Annex A.1

This Technical Annex to Chapter 3 of the 2016 UNEP Emissions Gap Report provides technical background to the computations supporting the discussion in the chapter. It reproduces parts of the Annex to Chapter 2a of the 2015 UNEP Emissions Gap Report.

Methodology

Chapter 3 reports a reanalysis of the IPCC AR5 Scenario Database[1] with the characteristics of pathways that limit warming to below 1.5 or 2°C. It applies the same methodology as the 2015 UNEP Emissions Gap Report in which more detail is provided.

Table A.1.1.: *Overview of selection criterion for scenario subsets discussed in Chapter 3. The actual selected scenarios are provided in the following pages.*

Scenario subset	Selection criterion from IPCC AR5 Scenario Database
2°C (>66% in 2100)	Policy variable: 'P2' 2°C exceedance probability <0.34 in 2100 Exclude scenarios with 'RefPol-450-EE' and 'RefPol-450-PC' labels (as these are merely burden sharing variations from the same global pathway described in 'RefPol-450')
1.5°C (>50% in 2100)	From study on 1.5°C scenarios: Rogelj *et al.* (2015)

Supplementary Tables

Table A.1.2.: *Overview of model-scenario combinations per category described in Table A.1.1. that were drawn from the IPCC AR5 Scenario Database:* ***Scenarios limiting warming to below 2°C with greater than 66% probability in 2100****. Scenarios in this category always have a higher than 60% probability over the entire century.*

2°C (>66% in 2100)	
Model name	Scenario name
GCAM 3.1	LIMITS-RefPol-450
GCAM 3.1	LIMITS-RefPol-500
GCAM 3.1	LIMITS-StrPol-450
GCAM 3.1	LIMITS-StrPol-500
IMAGE 2.4	LIMITS-RefPol-450
IMAGE 2.4	LIMITS-StrPol-450
MESSAGE V.4	LIMITS-RefPol-450
MESSAGE V.4	LIMITS-StrPol-450
REMIND 1.5	LIMITS-RefPol-450
REMIND 1.5	LIMITS-StrPol-450

Table A.1.3.: *Overview of model-scenario combinations per category described in Table A.1.1. that were drawn from the literature:* ***Scenarios limiting warming to below 1.5°C with at least 50% in 2100****. From Rogelj et al. (2015)*

1.5°C (>50% in 2100)		
Model name	Scenario name	Original publication
MESSAGE V.4	myo_L15_BC_a	(Rogelj *et al.*, 2013)
MESSAGE V.4	myo_L15_BC_c	(Rogelj *et al.*, 2013)
REMIND 1.5	Scen215	(Luderer *et al.*, 2013)
REMIND 1.5	Scen235	(Luderer *et al.*, 2013)
REMIND 1.5	Scen245	(Luderer *et al.*, 2013)
REMIND 1.5	Scen255	(Luderer *et al.*, 2013)

[1] Hosted at the International Institute for Applied Systems Analysis (IIASA) and available online on: https://secure.iiasa.ac.at/web-apps/ene/AR5DB/

References

Luderer, G., Pietzcker, R.C., Bertram, C., Kriegler, E., Meinshausen, M., Edenhofer, O. (2013) 'Economic mitigation challenges: how further delay closes the door for achieving climate targets'. *Environmental Research Letters 8* (3).

Rogelj, J., Luderer, G., Pietzcker, R.C., Kriegler, E., Schaeffer, M., Krey, V., Riahi, K. (2015) 'Energy system transformations for limiting end-of-century warming to below 1.5°C'. *Nature Clim. Change 5*, 519-527.

Rogelj, J., McCollum, D.L., O'Neill, B.C., Riahi, K. (2013) '2020 emissions levels required to limit warming to below 2°C'. *Nature Clim. Change 3*, 405-412.