Supplementary information to:

The IPCC Sixth Assessment Report WGIII climate assessment of mitigation pathways: from emissions to global temperatures

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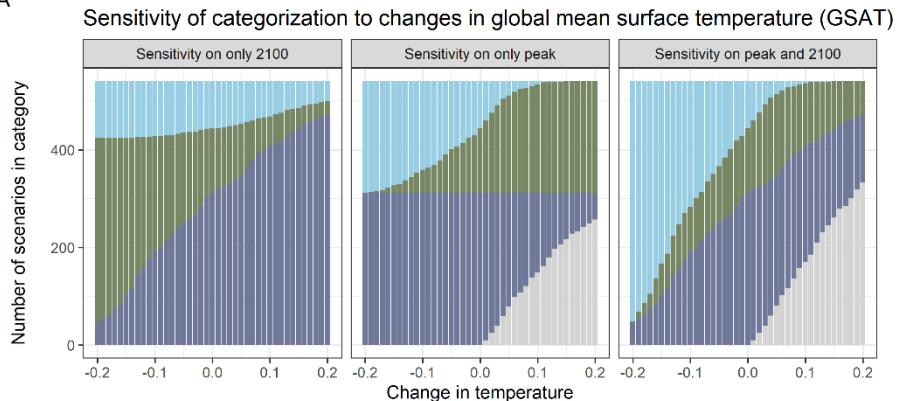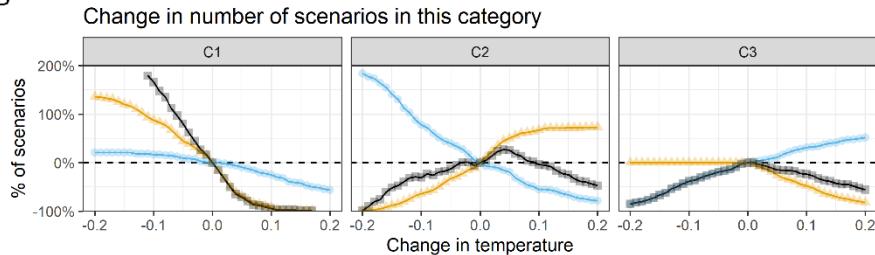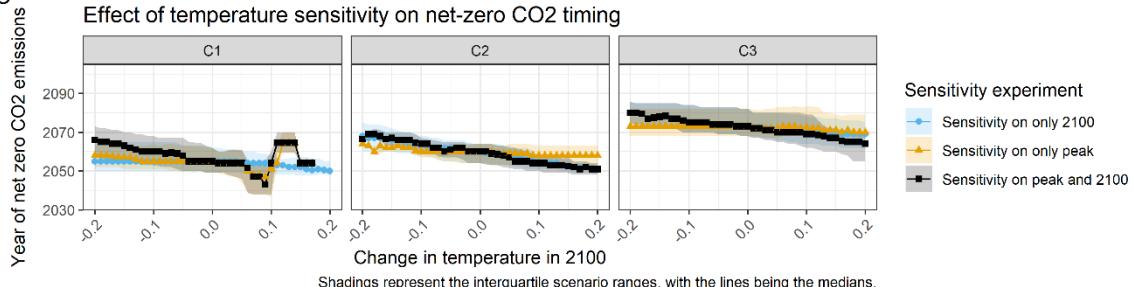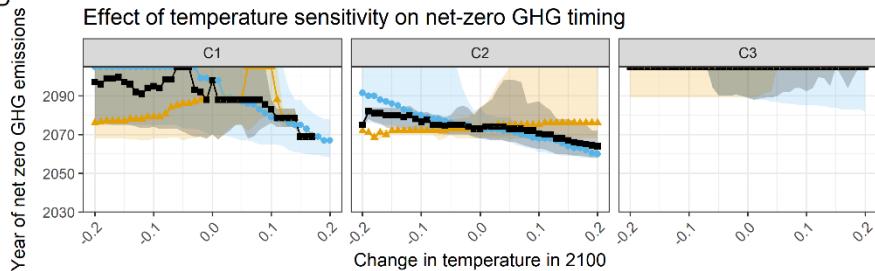
Supplementary Figure 1: sensitivity to temperature estimate changes of number of scenarios and net zero CO₂ and GHG characteristics.

	Reference Value	Range	Number of scenarios out of range
CO₂ (total) in 2019	44,251 MtCO2	± 40%	23
CO₂-FFI in 2019	37,646 MtCO2	± 20%	55
CH4 in 2019	379 MtCH4	± 20%	139
CO₂-FFI percentage change 2010-2020	-	0 - 50%	74
CCS from energy in 2020	-	0-250 Mt/CO2	77
Primary Energy in 202	578 EJ	± 20%	73
Electricity Nuclear in 2020	9.77 EJ	± 30%	266
Electricity Solar and Wind in 2020	8.51 EJ	± 50%	377

Supplementary Table 1: The vetting criteria applied for the selection of global scenarios for the climate assessment based on Annex III Table II.4 of AR6 WG3 (IPCC, 2022)**.**

Model framework	C1	C2	C3	C4	C5	C6	C7	C8
AIM	4	3	17	8	13	4	6	0
C-ROADS-5.005	3	2	0	0	0	0	0	1
COFFEE 1.1	1	4	14	15	21	9	1	0
GCAM	6	6	13	9	6	1	6	1
GEM-E3_V2021	2	10	12	6	5	3	3	0
IMAGE	7	9	34	18	22	16	34	2
MESSAGE	20	43	59	39	57	20	28	0
POLES	4	10	26	24	20	11	19	0
REMIND	41	44	84	16	34	19	48	11
WITCH	9	2	31	14	24	9	12	14
EPPA 6	0	0	1	3	0	1	2	0
TIAM-ECN 1.1	0	0	20	6	10	4	5	0
MERGE-ETL 6.0	0	0	0	1	0	0	0	0

Supplementary Table 2: Overview of submitted scenarios by modelling framework, including the temperature classification (for vetted scenarios with climate outcome only).

References

IPCC: Annex III: Scenarios and modelling methods [Guivarch, C., E. Kriegler, J. Portugal-Pereira, V. Bosetti, J. Edmonds, M. Fischedick, P. Havlík, P. Jaramillo, V. Krey, F. Lecocq, A. Lucena, M. Meinshausen, S. Mirasgedis, B. O'Neill, G.P. Peters, J. Rogelj, S, in: IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, edited by: Shukla, P. R., Skea, J., Slade, R., Khourdajie, A. A., van Diemen, R., McCollum, D., Pathak, M., Some, S., Vyas, P., Fradera, R., Belkacemi, M., Hasija, A., Lisboa, G., Luz, S., and Malley, J., Cambridge University Press, Cambridge, UK and New York, NY, USA, https://doi.org/10.1017/9781009157926.022, 2022.