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Including urgency in global warming assessment in LCA

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AIMS

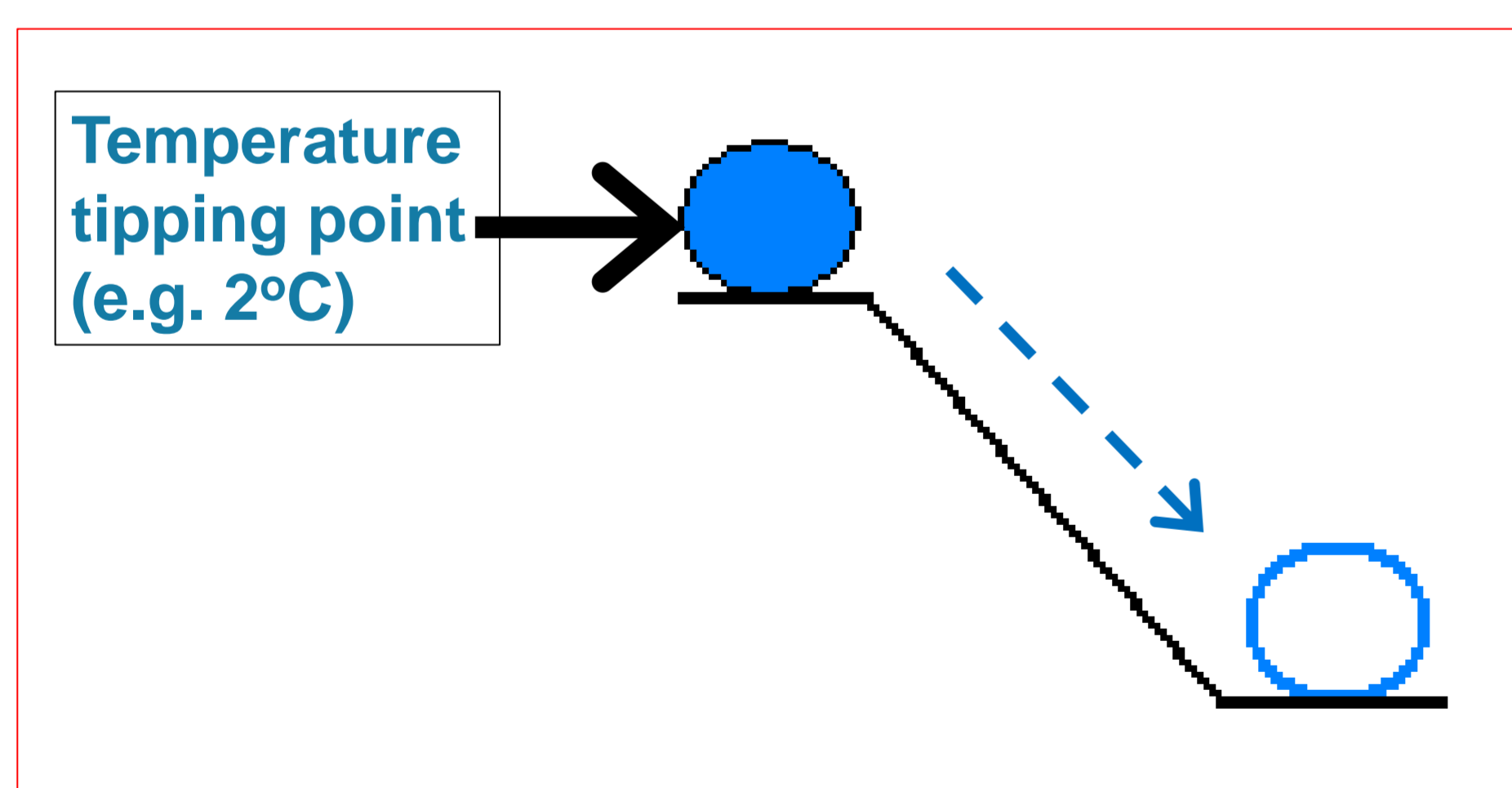
- Address the issue of climatic tipping points, when assessing global warming in life cycle assessment (LCA)
- Address the value of temporary carbon storage in terms of climate change mitigation
 - Introduce additional impact category; a 'climatic tipping potential' (CTP)

Relevance of new suggested impact category

- Addressing climate change is urgent
 - Temperatures approach critical levels
 - Global warming potential (GWP) does not consider climatic tipping points and urgency of staying below such

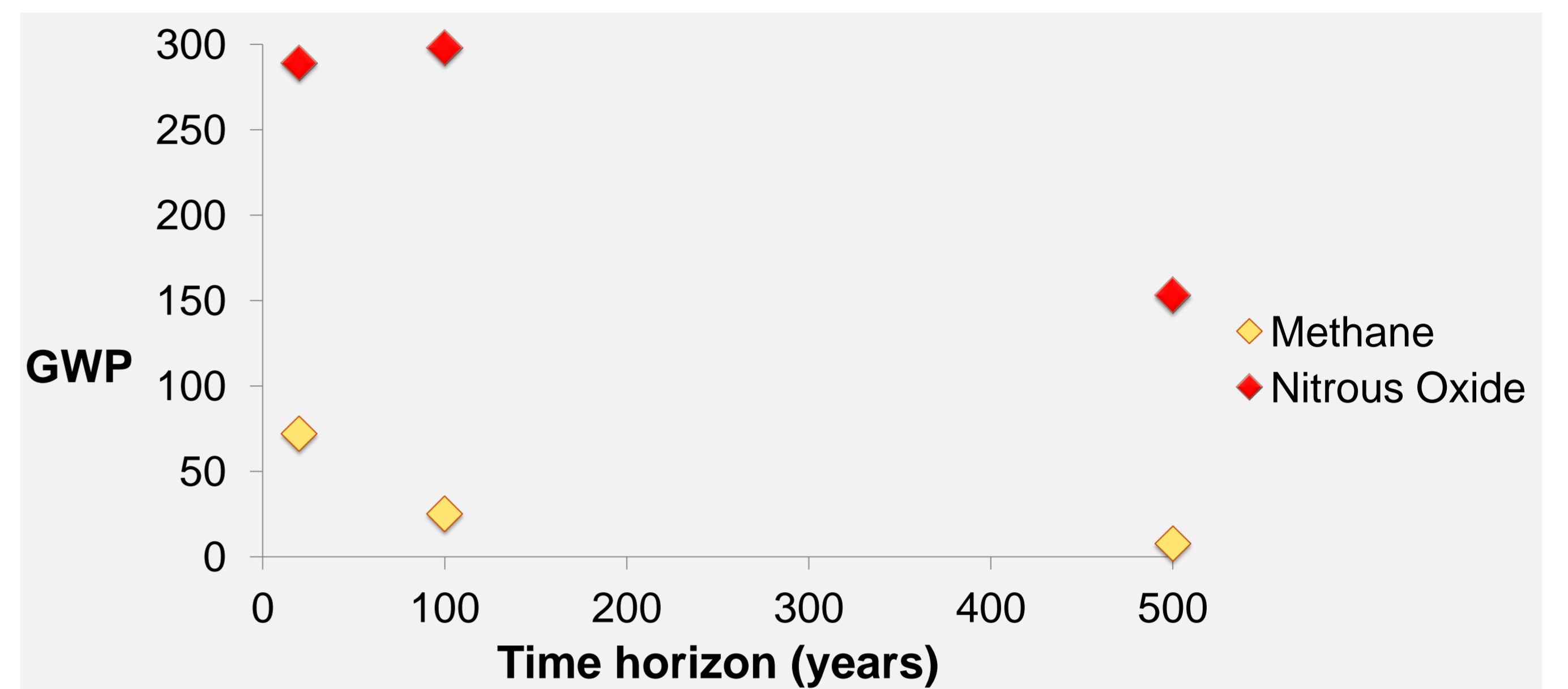
- Crossing climatic tipping points may:
 - Lead to dramatic climate change
 - Be irreversible

(IPCC, 2007)



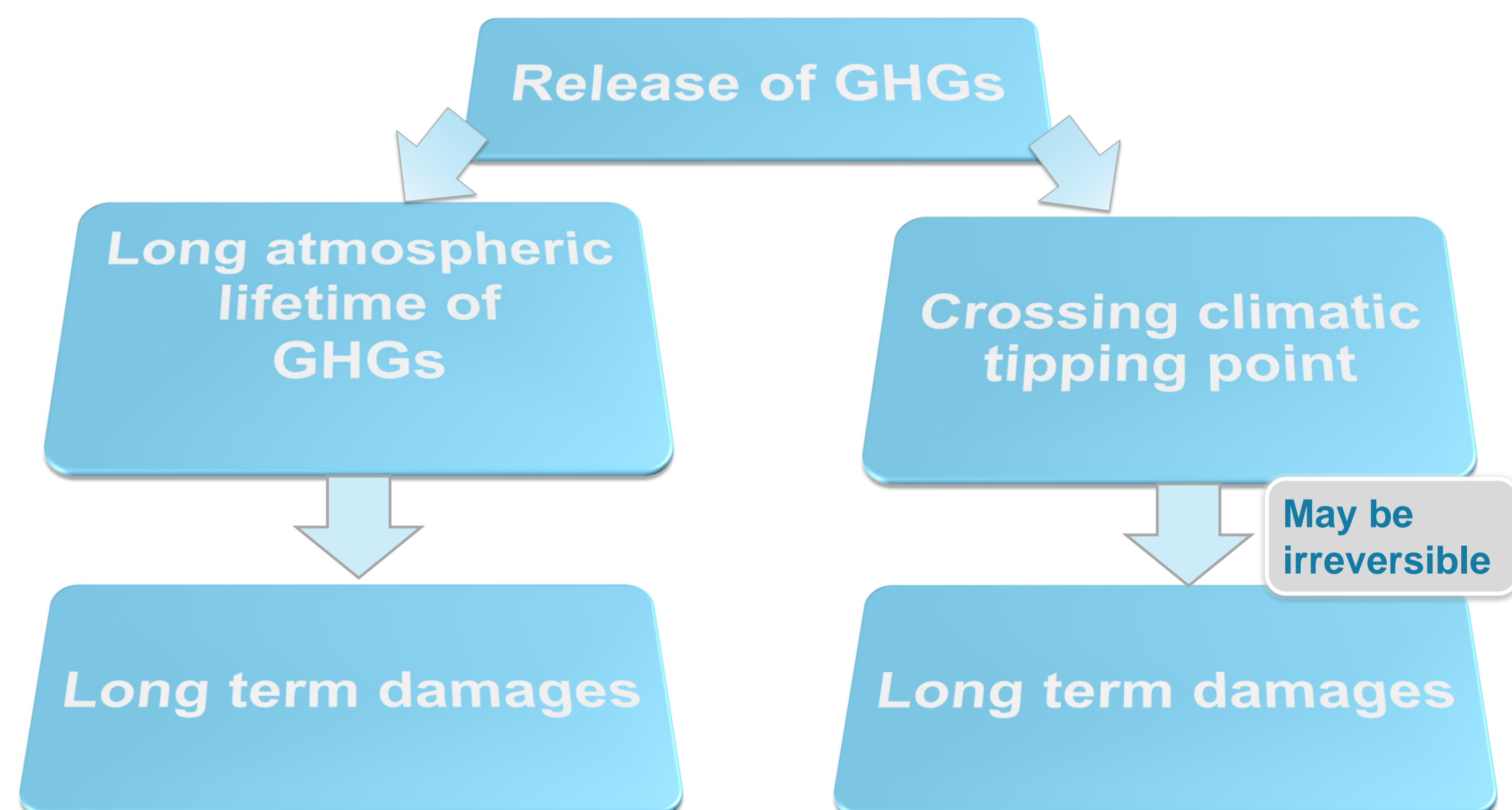
- For urgency of not crossing tipping points temporary carbon storage may be of relevance
- This can be expressed through the CTP impact category
- Alternatives to the GWP have been suggested, but do not cover both long term and urgency aspects of climate change

- Relative impact of GHGs varies with time horizon
 - Not included in GWP – will be included in CTP



Impact of selected GHGs relative to CO₂ depending on time horizon (data for GWP for 20, 100 and 500 years from IPCC (2007))

- Addressing both long term and urgency issues are essential:
 - They represent different aspects of the climate change challenge
 - Both lead to long term damage, but in different ways



EXPECTED RESULTS

- Enabling:
 - Assessment of GHGs impacts on crossing climatic tipping points
 - Without 'hiding' long term climatic impacts of long-lived GHGs
 - Assessment of climate change mitigation value of temporary carbon storage

References:

IPCC (2007) *Climate Change 2007 - The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*; Cambridge University Press: Cambridge, U.K. and NY, USA, 2007.