

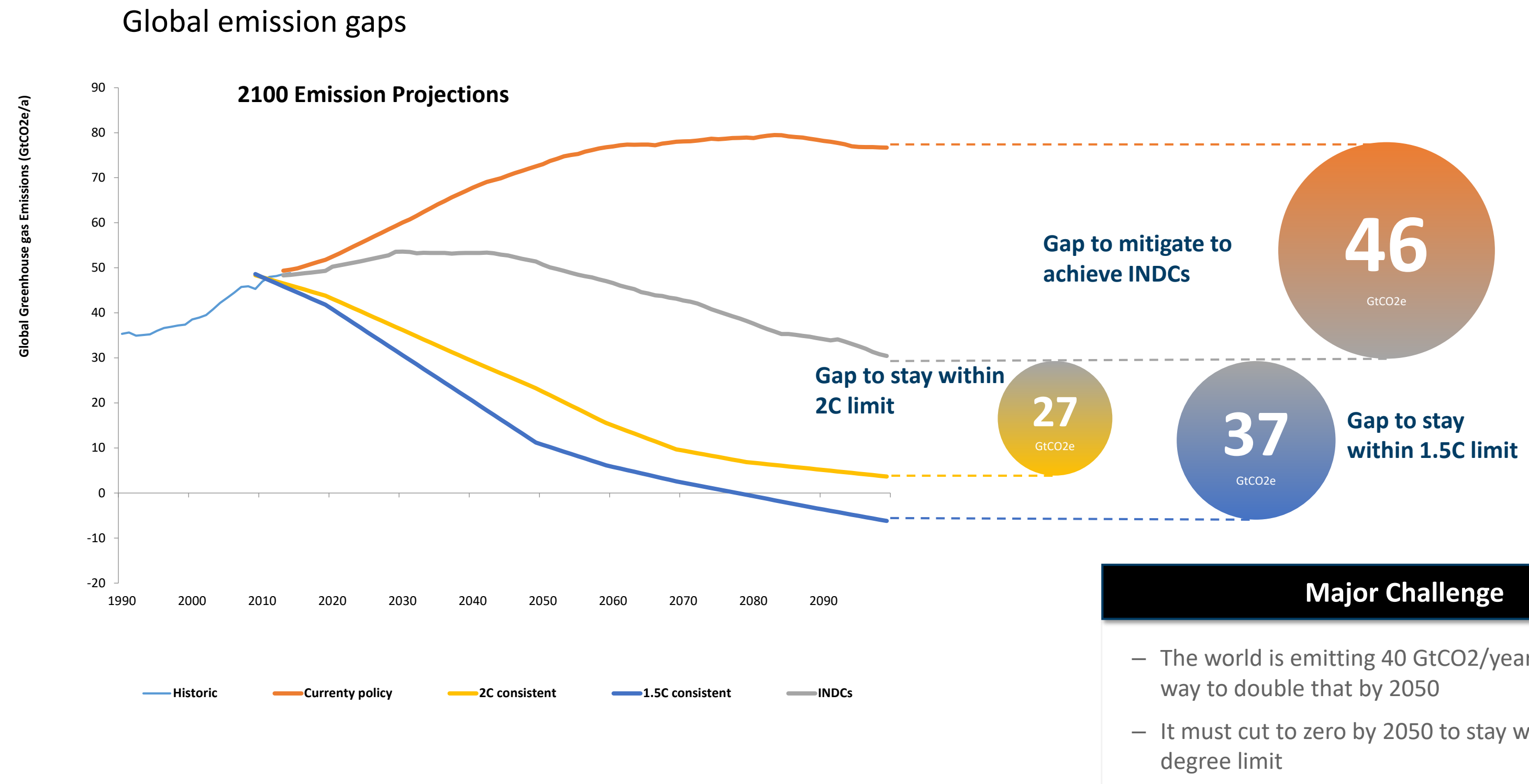
Information, Transition Risk, and Decarbonization



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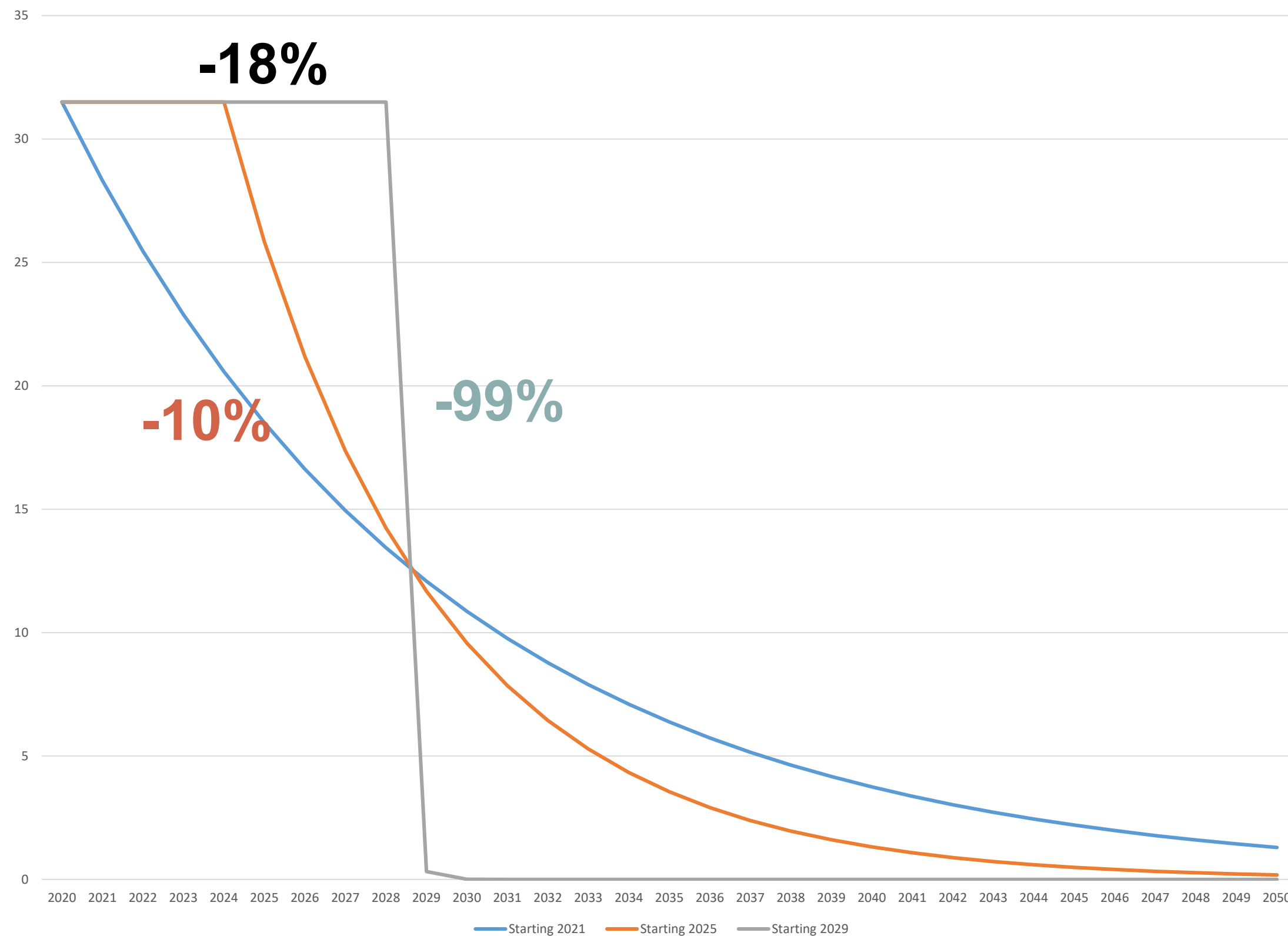
NASEM Webinar, Mar 14, 2022

The Global Net Neutrality Target



Source: Climate Action Tracker Database, Global emissions time series, updated November 2017. Time series data for INDCs, 2C consistent, 1.5C consistent time series are computed as medians of highest and lowest potential global emission level results. Syukuro Manabe, 2021

Net-Zero Trajectories: Tragedy of the Horizon



– The more we wait, the more we consume the 300GtCO₂ budget, and the less time we have to adjust the portfolio.

– In 2021, a 10% per annum reduction based on the initial CO₂ level achieves NZ.

– In 5 years from now the annual rate of reduction required almost doubles.

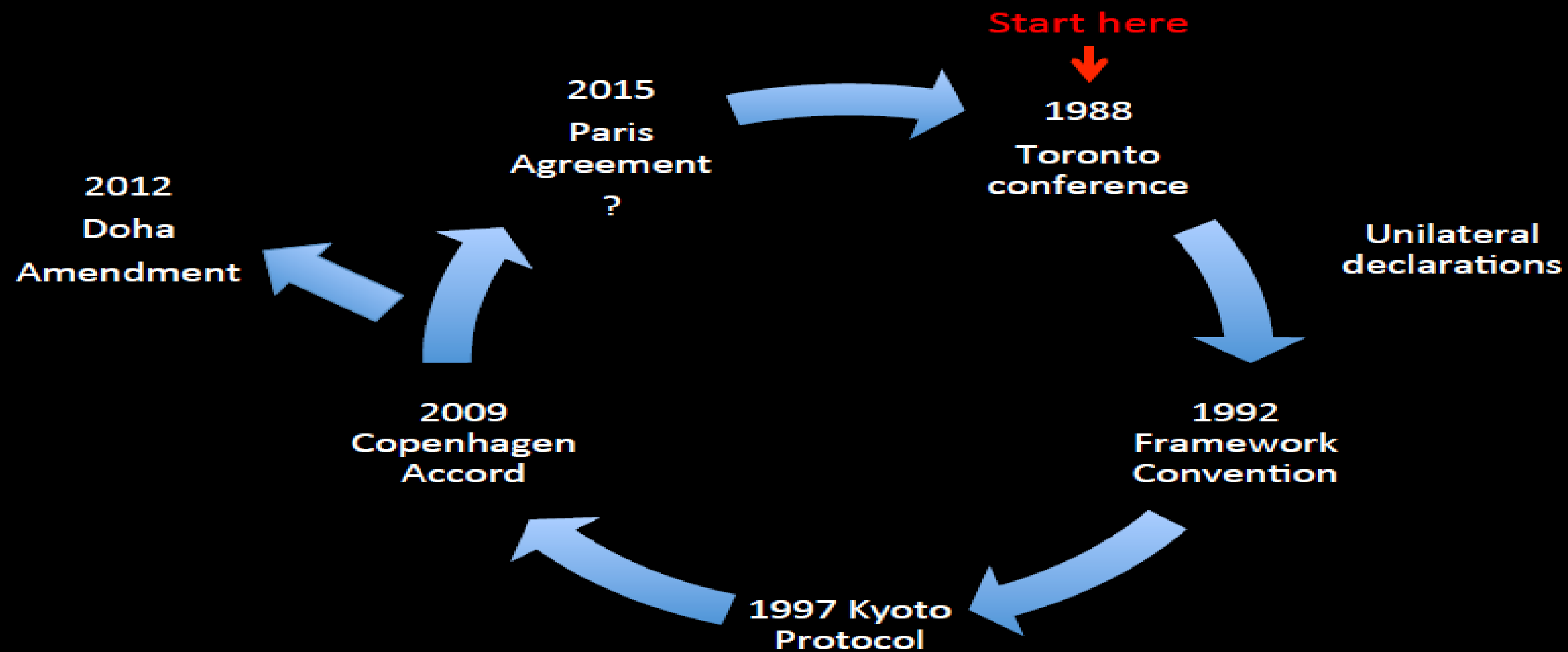
– By 2029, it becomes impossible

– Source: Bolton, Kacperczyk, Samama, FAJ 2022

Government Failure to act on Climate Change

- Governments have been slow to act...

Timeline of Climate Negotiations

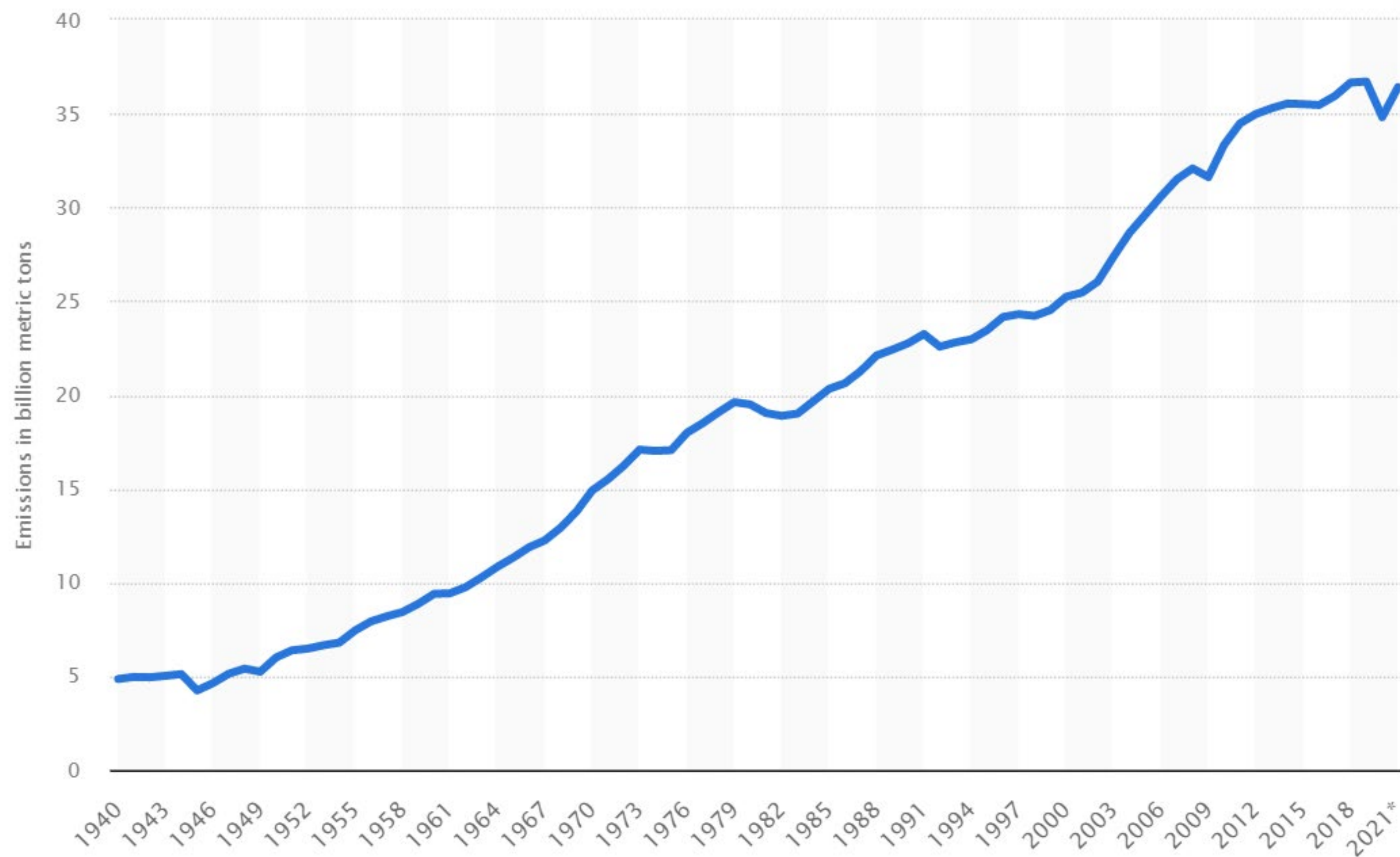


Source: Scott Barrett, <https://www.college-de-france.fr/site/en-thomas-sterner/symposium-2015-10-29-14h15.htm>

Government Failure to act on Climate Change and the Rise of ESG

- and have failed to curb GHG emissions

Annual CO2 emissions worldwide from 1940 to 2021



Source: <https://www.statista.com/statistics/276629/global-co2-emissions/>

Climate Finance is a Risk-Management Problem

- The failure of government in addressing the climate crisis and other environmental problems caused by economic growth (air and sea pollution, biodiversity loss) **largely explains the rise in ESG**
- Taking account of climate change risk means three things for investors:
 1. Investors will seek to **hedge** climate change risk by reducing their exposure to this risk
 2. Investors will demand **compensation** for holding this risk
 3. Investors will **engage** with companies to induce them to reduce this risk
- Reducing exposure to carbon transition risk—a form of divestment—can be justified purely based on prudent risk management
- Managing climate risk requires the use of various information signals

Climate Risk Management is an Information Problem

- Managing climate risk requires various information signals:
 - Prices of carbon contracts (market design problem)
 - Current quantities of emissions: carbon budget (disclosure rules)
 - Projected paths of future emissions (firm/country commitments; asset managers)
- Problems for the future:
 - Disclosure rules for both levels and future emission paths (financial regulators)
 - Addressing indirect (scope 3) emissions (financial regulators)
 - Dealing with private sector (financial regulators/private sector)
 - Natural sinks; carbon offsets (private sector/government)
 - Stress-test reporting; monetary and fiscal policy (Central Banks; Treasury)