**Technical Note for Figure SPM1**

Timeseries of observed and human-induced warming are reproduced exactly as in Figure 1.2. Responses to Idealized future CO2 emissions and non-CO2 forcing trajectories are simulated with the FAIR simple carbon-cycle climate model. A normal distribution for the Transient Climate Response (TCR) compatible with the *likely* range as assessed by IPCC-AR5, along with a similarly AR5-based log-normal distribution for the Equilibrium Climate Sensitivity (ECS), are used as input parameter distributions for the model. Other thermal climate response parameters are set to match those used in Millar et al 2017.

Historical effective radiative forcing (ERF) estimates from AR5 are used to drive the model over the historical period, extended forcing components of the RCP8.5 scenario (http://www.pik-potsdam.de/~mmalte/rcps/) between 2011 and 2020, scaled to match the corresponding AR5 ERF component in 2011.

A normal distribution for human-induced warming in 2017 is constructed to match the assessed *likely* range uncertainty around the 2017 value for the best-estimate human-induced warming shown in Figure 1.2. Past and future anthropogenic aerosol effective radiative forcing is varied with the percentile of the TCR distribution, accounting for combined uncertainty in the non-CO2 effective radiative forcing components that were assessed to have Gaussian-distributed uncertainty in AR5 (draws from this distribution are anti-correlated with TCR) to span this *likely* range of human-induced warming.

CO2 emissions prior to 2020 are diagnosed from the FAIR simple climate model, from the CO2 ERF, with carbon-cycle parameters constrained to give diagnosed 2017 CO2 emissions rates approximately compatible with the Global Carbon Project (GCP) best-estimate for 2017 emissions for all draws from the TCR distribution. Idealised emissions scenarios are constructed by linear declines of CO2 emissions from 2020 to reach net-zero in 2040 and 2055.

Non-CO2 ERF is assumed to evolve from its 2020 value either according to an indicative pathway consistent with typical 1.5°C consistent pathways, as assessed in Chapter 2, through to 2100, or with no further decline permitted from the value reached in 2030.