

CIEEM Scottish Conference 2019

Climate change in EIA and its relevance to ecologists



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Content

What is Environmental Impact Assessment (EIA) and why is climate change now included?

What guidance is available?

What factors need to be considered and how is this relevant to ecologists?

...and a quick case study example

What is EIA?

Origins in the US and the National Environmental Policy Act (1969)

Introduced formally in the UK through EU Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment

“EIA is a means of drawing together, in a **systematic way**, an assessment of a project’s **likely significant** environmental effects. This helps to ensure that the importance of the predicted effects, and the **scope for reducing any adverse effects**, are properly understood by the public and the competent authority **before it makes its decision**”

(Scottish Government, Planning Circular 1/2017)



What is EIA?

Annex I: Mandatory

Annex II: Required where likely to have significant effects on the environment by virtue of nature, size or location ('screening')

Implemented in the UK through a series of regulations (e.g. planning, energy, transport, forestry, land drainage)

Number of topics that require consideration including population & human health, flora & fauna, land, water, air, cultural heritage and landscape ('scoping')

Directive regularly updated, most recently in 2014
(Brexit - ??)

Why consider climate change?

The Preamble to Directive 2014/52/EU states:

“

*(7) Over the last decade, environmental issues, such as **climate change**.....have become more important in policy making. They should therefore also constitute important elements in assessment and decision-making processes.*

”

“

*(13) **Climate change** will continue to cause damage to the environment and compromise economic development. In this regard, it is appropriate to assess the impact of projects on climate (for example greenhouse gas emissions) and their vulnerability to climate change.*

”

Guidance and Competency

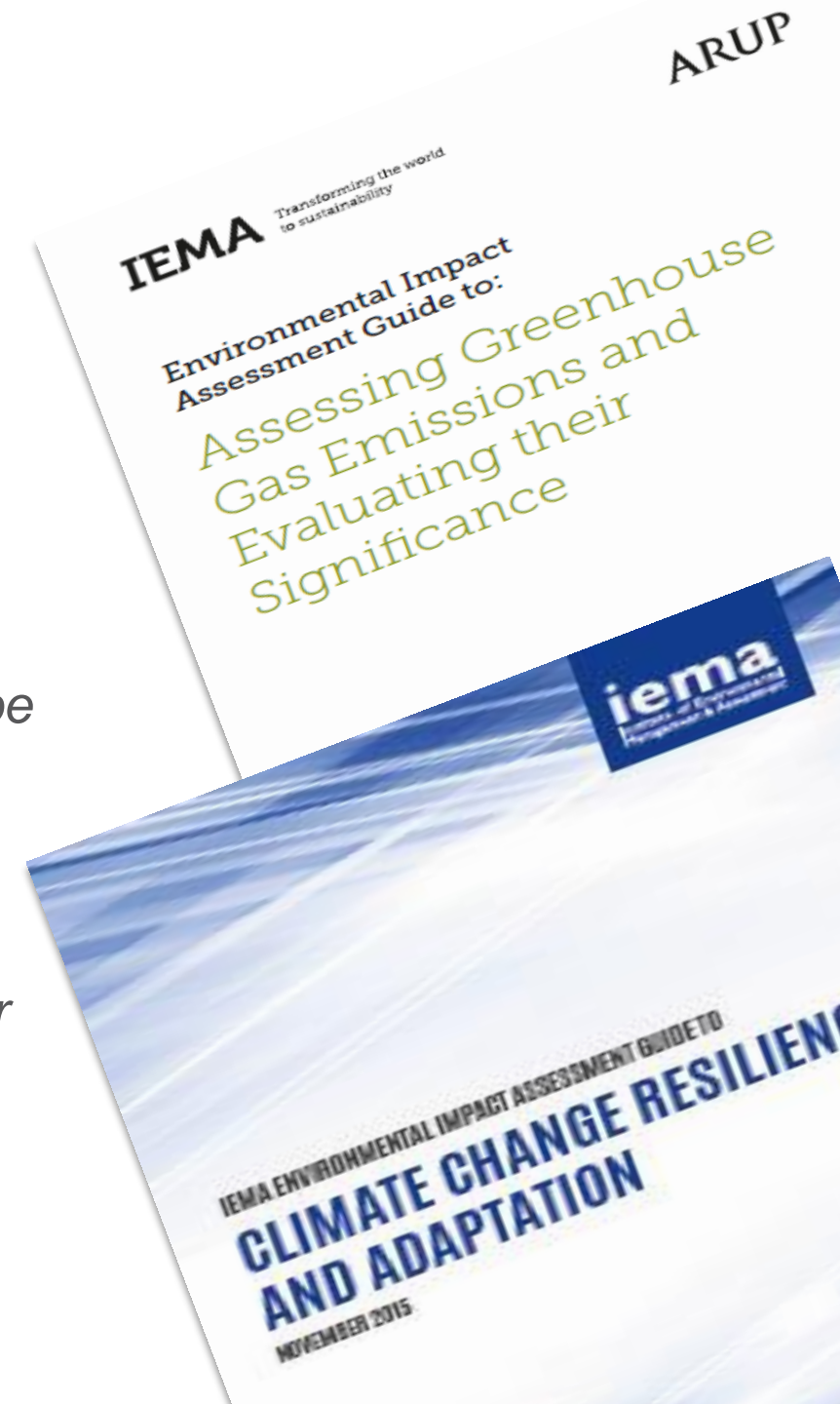
IEMA EIA Guidance on Mitigation and on Resilience & Adaptation

EIA Directive:

“Experts involved in the preparation of environmental statements/environmental impact assessment reports should be qualified and competent”.

IEMA Guidance:

“IEMA recommends that every EIA team includes a practitioner who is knowledgeable about future climate change scenarios, and is experienced in the use and interpretation of future climate projections.”



Appropriate consideration...

What are the key contributing greenhouse gas sources or activities and was climate mitigation considered as part of the project design?

How resilient is the project to climate change, including any environmental mitigation proposed (e.g. **habitat management/enhancement proposals**)?

Were project alternatives reviewed (e.g. location or design) and if so, did this consider climate change mitigation and resilience?

Are any environmental receptors particularly vulnerable to climate change (e.g. **species at the edge of their climatic range** and could this affect their importance)?

Will the scale/geographic spread of impact change due to the sensitivity of environmental receptors to climate change (e.g. **increased erosion of exposed and fragile habitats**)?

....and a quick case study:

Forest Green Rovers Football Stadium

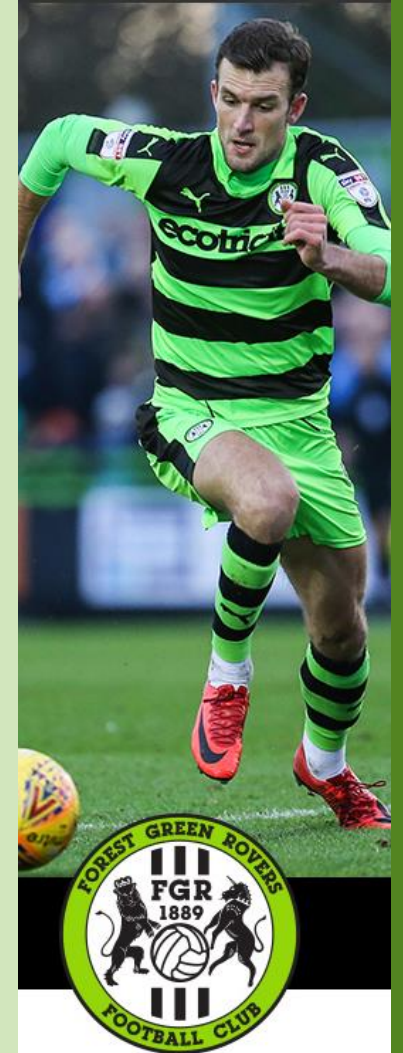
Chairman and major shareholder since 2010: Dale Vince, Ecotricity

One of the oldest football teams in the world, on the verge of bankruptcy and an important local employer

Opportunity for 'eco-sport':

- solar PV on stadium roof and solar powered lawn mowers
- organic pitch
- first (and only) vegan football club in the world!

Ambition to be the greenest football team in the world... and in the Championship League within five years.... new stadium proposal



CNN News:

“US President Donald Trump might have claimed climate change to be a hoax, but in a leafy spot of rural Britain, a millionaire football club owner is doing all he can to make his team as environmentally friendly as possible. The latest initiative of lower league English club Forest Green Rovers is to build what chairman Dale Vince says is the world's first ever wooden stadium”



Projected climate change

UKCPO9 Projections for the South-West

Increase in temperature, particularly in summer

Increase in winter rain

Decrease in summer rain

More heavy rain days particularly in winter

Wind speed?

Frequency and intensity of storms?

Downloads

- [key findings summary spreadsheet \[155kb\]](#)
- [Map of UKCPO9 administrative regions \[179kb\]](#)
- [Map of river basin regions, based on the Water Framework Directive. \[290kb\]](#)

You are currently looking at projections for Scotland West

The UKCPO9 projections show that in the 2080s, and under a medium emissions scenario, all areas of the UK warm on average relative to the 1961-90 baseline. Summers warm more than winters, particularly in southern England. Mean daily maximum and minimum temperatures increase across the UK in both summer and winter. Average annual precipitation changes little across the UK, but winter precipitation increases in western regions while summer precipitation decreases in many, but not all, parts of the UK. The average amount of summer cloud cover decreases in parts of southern UK. Relative mean sea levels rise around the UK but more so in southern than northern UK owing to relative land movements. Significant wave heights increase in the south east in winter and in northern Scotland in the autumn. Sea surface temperatures rise throughout UK waters while salinities decline. For a summary of all UK and regional findings, download the spreadsheet in the 'downloads' section above. [Read More](#)

Maps

Key findings

Graphs

Variable	Emission scenario		
	Low	Med	High
Annual average daily temperature	Low	Med	High
Summer average daily temperature	Low	Med	High
Winter average daily temperature	Low	Med	High
Summer precipitation	Low	Med	High
Winter precipitation	Low	Med	High

Time period	Emission scenario		
	Low	Med	High
2020s	Low	Med	High
2050s	Low	Med	High
2080s	Low	Med	High

Variable	Emission scenario		
	Low	Med	High
Annual temperature	Low	Med	High
Summer precipitation	Low	Med	High
Winter precipitation	Low	Med	High

Consideration of Ecology : Assessment of Effects

Habitats: No protected habitats on site. The majority of the habitat is lowland neutral agriculturally improved and semi-improved grassland divided by mature hedgerows.

Natural England's Climate Change Adaptation Manual (NE546 2014) identifies both lowland grasslands and hedgerows as having low sensitivity to climate change.

Species: Increased rainfall and flooding events, coupled with rising temperatures could lead to shifts in species' ranges:

- Bat species will potentially benefit from higher temperatures and more insect food; although an increase in heavy rain days in summer could prove detrimental. Milder winters may also cause them to leave their hibernation sites early.
- Higher temperatures may also benefit slow worm and grass snake.

No change to the predicted impacts of the project on ecology as a consequence of climate change

Consideration of Ecology: Mitigation and Enhancement

No change in impact but.....

Habitat management measures can be introduced to assist habitats and species adapt to the anticipated change and create valuable new habitats, such as specifying:

- suitably resilient plant species
- pollinator species suitable for invertebrates shifting their range northwards

Also an opportunity to sequester (capture and store) carbon.

Key messages

New requirement to consider climate change in EIA

Unlikely to lead to a radical overhaul to the approach taken to EIA but does provide a valuable opportunity to:

- ‘Sensitivity test’ predicted impacts in light of projected climate change
- Check that mitigation measures are ‘climate resilient’ and consider opportunities to support ecological adaptation and to sequester carbon.

Approach with ‘a good heart’ and share emerging practice !

Thank you!

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