This poster is based on: Riahi et al, (forthcoming) and Brutschin et al., (forthcoming) References: Rogelj, et al. A new scenario logic for the Paris Agreement long-term temperature goal. 2019. Nature 573 357-363.

Balancing global sources and sinks under the Paris Agreement decreases overall feasibility concerns but requires faster mitigation early on Bas van Ruijven (IIASA), Keywan Riahi (IIASA), Elina Brutschin (IIASA), Silvia Pianta (CMCC)

I. New framework for feasibility assessment

Geophysical	Technological	Economic	Institutional	Socio-cultu
BECCS	Renewables	Investments GDP loss	Carbon price	Demand shif
each scen	ario is evalua	ated along i	multinle inc	licators a

each scenario is evaluated along multiple mulcators and categorized into different levels of concern

> **INCLUDES INTERACTIVE VISUAL TOOL TO ASSESS SCEANARIOS USING DIFFERENT** THRESHOLDS: https://tinyurl.com/3d2beujm **Global Net Zero Budget** scenarios require **faster transition by 2030** but avoid persistent feasibility concerns later in the century when compared to Full Century scenarios

TECHNOLOGICAL/GEOPHYSICAL

Global Net Zero Budget scenarios require **rapid** deployment of renewables but rely less on new technologies such as BECCS where major geophysical concerns arise











Unprecedented and speculative rate of transformation

Could be plausibly extrapolated based on the current state of knowledge

Observed in the past or documented in the literature



*In this set implications of COVID-19 are not considered. **Scenario logic proposed by Rogelj et al.(2019), scenarios described in Riahi et al. (forthcoming)

Transformational Trade-offs

ECONOMIC

Global Net Zero Budget scenarios require **larger** investements early on but avoid persistent GDP losses in the long term





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II. New scenario ensemble

Global Net Zero Budget logic:

focus on the remaining carbon budget in the near term until balance between sources and sinks is reached	aggregated 8.1
does not allow for net-negative CO2 emissions as opposed to the Full Century budget and thus avoids temperature overshoot	1.6 Fevels of concern
	1.2
overall budget of 600 Gt is associated with more ambitious climate goals (broadly consistent with a median temperature goal of 1.4-1.8°C)	1.0

Higher carbon prices as a proxy for policy stringency (institutional commitment) early on in Global Net Zero Budget scenarios avoid shifting the burden of persistent final energy demand reductions towards the end of the century (which requires major behavioral/social changes)









This Figure illustrates the implications of intertemporal trade-offs when the categorization of scenarios into different levels of concerns is aggregated across all indicators using geometric mean.

INSTITUTIONAL/SOCIAL