Developing Models with RIGOUR

Department for Business Energy and Industrial Strategy

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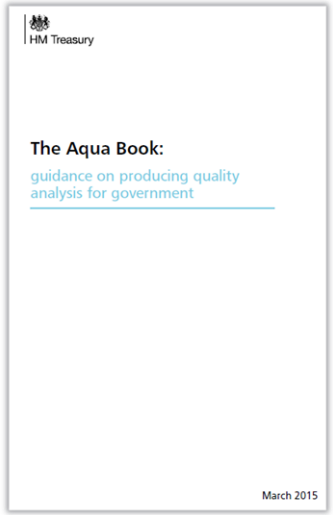
Department for
Business, Energy
& Industrial Strategy

Purpose

- Introduce a scenario based model

  “The Mackay Carbon Calculator”

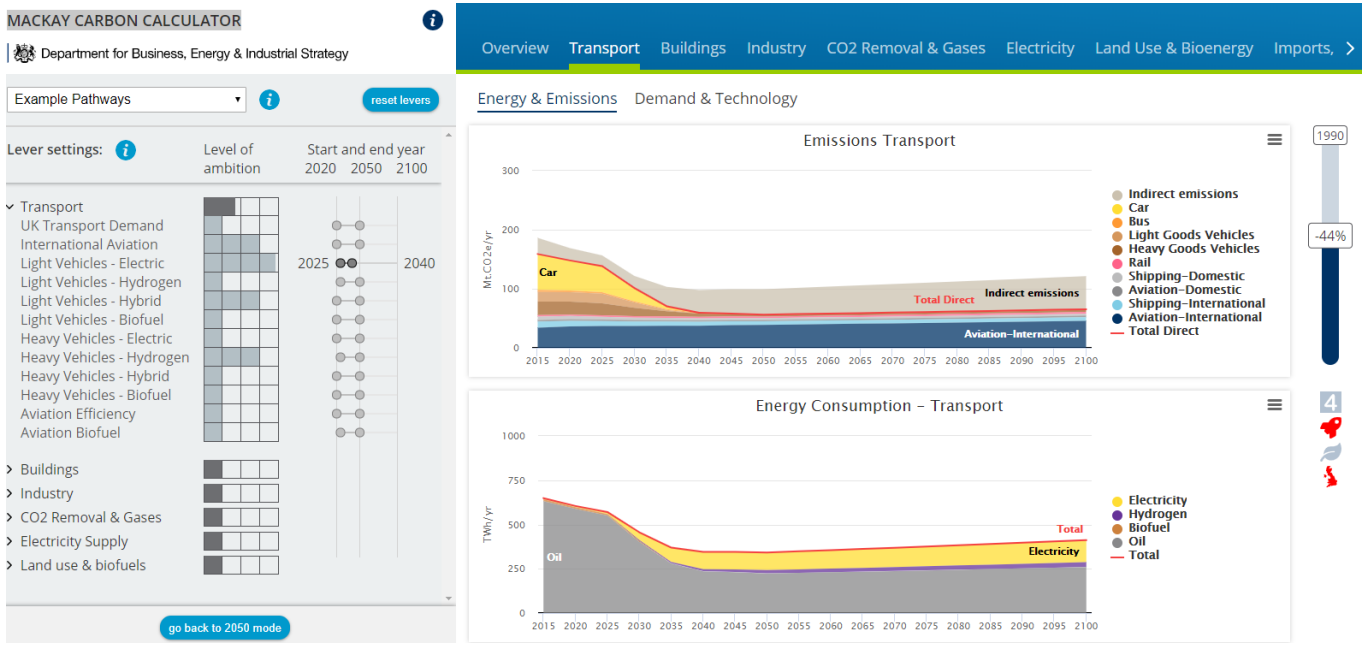
- Describe our assurance process for models we develop
  - In-house
  - Outsourced



Based on the Analytical Quality Assurance Book – The AQuA Book

The model - Mackay Carbon Calculator

- UK developed the first calculator
- Many others developed since then
- The new model introduces
  - Modelling to 2100
  - Ability to change start and end dates
  - Completely updated technology “levers”
  - Fractional values for levers
- Assumptions and data align with
  - Current science and
  - More complex models



So how do we know it works?

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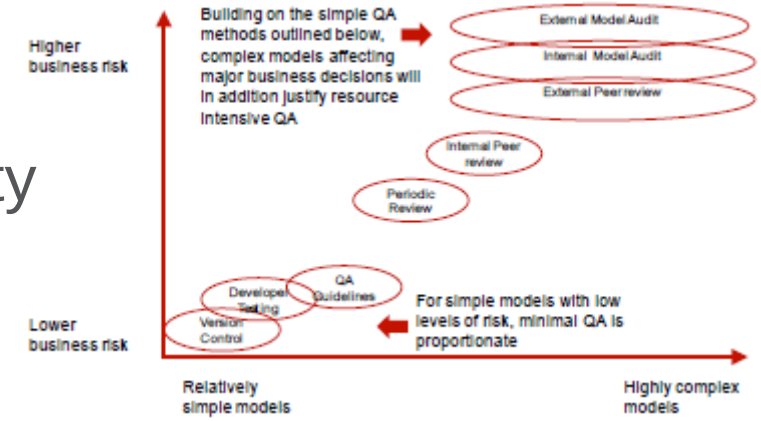
Principles

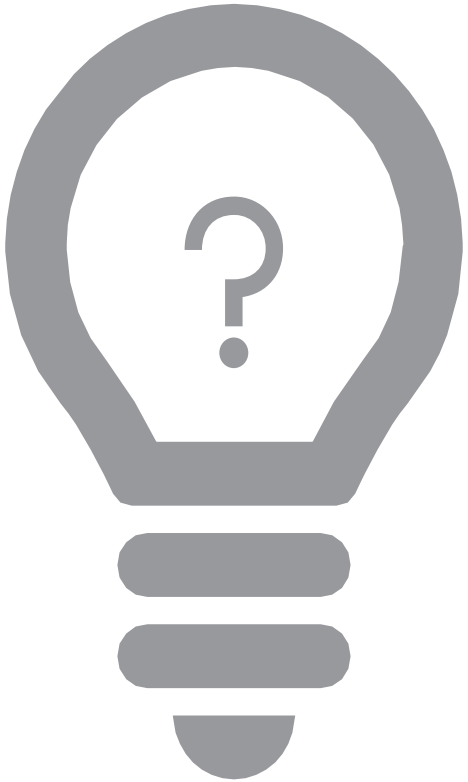
1. You can't assure your own model
2. Assurance time depends on importance and complexity
3. Set time for re-reviewing models and assumptions



4. See the process in action not just the results – important for commissioned work
5. RIGOUR – repeatable, independent, grounded in reality, objective, understood uncertainty, results address the question

Modelling Quality Assurance - Steps

1. Documenting a model: scope, specification, “map”, technical guide, “sign off”
2. Structure & Clarity: depends on language
   - Excel example
3. Validation – is the model doing the right thing
4. Verification – is the model doing it right
5. Assumptions: Using the assumptions log

Documented using a log book
Single location– Rates assurance 0-100, locates documents, provides audit trial

Thank you