

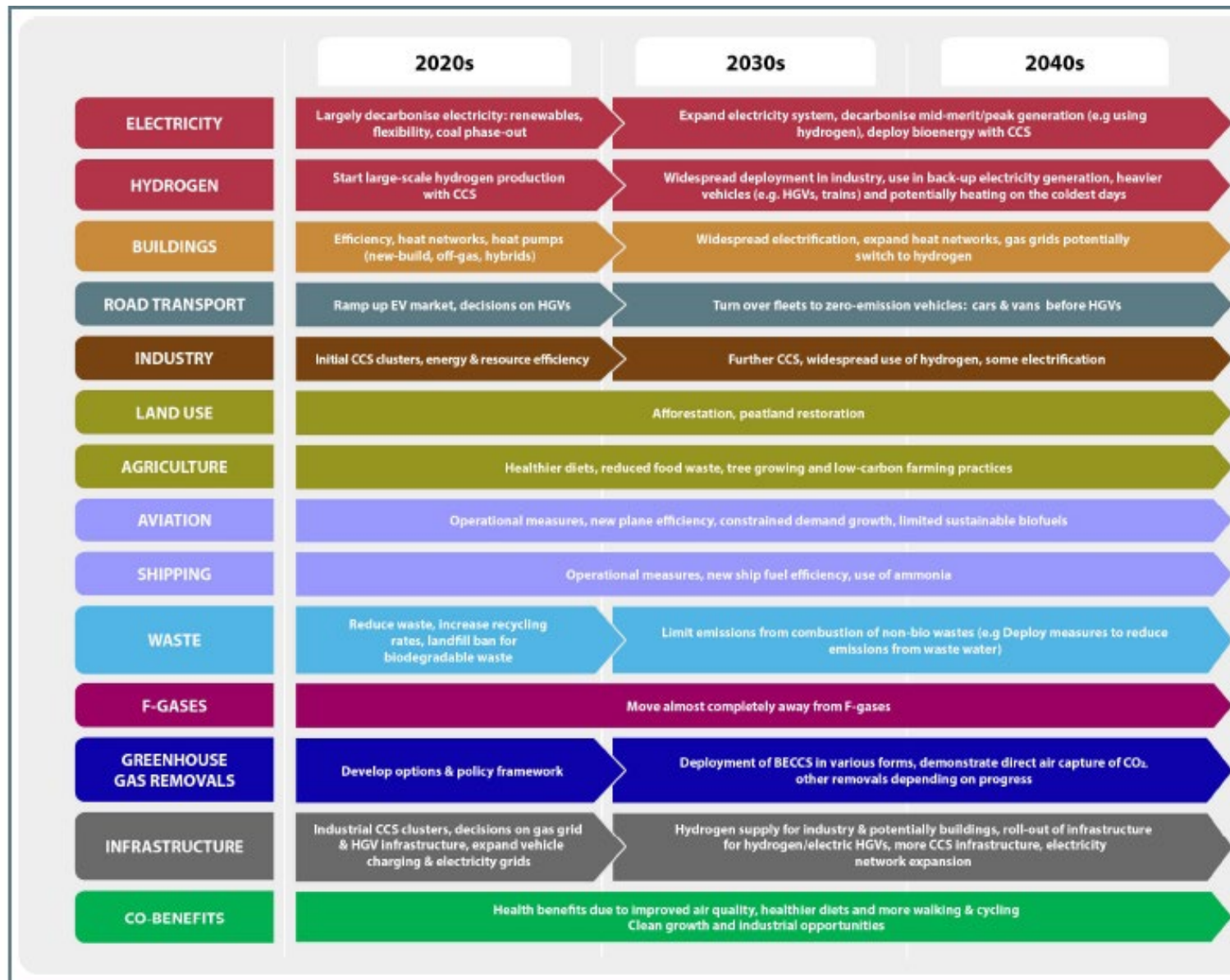


Engineering and
Physical Sciences
Research Council

Marine Wave - EPSRC

Zaffie Cox, September 2021





UK Net Zero 2050 – what is the role of research and innovation?

Deploy

- Deploying at scale those technologies and solutions that are ready
- **EPSRC's role:** Address the research questions that arise during deployment of existing technologies.

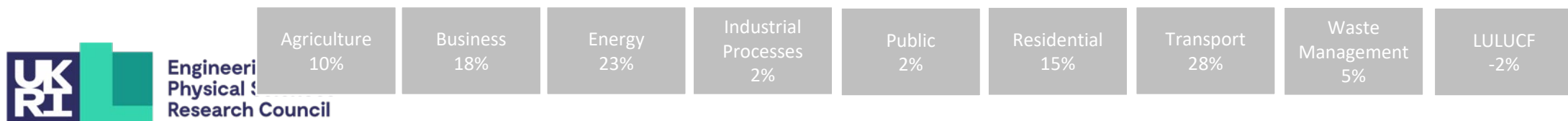
Develop

- Developing those technologies and solutions that are not yet ready
- **EPSRC's role:** Creating new scientific insights, innovative technologies, and unlocking deployment

Discover

- Discovering solutions to problems that we cannot yet solve.
- **EPSRC's role:** Delivering the disruptive science that contributes to achieving global carbon neutrality in the long-term

Where do UK GHG emissions come from?



What does this mean in practice?

Across UKRI

- Sustainability and Net Zero is a priority across councils

Energy Programme



- Cross council programme
- Research for a low emission energy system
- Strategic and community led funding

- *Marine Wave and Tidal has a clear part to play*



Marine Wave at EPSRC

Collaboration across ORE

Environmentally and social conscious
innovation

Commercialisation

Maintaining International Leadership

- Novel designs
- Survivability & Reliability
- Power take off
- Modelling, forecasting & evaluation
- New material

UK Net Zero 2050 – Marine Wave 2020

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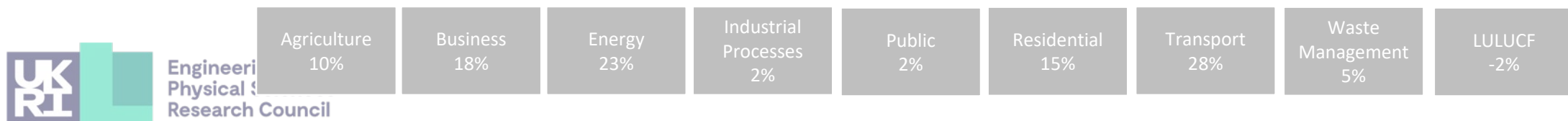
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Where do UK GHG emissions come from?



Marine Wave Call

- 8 grants
- ~£7.5 million
- Broad range of exciting work

Flexible Responsive Systems in Wave Energy: FlexWave

•University of Plymouth, University of Oxford, University of South Hampton

New Generation Modelling Suite for the Survivability of Wave Energy Convertors in Marine Environments (WavE-Suite)

•City, University of London

Holistic Advanced Prototyping and Interfacing for Wave Energy Control

•University of Strathclyde

Mooring analysis and design for offshore WEC survivability and fatigue (MoorWEC)

•University of Manchester

MU-EDRIVE

•Newcastle University

Novel High Performance Wave Energy Converters with advanced control, reliability and survivability systems through machine-learning forecasting

•Lancaster University

Bionic Adaptive Stretchable Materials for WEC (BASM-WEC)

•University of Strathclyde

System-level Co-design and Control of Large Capacity Wave Energy Converters with Multiple PTOs

•Queen Mary University of London, The university of Manchester, University of Exeter

Thank you



Long term:

Continue working on these strategic priorities

Excited to see where this research goes



Short term:

Excited to hear more from the projects themselves!