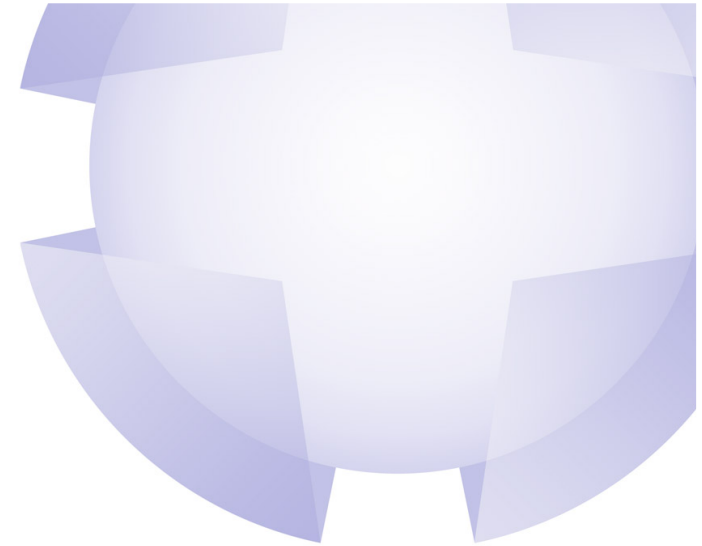


# Stakeholder led ILUC modelling study

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**RED Stakeholder Advisory Group**

Ausilio Bauen

November 2009

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**Context**

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**Approach to study**

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# Causal-descriptive models provide an alternative to economic modelling approaches to assessing GHG emissions from ILUC

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- Partial and general equilibrium economic models are the focus of efforts to improve understanding of GHG emissions caused by ILUC, e.g.:
  - Europe: to inform RED policy decision
  - US: EPA for RFS-2; CARB for the LCFS for California
- Causal-descriptive models provide an alternative approach:
  - Use cause and effect logic to describe the behaviour of a given system, based on observations of how the system functions
  - Provide a more transparent analysis which enables input and review from a broad range of stakeholders.
- Causal-descriptive models could be used to derive ILUC GHG emissions factors or to inform economic modelling

# DfT has commissioned E4tech to develop ILUC factors using a causal-descriptive modelling approach

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- DfT have commissioned E4tech to use causal-descriptive modelling to develop ILUC GHG emissions factors for four fuel chains:
  - Bioethanol: wheat, sugar cane
  - Biodiesel: rapeseed, palm
- A key characteristic of this study will be capturing the views and insights of stakeholders to ensure it is based on the best available scientific and economic evidence.
- Project will aim to demonstrate the validity of the approach
- If appropriate the study may be extended to additional fuel chains in the future.

# The first step in the study is a literature review of existing ILUC modelling and related work

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- We will review relevant literature with a focus on identifying:
  - strengths and weaknesses of both modelling approaches,
  - proposed strategies for causal-descriptive modelling and
  - evidence analysing the key system effects relevant to ILUC (including those management practices which can mitigate the risk of causing ILUC).
- Literature of all types will be reviewed, including both published and grey literature

# A generic methodology will be developed which can address all known factors that influence GHG emissions from ILUC

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- A generic methodology will be developed which quantifies GHG emissions resulting from all the identified factors affecting ILUC – to ensure transparency and replicability.
- The methodology will be informed by the findings of the literature review and by input from stakeholders.
- Will be designed to take into account qualitative or quantitative indicators reflecting the impact of management practices which influence the risk of ILUC (which could also be used assess the risk of ILUC outside the context of the methodology).

# ILUC factors will be calculated for four fuel chains – bioethanol from wheat and sugar cane, biodiesel from palm and rapeseed

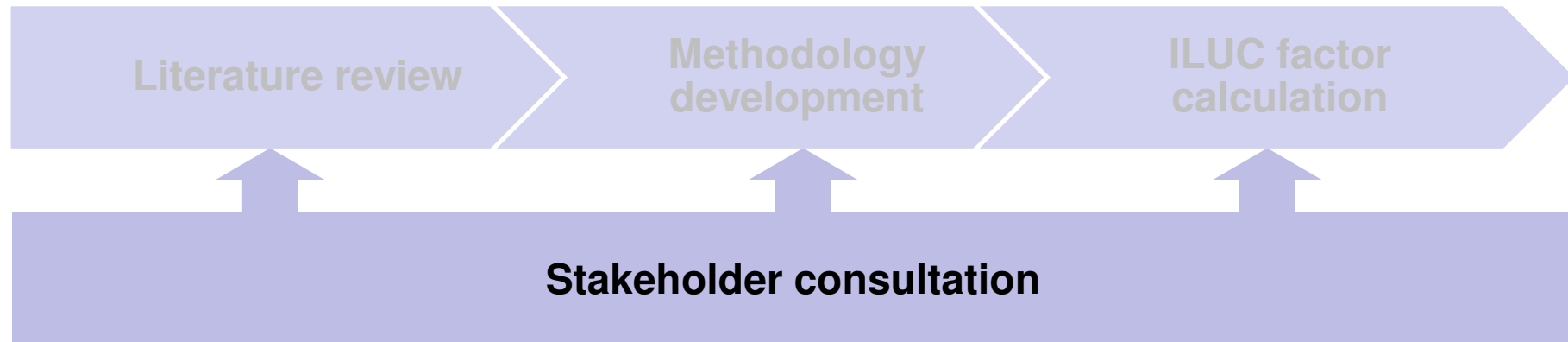
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- The methodology developed in the previous task will be applied to develop ILUC factors for four biofuel chains:
  - Bioethanol from wheat and sugar cane
  - Biodiesel from palm and rapeseed
- The effects of management practices will be taken into account. Other factors such as country-level variations will be considered if possible.
- Sensitivity analysis will be used to identify key input assumptions
- All modelling will be carried out using publicly available data sources (e.g. from FAO databases) and from evidence submitted by stakeholders.

Stakeholder views will be set on all aspects of the study, particular via the Expert Advisory group

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- Expert Advisory Group
  - Technical experts in: specific biofuel chains, agricultural and related markets, different approaches to modelling ILUC impacts; land use patterns
- General stakeholder meetings, to discuss:
  - Draft methodology (early Dec)
  - First set of ILUC Factors (early Jan)
  - Second set of ILUC Factors (late March)

# Evidence from stakeholders is sought throughout the study

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- All stakeholders are invited to submit relevant written evidence throughout the course of this study.
- In the immediate term, we are seeking input on appropriate literature to review and on the detailed design of a causal-descriptive methodology for assessing ILUC – should be submitted to E4tech **ASAP and before November 20<sup>th</sup>**
- In the future we will be seeking evidence specific to the ILUC impacts of the individual fuel chains we are studying.
- Evidence can be submitted to the dedicated email address:  
[ilucstudy@e4tech.com](mailto:ilucstudy@e4tech.com).

Thank you in advance for your input!

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Dedicated email address: [ilucstudy@e4tech.com](mailto:ilucstudy@e4tech.com)

A project website will be regularly updated:

[www.ilucstudy.com](http://www.ilucstudy.com)