

# Greenhouse Gas Emissions and EIA

## A UK Perspective

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Prepared by LUC

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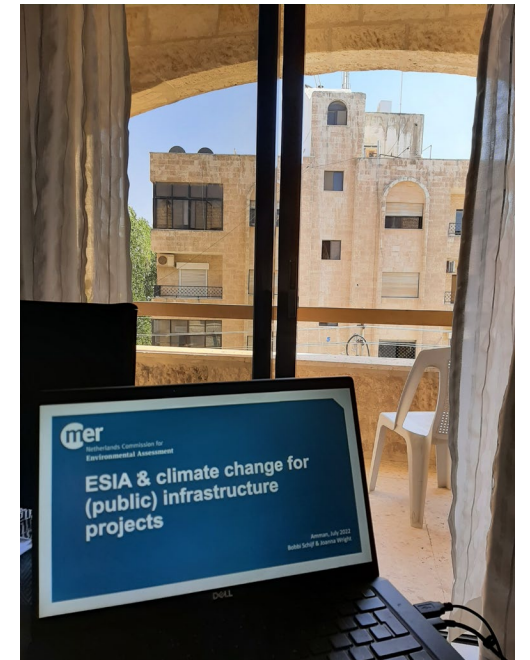
# A brief introduction

*“A planning, impact assessment, landscape design, ecology and geospatial consultancy”*

Founded in 1966, with a team of over 200 skilled professionals

Proudly employee owned

<https://landuse.co.uk/>



# Coverage of the presentation

Current (and future?) **UK requirements** to address greenhouse gas emissions in EIA

**Examples** of how these have been reflected in recent practice

Moving towards closer alignment with the **net zero agenda**

# Current (and future) requirements to address greenhouse gases in EIA

# EIA in the UK

‘Devolved matter’

Currently based on the EU Directive 2014/52/EU but...

The Levelling Up and Regeneration Bill proposes a new system of environmental assessment, resulting in ‘**Environmental Outcome Reports**’ to replace the current EU-derived SEA and EIA processes:

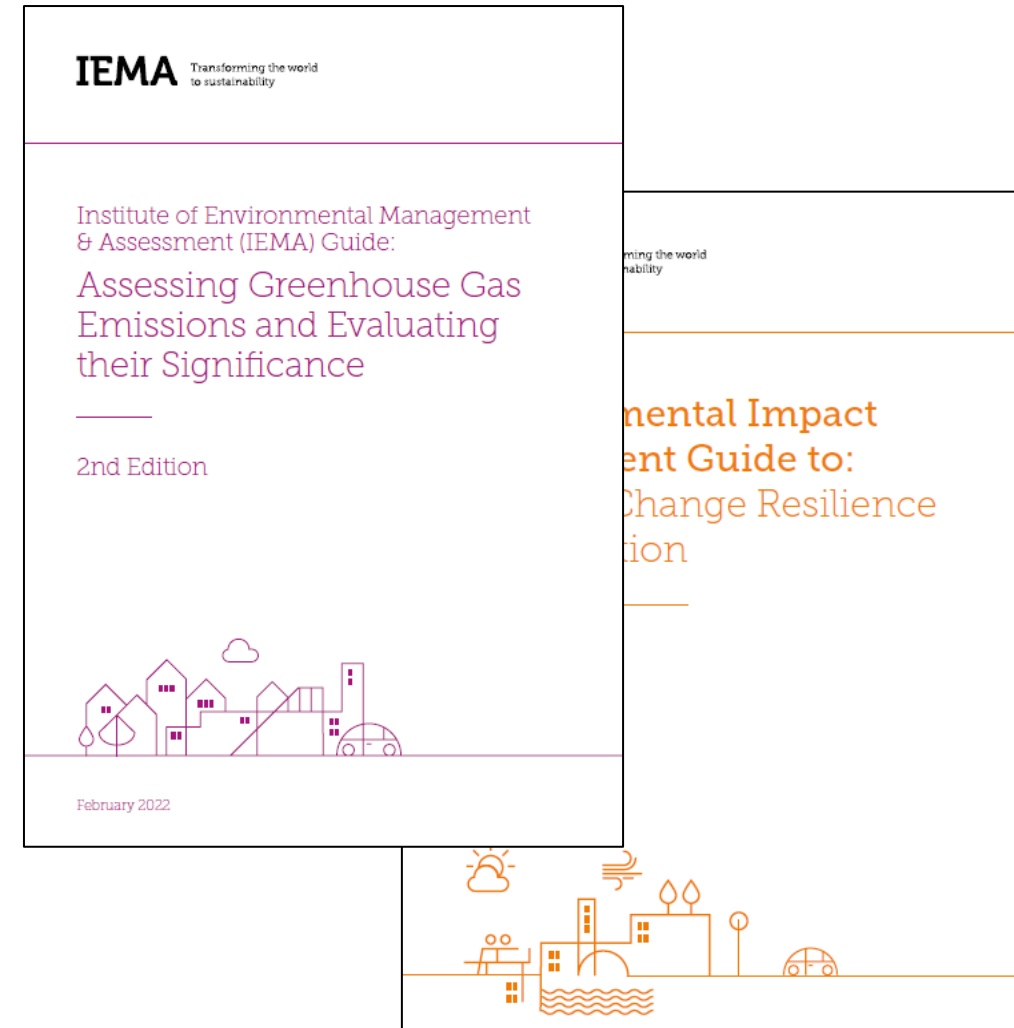
*“We want to ensure we break the cycle where developments struggle to reflect how they address matters that are of national and global scale and importance. **Matters of importance at the national, and international, scale such as climate change are most effectively addressed through strong legislation and policy, such as planning policy and the building regulations. These set the framework for, and clearly define what good looks like.**”*

<https://www.gov.uk/government/consultations/environmental-outcomes-reports-a-new-approach-to-environmental-assessment>

# Current guidance

## IEMA's EIA Guide to Assessing Greenhouse Gas Emissions and Evaluating Significance

First edition published in 2017 and updated in 2022



# General principles

All projects contribute to climate change - largest **inter-related cumulative** effect

GHG emissions should **always** be considered and reported but at **varying degrees of detail** depending on the project

Focus on **proportionate assessment** to avoid undue burden

A **life cycle type approach** should be adopted, considering pre-construction, construction, operation, decommissioning

**Mitigation** ideally should be **embedded** through the project life (generally earlier is better)

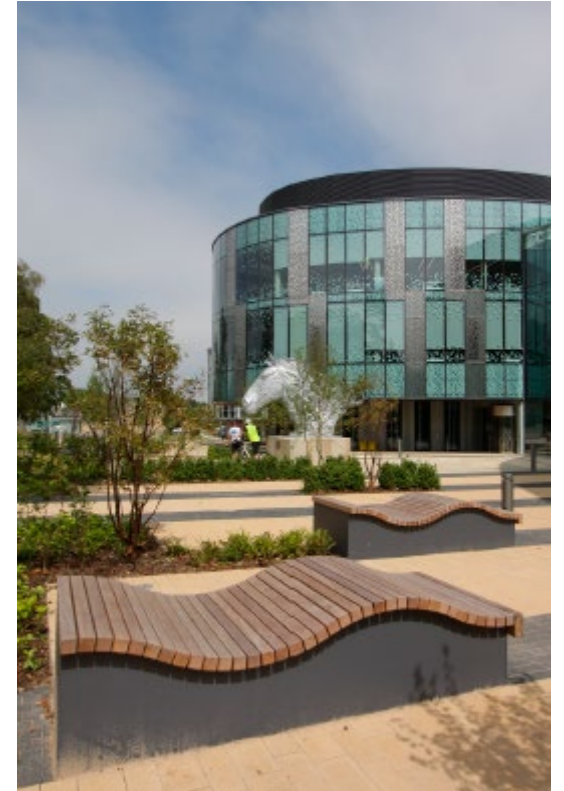
# Impact assessment: greenhouse gas emissions

**Direct emissions** from vehicles and plant during construction, operation and decommissioning (CO<sub>2</sub> and NO<sub>x</sub>)

**Indirect emissions** arising from the demand for energy produced using fossil fuels

**Embodied carbon** as a result, for example, of the extraction and manufacture of materials and their fabrication and transport to site

...tricky!





## Case law: indirect effects

Finch, R. (On the Application of) v Surrey County Council  
[2020] EWHC 3566 (Admin), [2021] PTSR 1160



Application to retain two existing oil wells, and to drill four new wells for oil extraction, over a period of 25 years.

EIA “*must address the environmental effects, both direct and indirect, of the development for which planning permission is sought, (and also any larger project of which that development forms a part), but there is no requirement to assess matters which are not environmental effects of the development or project*”.

# Examples of how requirements have been reflected in recent practice

# Wimbledon tennis club: project background

## Project location:

- Located in south-west London

## Purpose of the project:

- Construct and operate an expansion of the tennis grounds onto Wimbledon Park Golf Course
- Includes new tennis courts, tennis related infrastructure, new buildings and associated landscaping and works



# BritishVolt gigaplant: project background

## Project location:

- Located in Northumberland
- On the site of a disused coal yard, at the former Blyth power station

## Purpose of the project:

- A new battery manufacturing plant to produce 300,000 batteries/year for the electric vehicle market
- One of the largest manufacturing plants in Europe



Source: Ridge Partners

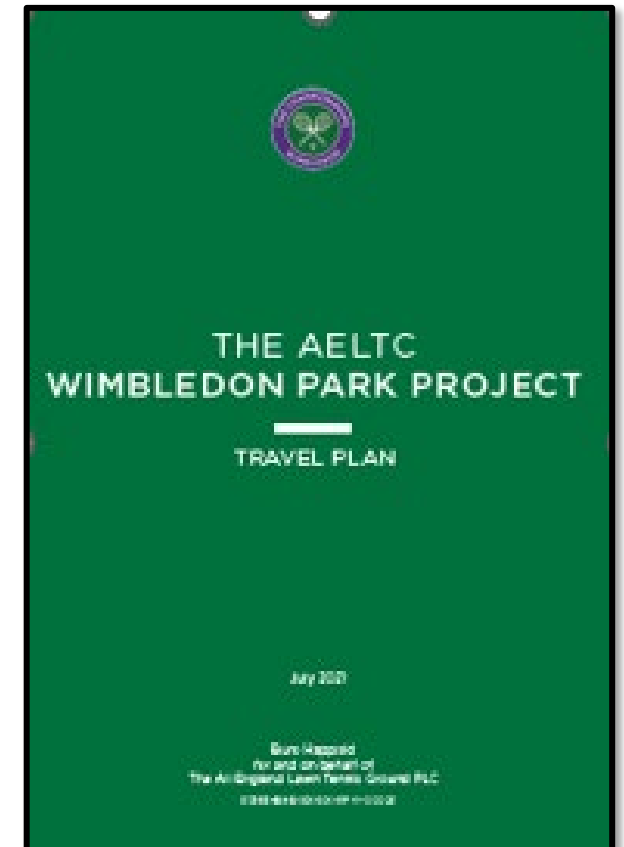
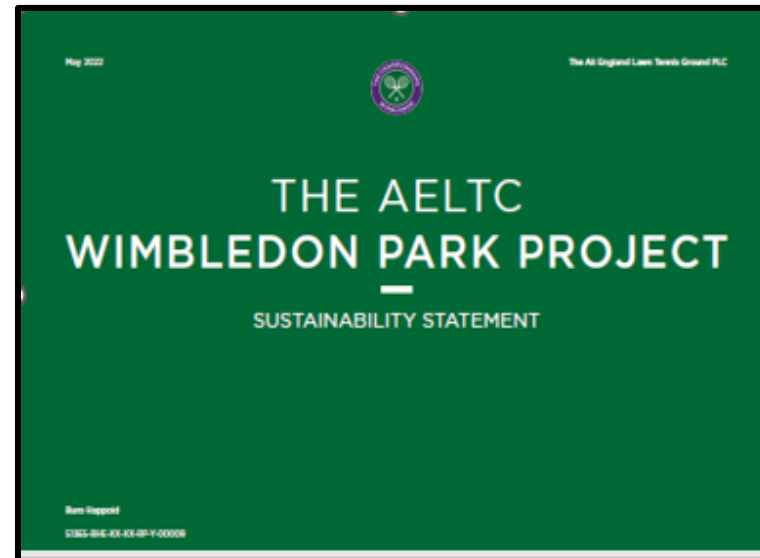
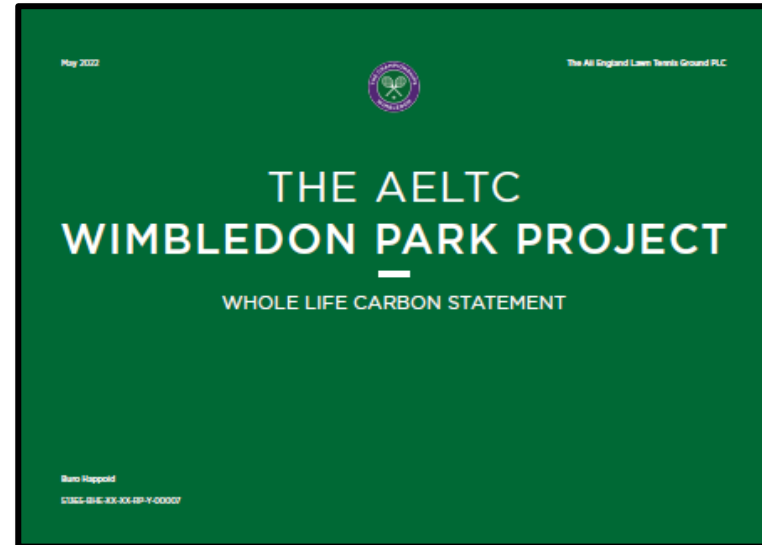
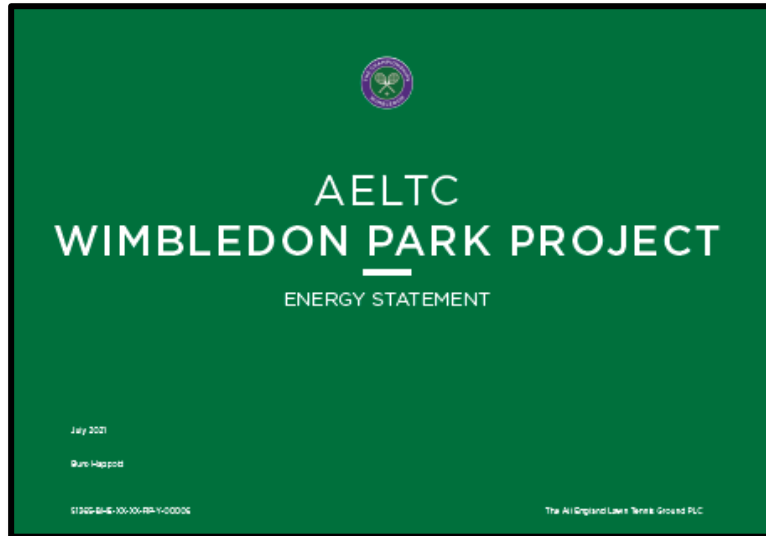
## EIA scoping stage

### Wimbledon expansion:

- climate change **originally scoped out** as climate mitigation covered in other documents supporting the application and each topic area considered future baseline with climate change (climate adaptation).
- **scoped back into** the revised application/ES following feedback from decision-maker

**Gigaplant:** climate adaptation and mitigation **both scoped in** at the outset by the EIA team, due to potential for significant effects.

# Wimbledon emissions reduction studies



# Wimbledon emissions reduction: design and construction

Reducing embodied carbon by **using lighter materials**, e.g. using hollow core slabs or timber where possible and reducing overall quantity of materials needed for paving network

**Avoiding the use of composite materials** (e.g. concrete on metal deck)

**Reusing site won materials** and identifying the beneficial reuse of site won materials that cannot be reused on site for other projects

There will however be **unavoidable GHG emissions** as materials, energy and fuel use, and transport will be required

**Total emissions during construction period: 66,647.7tCO<sub>2</sub>e**

## Wimbledon emissions reduction: operation

**Energy strategy** for the site including employing dimming and sensor controls in exterior lighting, installing of solar panels and heat recovery from chillers

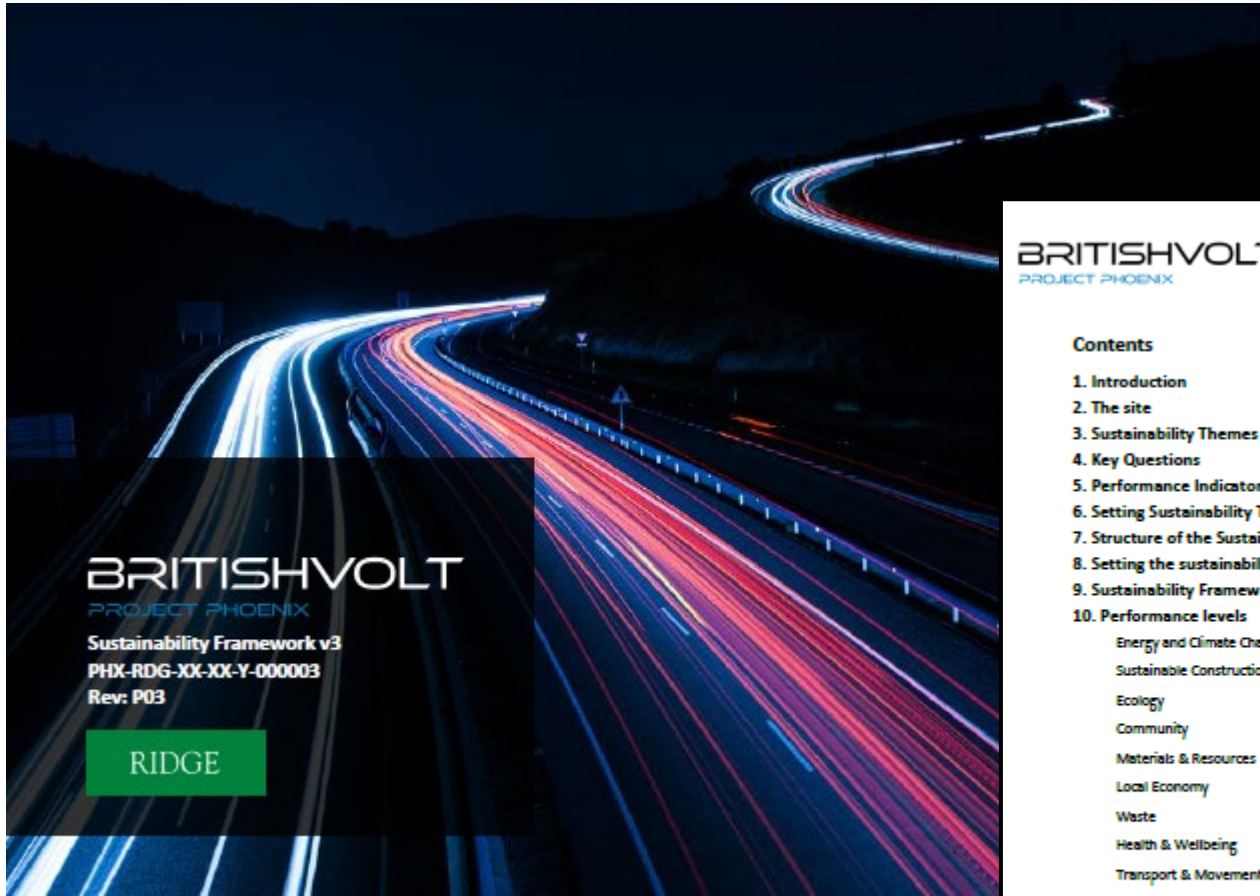
**Travel plan** including improved pedestrian access and use of spectator shuttle buses from nearby train stations

**Total** operational GHG emissions equate to approximately **82,071 tCO<sub>2</sub>e** over the lifetime of the Development

Requirement for a contribution to the local **carbon offset fund**



# Gigaplant supporting studies



| BRITISHVOLT<br>PROJECT PHOENIX   |  | RIDGE |
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# Gigaplant emissions reduction: design and construction

Use **building information modelling** (BIM) to efficiently plan, design and construct the facility

Where possible, use **concrete with recycled content and recycled steel**

Prioritise materials from suppliers who participate in **responsible sourcing schemes** (e.g. BRE BES 6001:2008 Responsible Sourcing Standard)

Compliance with the UK Government's Timber Procurement Policy for **all timber-based products**

**Quantification of GHG related emissions from construction vehicles only**, with commitment to meeting carbon performance indicators for energy/embodied carbon

# Gigaplant emissions reduction: operation

Energy strategy for the site including installing of **solar panels** on roof of main building, **developing energy storage facilities** and **providing electric vehicle charging points**

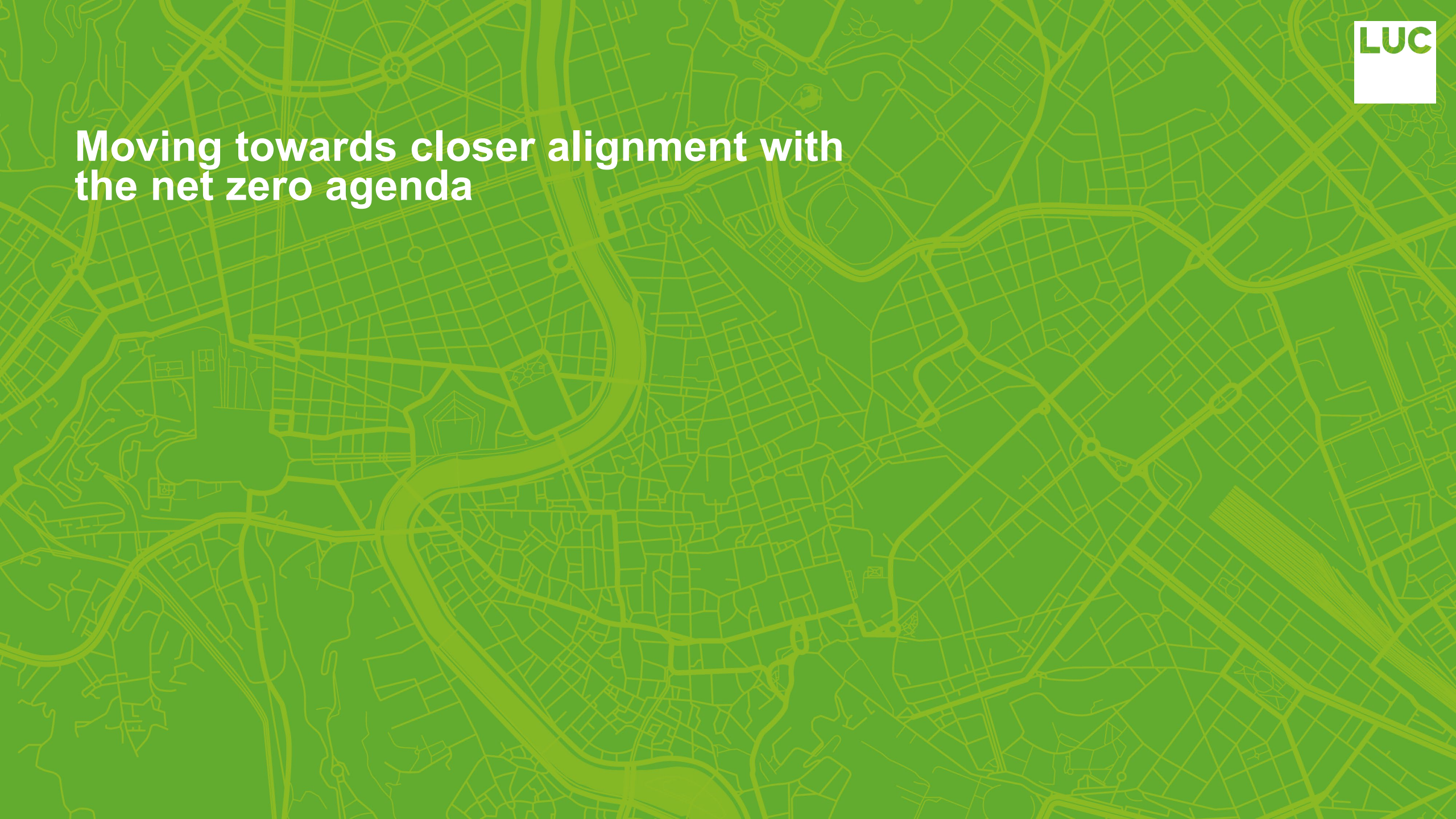
Adoption of '**circular economy**' principles, e.g. waste batteries will be separated by components, shredded and recycled

Consideration of opportunities to **move freight by local disused rail or canals**

Provision of **staff shuttle bus** between the site and local settlements and also **cycle storage** and **staff changing and showering facilities**

**Quantification of GHG related emissions from operational vehicles only**, with commitment to meeting carbon performance indicators for operational energy use

# Moving towards closer alignment with the net zero agenda



# Defining significance: GHG emissions reduction

Alternative approaches:

*“GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered significant”*

Compliance with national policies/carbon reduction targets

Fit with net zero trajectory in line with the Paris Agreement’s 1.5°C pathway  
(different for different project types)

# Recent research: review of greenhouse gas emissions in EIA

Research aims: To review the current practice of assessing GHG emissions as part of the SEA and EIA processes, focusing on:

- methodologies used to assess GHG emissions impacts
- the level of detail included in these assessments
- how these emissions are reported and communicated

<https://www.climateexchange.org.uk/>



# Review of greenhouse gas emissions in SEA: case study examples

Reviewed ten Environmental Reports prepared between 2015 and 2020:

- three local development plans (land use planning)
- local authority level plans and strategies for climate change, renewable energy, transport and woodland
- a sub-local tourism strategy
- national level draft climate plan and energy strategy
- national level consultation on 'Making things last: a more circular economy in Scotland'

# Review of greenhouse gas emissions in SEA

- Environmental baseline information included a range of data relevant to GHG emissions but not always available at the plan scale.
- Plan content is predominantly qualitative, and the effects of this content are therefore unquantifiable.....no use of specific tools (for example carbon calculators) to assess GHG emissions; instead assessment approaches adopt a qualitative approach and indicate a direction of travel in GHG emissions (e.g. increase or decrease).
- The majority of the Environmental Reports did not clearly set out the basis for considering the significance of the impact on climatic factors, for example whether significance was related to the baseline, local or national targets.



# Review of greenhouse gas emissions in EIA: case study examples

Range of consenting regimes and development types common in Scotland

- Two wind farms
- Three road construction projects
- One mining project
- One forestry development
- One marine infrastructure development
- One mixed use development
- One recreational development

# Review of greenhouse gas emissions in EIA: quantification of emissions

**Two** quantified baseline GHG emissions (at a national level)

**Seven** included a quantified assessment of construction phase emissions

**Six** included some degree of quantification of operational emissions

**Two** quantified emissions during the decommissioning phase

...and qualitative approaches



# Review of greenhouse gas emissions in EIA: use of supporting tools

Majority used a standard tool to calculate emissions

Quality of the output is reliant on original data and any assumptions

Assumptions may be considerable due to availability of data at early stages

....no evidence of assumptions being queried



## What next?

Need to get better at **quantifying** project level GHG emissions

- capitalise on existing good practice
- consider wider applicability of existing tools
- challenge is good!

Need to consider EIA significance in the context of the **government's net zero commitments**

- not the magnitude of GHG emissions in isolation
- trajectory and therefore significance will vary for different types of projects
- simply meeting existing policy/regulation may not avoid significant effects

## GHG Emissions and EIA – A UK Perspective

Thank you!

Any questions?

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