-term, high impact policies



# Recommendations

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The regulator must have environmental impact responsibilities

A measurement and monitoring regime is required to help with regulation

Science services spectrum must be protected

Spectrum users should be compelled to use green sources of energy

Legacy networks should be switched off when feasible

Suitable spectrum for energy should be identified

Sufficient spectrum should be provided to keep the number of mobile sites low

Spectrum should be awarded in contiguous blocks

# Spectrum for energy use

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- Spectrum is crucial for:
  - Making energy use more efficient
  - Smoothing demand and reducing wastage
  - Monitoring emissions
  - Coordination between vertical chain
- Spectrum does not need to be **dedicated**
  - Network or spectrum slicing on mobile networks
  - Spectrum sharing at specific locations
- Energy stakeholders must be consulted to understand **what is needed** and **where**

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