Climate science and impacts (WP1) meeting on 24th October

Attendees: David Mackay, Sophie Hartfield, Ken Wright (DECC), Erica Thompson, Lenny Smith (LSE), Jem Woods (Imperial), Jason Lowe (Met Office), Rachel Warren (Tyndall), Mikhail Semenov (Rothamsted).

Recap on deliverables by Christmas

- We discussed and agreed table of deliverables on page 5 of the attached workplan note.
- Sea level rise: we discussed various ideas around how to do this, and concluded that we could do something simple (in the "back of the envelope" section) based on today's population demographics (e.g. "73cm of sea level rise by 2100 would be sufficient to cover xkm2 of land; currently around x million people live on this land"). The exact approach we use may depend on the group's decision on whether we use a simple or complex approach to relating emissions to temperature – we will make this decision next year. We agreed that Erica would not prioritise doing any sea level rise work by Christmas.
- Technical note on "advisability of including additional regional impacts estimation into the Calculator": Erica would produce this by 13th December. **Rachel Warren** and **Jason Lowe** will write a short peer review of this note by **17th January**.
- Walker Institute regional impacts projections – we hoped to include this work in the web tool by Christmas, but the timing is very tight. Jem would talk to Nigel to see if he could send this over. Erica to send Nigel an example spreadsheet showing what format Nigel should represent his map data to make it easy for Climate Media Factory to pick it up and link it to the web tool. **Nigel** – it would be great if you could send Erica your formatted data by cop **Friday 8th November** in order to fit with the schedule of updates to the master version of the Glob Calc s/sheet.

Discussion of visuals for Christmas web tool

- Please find attached mock ups of the dash board and climate science/impacts pages of the web tool, as planned for Christmas. These are updated to reflect the discussion in this meeting. (Please note that we are not seeking comments on these visuals at present, as Climate Media Factory need to start work on them now in order to meet our deadlines. The February meeting will be the ideal time for us to discuss improvements to the visuals.)
- We agreed it was important to include a caveat: "mitigation options for short lived gases are not well represented yet. This means that the Calculator is currently not well placed to explore the impact of measures such as fewer cattle."
- We discussed the fact that when the IPCC present the conclusions of the various climate models, they do an "off model fix" to inflate the uncertainty range. We agreed that it would be preferable to be able to show this inflated uncertainty range in the Glob Calc web tool. We concluded that the best way of doing so would be to include a "model uncertainty lever": when set at low, it would only show model results; when set at high, it would show the full uncertainty using the "IPCC fix". We won't be able to implement this IPCC fix before Christmas, so the lever will be locked in the low position by the end of the year. More detail on this lever is in the attached note. The description of this lever will doubtless need a lot more drafting attention, which we will return to in the new year.
- **Lenny** kindly volunteered that he might be able to write a short paper for circulation around KIC partners. We could use the Huddle discussion stream to comment on it.

Land/bio/food (WP2) meeting on 29th October

Attendees: David Mackay, Anna Stephenson, Sophie Hartfield (DECC); Jem Woods, Alexandre Strapasson, Nicole Kalas (Imperial).

- We discussed Alexandre's slide pack (attached). We spent most of our time discussing the interdependency between different uses of land and how to deal with land scarcity. We agreed that he Calculator should have a hierarchy of land use for food, then conservation, then bioenergy (in that order). This is a complex sector but by Christmas we would only have time to do something fairly simple.
- BECCS: the supply of bioenergy should be captured in Alexandre's worksheet; the conversion of the bioenergy into liquid/gas takes place in the synthetic fuels worksheet (owned by Anindya); the combustion of bioenergy and sequestration of emissions from BECCS plants takes place in the electricity generation worksheet (also owned by Anindya). Alexandre would send any estimates he has on the scale of BECCS to Anindya.

Next steps

- "IPCC fix" meeting on 14th January (tbc): we propose to meet to discuss the methodology used by the IPCC to do their off-model inflation of uncertainty for the climate model results. We propose to invite up to 3 climate science "guest experts" in this field to come and talk to us about this. So far we have identified Mat Collins (Exeter University), Ted Shepherd (Reading University) and Brian Hoskins (Imperial). Any other suggestions for guest experts welcome. All KIC partners are invited to attend this meeting too. The meeting will be in London. A meeting appointment for this will follow.
- KIC Project Committee meeting on 4th February: we have a meeting set up for 2-5pm on 4th February in DECC offices to discuss the first version of the web tool and next steps in the project. We now propose to extend this meeting to 12-5pm because there is so much to discuss on the climate science and impacts! The agenda for this meeting will be:
    - 12-1.30pm: land/bio/food (WP2) discussion (working lunch).
    - 1.30-5pm: climate science and impacts discussion. Agenda will include:
        - Advisability of incorporating regional impacts into the Glob Calc (paper by Erica) and peer review (papers by Jason Lowe and Rachel Warren).
        - Simple Vs complex approach for relating emissions to temperature.
        - Prioritising the next steps in this work (e.g. on sea level rise, ocean acidification, sea ice extent).