Background note on IPCC SLR projections in relation to the Science Panel's work

Global Mean Sea Level Rise Projections

IPCC AR5 Chapter 13, page 1140
http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter13_FINAL.pdf

"It is very likely that the rate of global mean sea level rise during the 21st century will exceed the rate observed during 1971– 2010 for all Representative Concentration Pathway (RCP) scenarios due to increases in ocean warming and loss of mass from glaciers and ice sheets. Projections of sea level rise are larger than in the AR4, primarily because of improved modeling of land-ice contributions. For the period 2081–2100, compared to 1986–2005, global mean sea level rise is likely (medium confidence) to be in the 5 to 95% range of projections from process-based models, which give 0.26 to 0.55 m for RCP2.6, 0.32 to 0.63 m for RCP4.5, 0.33 to 0.63 m for RCP6.0, and 0.45 to 0.82 m for RCP8.5. For RCP8.5, the rise by 2100 is 0.52 to 0.98 m with a rate during 2081–2100 of 8 to 16 mm yr–1. We have considered the evidence for higher projections and have concluded that there is currently insufficient evidence to evaluate the probability of specific levels above the assessed likely range. Based on current understanding, only the collapse of marine-based sectors of the Antarctic ice sheet, if initi-ated, could cause global mean sea level to rise substantially above the likely range during the 21st century. This potential additional contribu-tion cannot be precisely quantified but there is medium confidence that it would not exceed several tenths of a meter of sea level rise during the 21st century. {13.5.1, Table 13.5, Figures 13.10, 13.11}"

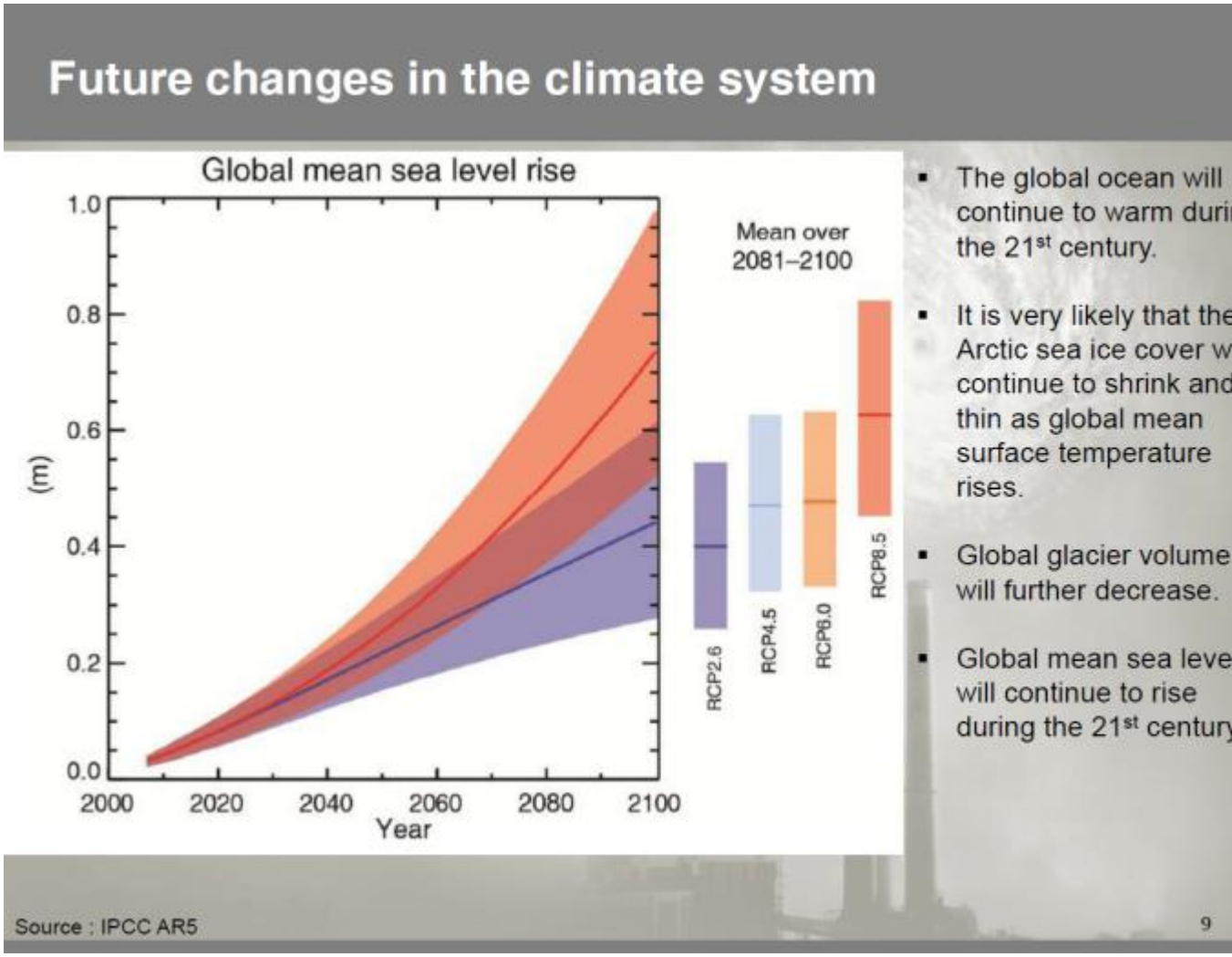
Note these figures are not the sea level rise by 2100 but 2081–2100, compared to 1986–2005 (say 2090 compared with 1996).

However the supplementary material
http://www.climatechange2013.org/images/report/WG1AR5_Ch13SM_FINAL.pdf Table 13.SM.1 shows the same ranges rise (still relative to ~1995) but states they are now the 2100 values.

Each of the scenarios (RCPs -Representative Concentration Pathways) represent different assumptions about emission levels. The exact details are in Annex II off the above web page, and http://www.pik-potsdam.de/~mmalte/rcps/ gives a summary.

RCP8.5 is regarded as high, RCP6.0 medium+ (and is general used as the most likely), RCP4.5 medium- and RCP2.6 low.

What follows is from a presentation “Conclusions of the IPCC Working Group I Fifth Assessment Report, AR4, SREX and SRREN” R. K. Pachauri and shows more clearly the two more extreme scenarios.



To summarise the IPCC gives 4 possible scenarios for sea level rise:

1. **give 0.26 to 0.55 m for RCP2.6,**
2. **0.32 to 0.63 m for RCP4.5,**
3. **0.33 to 0.63 m for RCP6.0,**
4. **and 0.45 to 0.82 m for RCP8.5. For RCP8.5, the rise by 2100 is 0.52 to 0.98 m**

The Panel should clearly state that it is a policy makers decision to choose decide what further steps should be taken with regard to management in respect of each scenario.

It is not for the Panel to indicate that the scenario indicating the highest SLR is the one to go with unless the Panel has greater expertise on SLR than the IPCC scientists.