Low stabilization and new long term scenarios from the IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation (SRREN)

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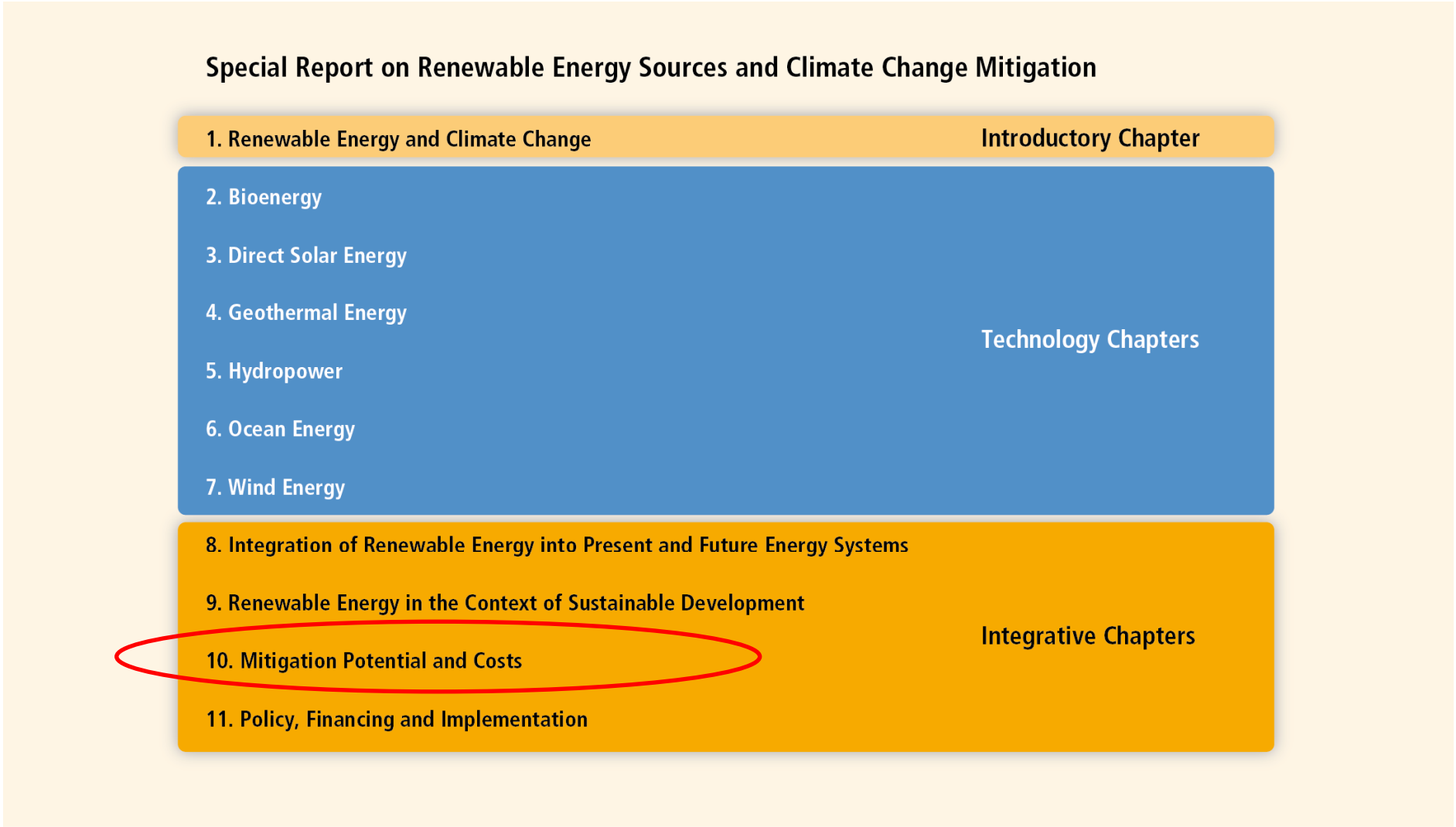
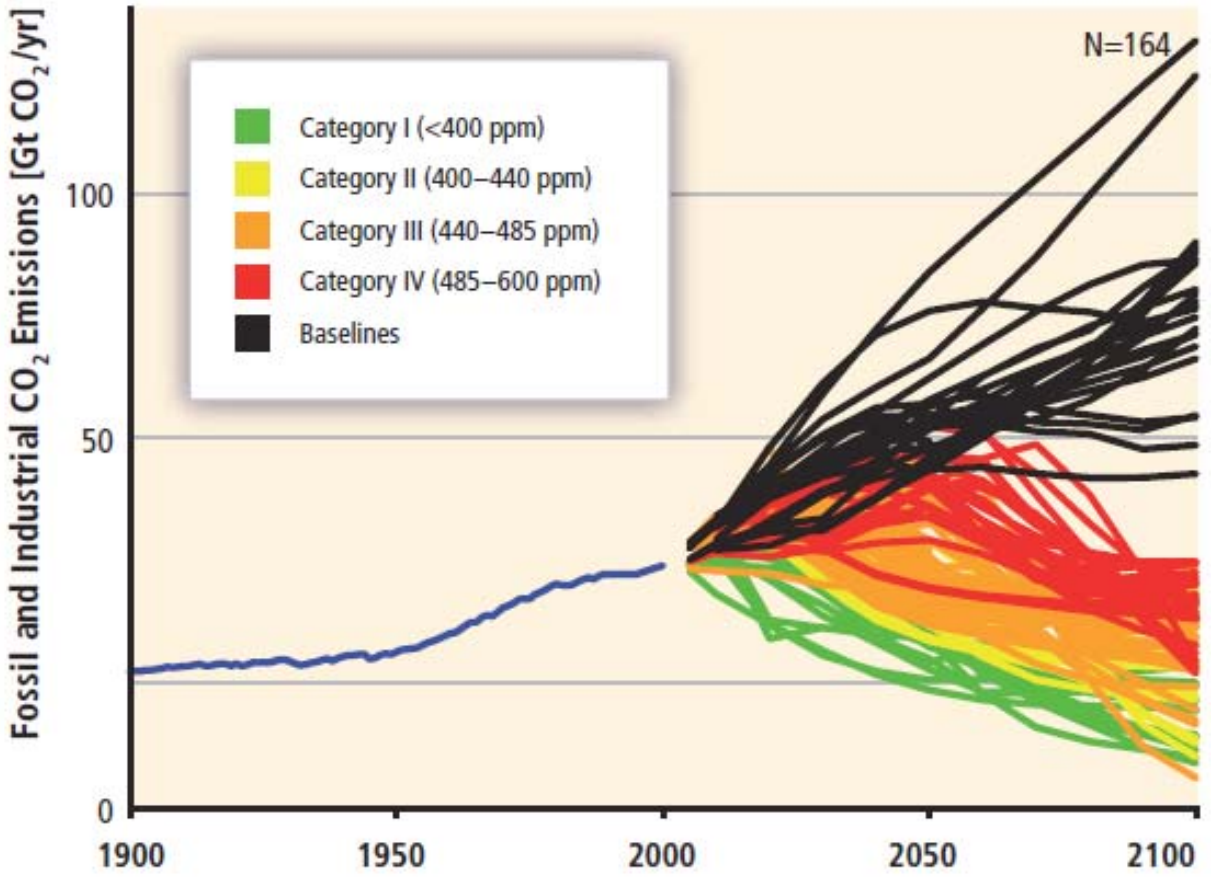
164 new long-term scenarios in chapter 10 of the SRREN



Exploring the whole solution space: identifying robust mitigation options in multi-model ensembles



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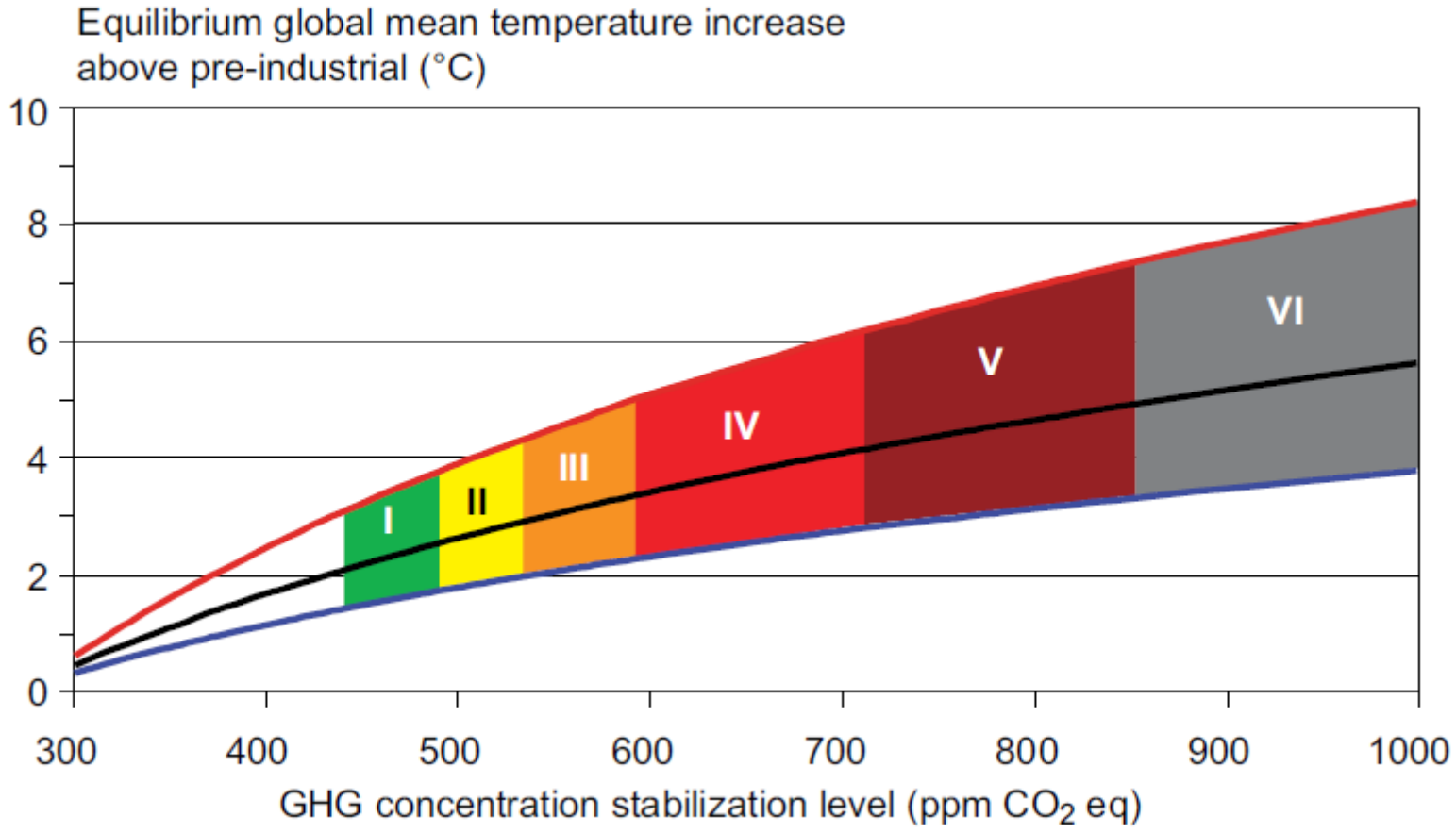
Several characteristics of SRREN scenarios:

(1)Update AR4 – all scenarios published after 2006
(2)Large number of low stabilization scenarios
(3)Climate policy in imperfect (2nd best) worlds
(4)Role of RE in mitigation portfolio

	CO_2 concentration by 2100 (ppm)	Number of scenarios	Policy Scenarios			
			First-best	Constrained technology	Second-best policy	Constrained technology & second-best policy
Baselines	>600	27	—	—	—	—
Category IV	485–600	32	11	13	6	2
Category III	440–485	63	20	29	11	3
Category II	400–440	14	7	6	1	0
Category I	<400	28	10	16	2	0

Relationship between GHG concentration stabilization levels and equilibrium global mean temperature increase: remaining uncertainties



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Swift and strong action required, if lowest stabilization level of atmospheric GHG concentration levels is to be achieved

Class	Anthropogenic addition to radiative forcing at stabilization (W/m^2)	Multi-gas concentration level (ppmv CO_2-eq)	Stabilization level for CO_2 only, consistent with multi-gas level (ppmv CO_2)	Number of scenario studies	Global mean temperature C increase above pre-industrial at equilibrium, using best estimate of climate sensitivity[c]	Likely range of global mean temperature C increase above pre-industrial at equilibrium[a]	Peaking year for CO_2 emissions[b]	Change in global emissions in 2050 (% of 2000 emissions)[b]
I	2.5-3.0	445-490	350-400	6	2.0-2.4	1.4-3.6	2000-2015	-85 to -50
II	3.0-3.5	490-535	400-440	18	2.4-2.8	1.6-4.2	2000-2020	-60 to -30
III	3.5-4.0	535-590	440-485	21	2.8-3.2	1.9-4.9	2010-2030	-30 to +5
IV	4.0-5.0	590-710	485-570	118	3.2-4.0	2.2-6.1	2020-2060	+10 to +60
V	5.0-6.0	710-855	570-660	9	4.0-4.9	2.7-7.3	2050-2080	+25 to +85
VI	6.0-7.5	855-1130	660-790	5	4.9-6.1	3.2-8.5	2060-2090	+90 to +140

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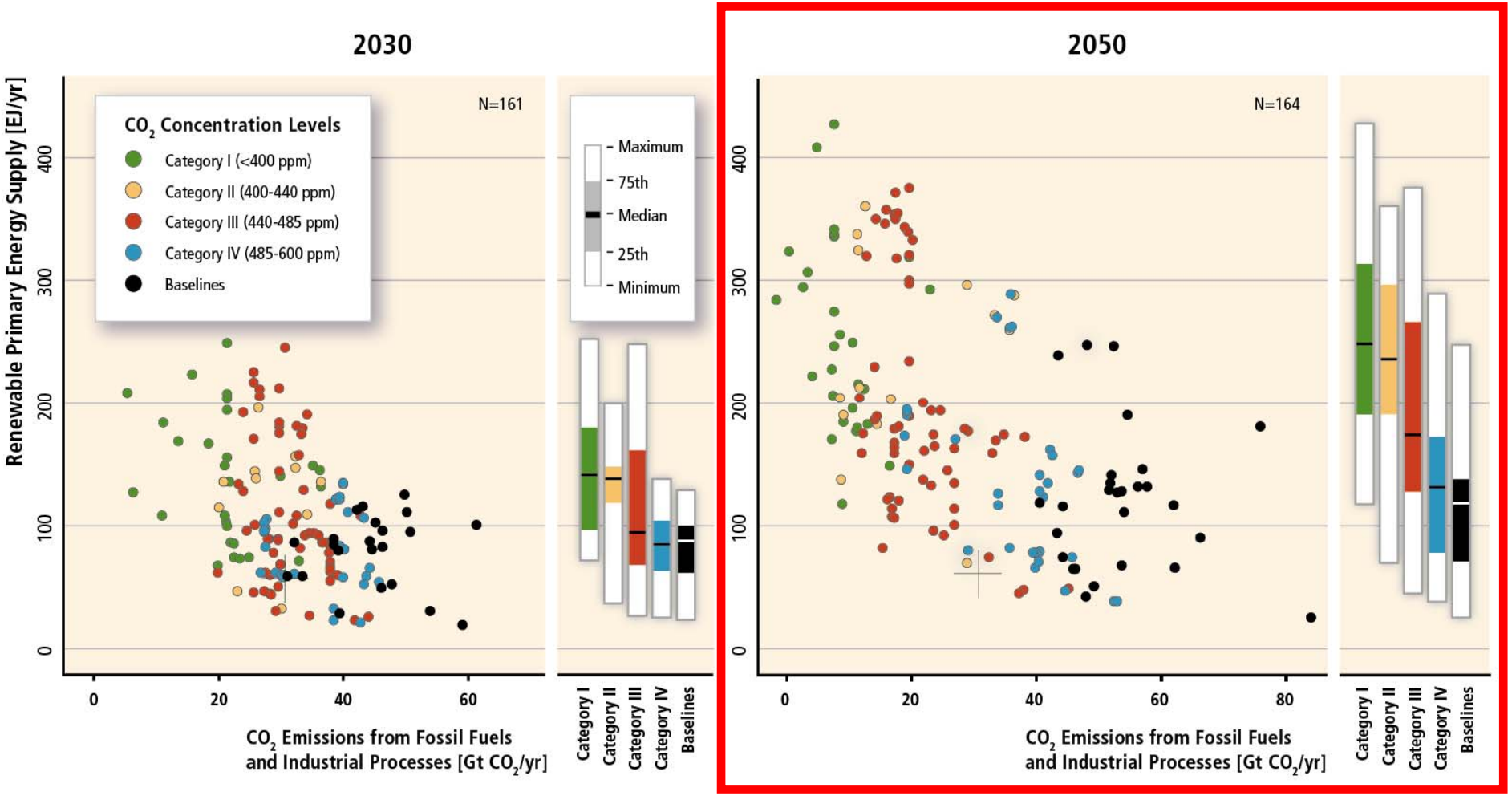
The contribution of renewable primary energy supply at differential CO2 concentration goals



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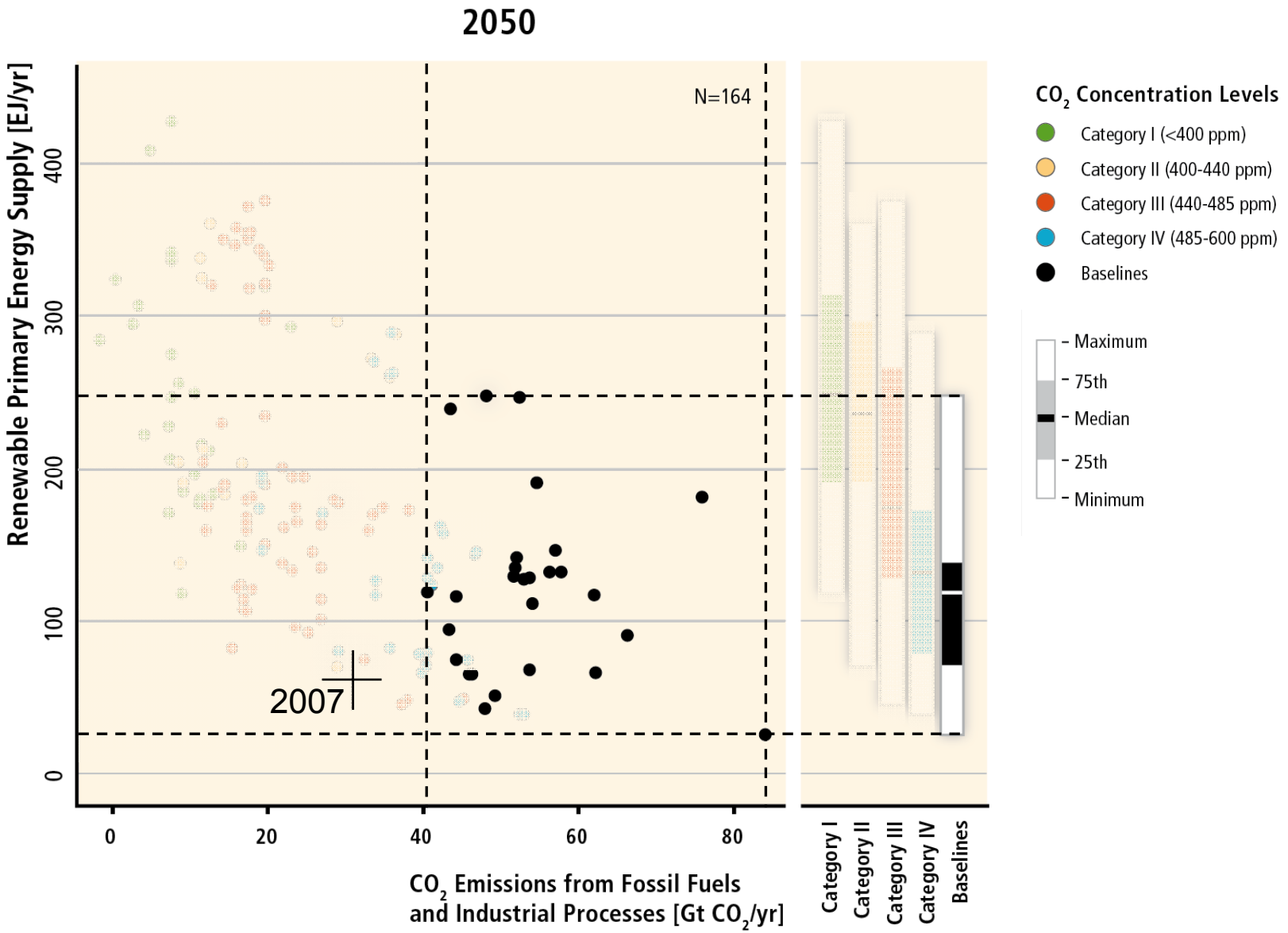
With increasing mitigation ambition, renewable energy plays an increasingly important role.



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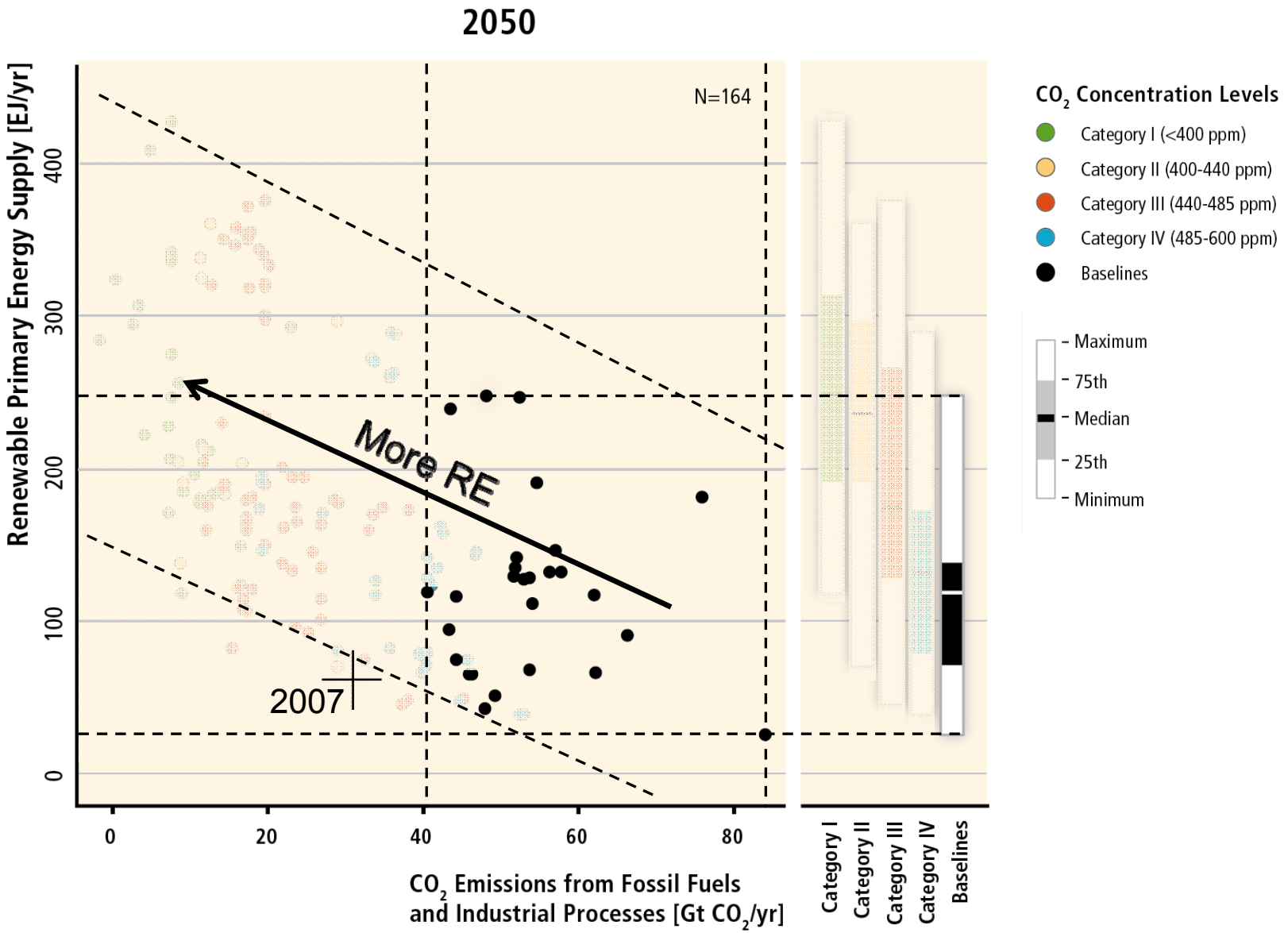
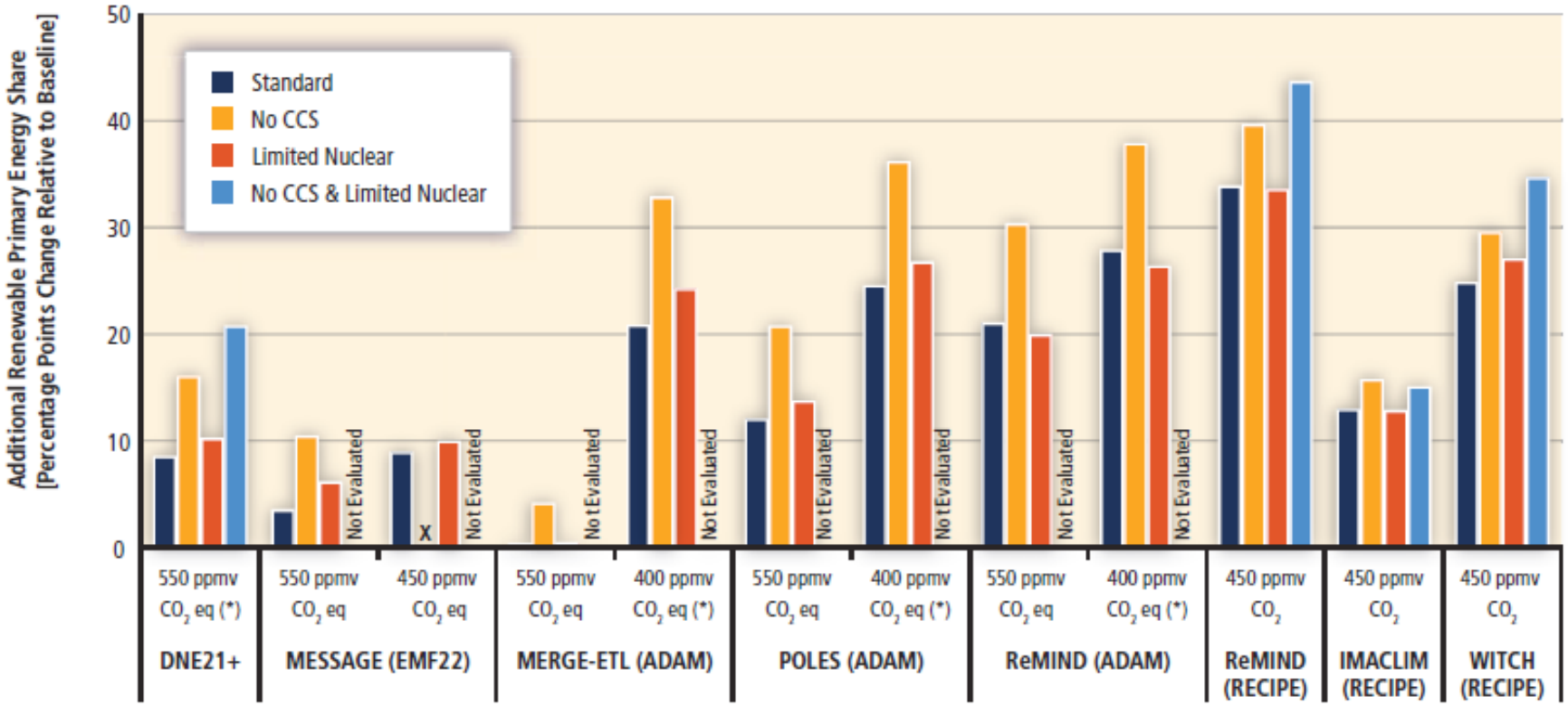


Insights from second-best worlds: When competing options are not available or are otherwise constrained, RE deployments are higher



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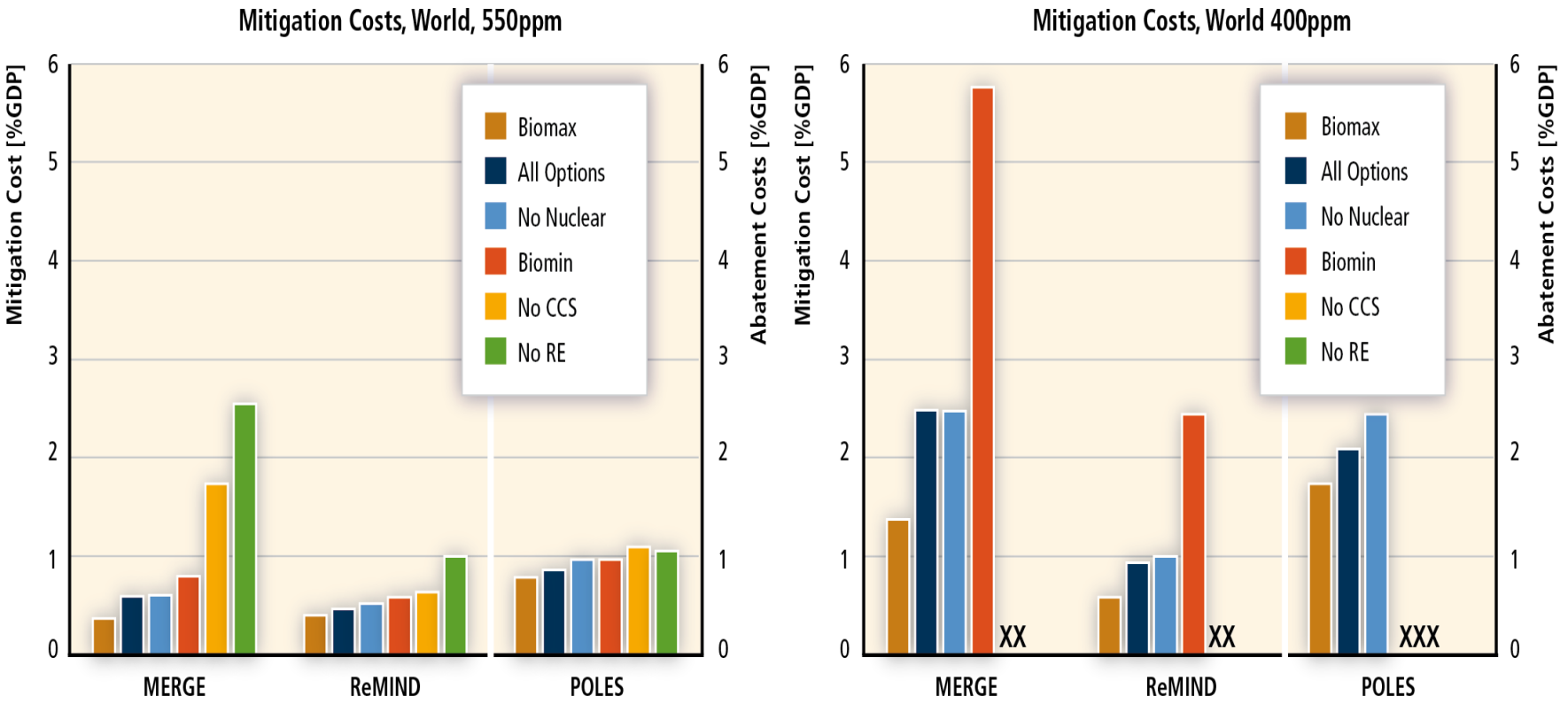
Global mitigation costs rise with ambition and unavailability of technologies. With unavailability of some technologies (RE, CCS) more ambitious stabilization goals may no longer be reachable



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Key messages (1)

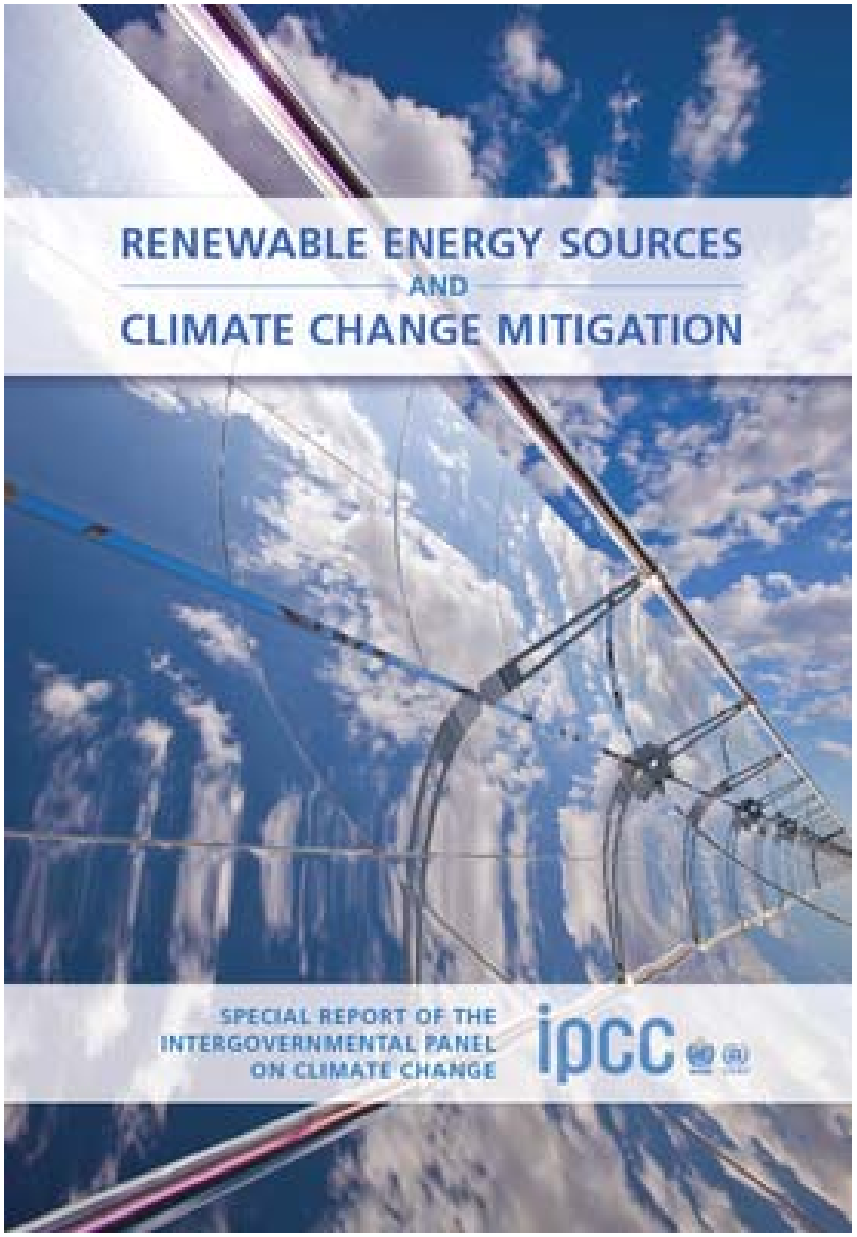
- New set of 164 IPCC scenarios available in SRREN considering full mitigation portfolio.
- Long-term stabilization of atmospheric CO2 concentrations below 400ppm achievable in multiple scenarios from multiple models.
- With increasing mitigation ambition, renewable energy plays an increasingly important role in mitigation portfolios across models and significantly increases in scenarios with low GHG stabilization concentrations.

Key messages (2)

- When competing options are not available or are otherwise constrained, RE deployments tend to be higher.
- Global mitigation costs tend to rise with ambition and unavailability of technologies.
- With unavailability of some technologies (RE, CCS) more ambitious stabilization goals may no longer be reachable.

AR5 outlook

I: Introduction	1. Introductory Chapter
II: Framing Issues	2. Integrated Risk and Uncertainty Assessment of Climate Change Response Policies 3. Social, Economic and Ethical Concepts and Methods 4. Sustainable Development and Equity
III: Pathways for Mitigating Climate Change	5. Drivers, Trends and Mitigation 6. Assessing Transformation Pathways 7. Energy Systems 8. Transport 9. Buildings 10. Industry 11. Agriculture, Forestry and Other Land Use (AFOLU) 12. Human Settlements, Infrastructure and Spatial Planning
IV: Assessment of Policies, Institutions and Finance	13. International Cooperation: Agreements and Instruments 14. Regional Development and Cooperation 15. National and Sub-national Policies and Institutions 16. Cross-cutting Investment and Finance Issues



Thank you!

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