

## Appendix F: Additional Calculations

In addition to the standard calculations specified in Appendix A, a number of the modelling groups performed additional calculations that did not follow the specifications.

Some of these are mentioned in the body of the report, particularly those that provide a basis for comparison with our ‘core’ results. Some are included in the various figures and tables, flagged as ‘non-standard’ cases. In this appendix we list these and additional ‘non-standard’ calculations. Some of these results may be obtainable from the Carbon Dioxide Information Analysis Center. In other cases, results may be obtainable from the individual modellers.

The cases discussed in the report are:

**Feedback Model R\*** includes effects of feedbacks from climate change. This is discussed in Section 12b. For Model T, the information regarding the inclusion of temperature feedbacks was inconsistent.

**WEC scenarios** These additional scenarios are discussed in Section 12a. The only calculations are from Model W.

**Alternative terrestrial representation** Model B was used for the 7 stabilisation cases and for IS92a. For each of these histories, 3 sets of calculations were run, differing in the way the terrestrial component was treated. One set use the prescribed ‘land-use’ flux while the others simulated the land-use flux by calculations within the model. In all cases a residual flux was estimated from an inverse initialisation and was extrapolated into the future as a constant. This is discussed in Section 12c.

Other calculations contributed are:

**Model B** In addition to the calculations described above, Model B was used to estimate the decline in atmospheric CO<sub>2</sub> given zero emissions after 1990, using the total model and the ocean-only component.

**Model G** In this case, the concentration profiles for stabilisation differed from those specified. For stabilisation at 450 ppmv, the difference is small. For stabilisation at 650 ppmv, the target date for stabilisation was earlier, giving a profile with an effective compression of the time-scale. This led to emission estimates which, compared to models using the specified profile, were initially higher and then had a more rapid decline after the peak. Figure 8a shows the integrated emissions.

The profile that was used was intended to follow a ‘business-as-usual’ type of emission history for as long as possible consistent with achieving the specified stabilisation.

**Model J** This model was used to define a reference response function to be used in the definition of Global Warming Potentials (see Section 9). This was defined as the response relative to an emission profile designed to give constant concentrations from 1990 onwards. The response was defined using a 10 GtC pulse injected in 1995. In addition, two other response functions were calculated using Model J. These were defined by adding 10 GtC pulses in 1995 to the DEC0% and IS92a emissions.

**Model V** The concentration profile for S650 differed from that specified. This was intended to correspond to a depletion of fossil fuel reserves.

**Model Z** An additional forward calculation used a scenario from Bashmakov.

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