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# Some insights on investment needs and finance for mitigation actions

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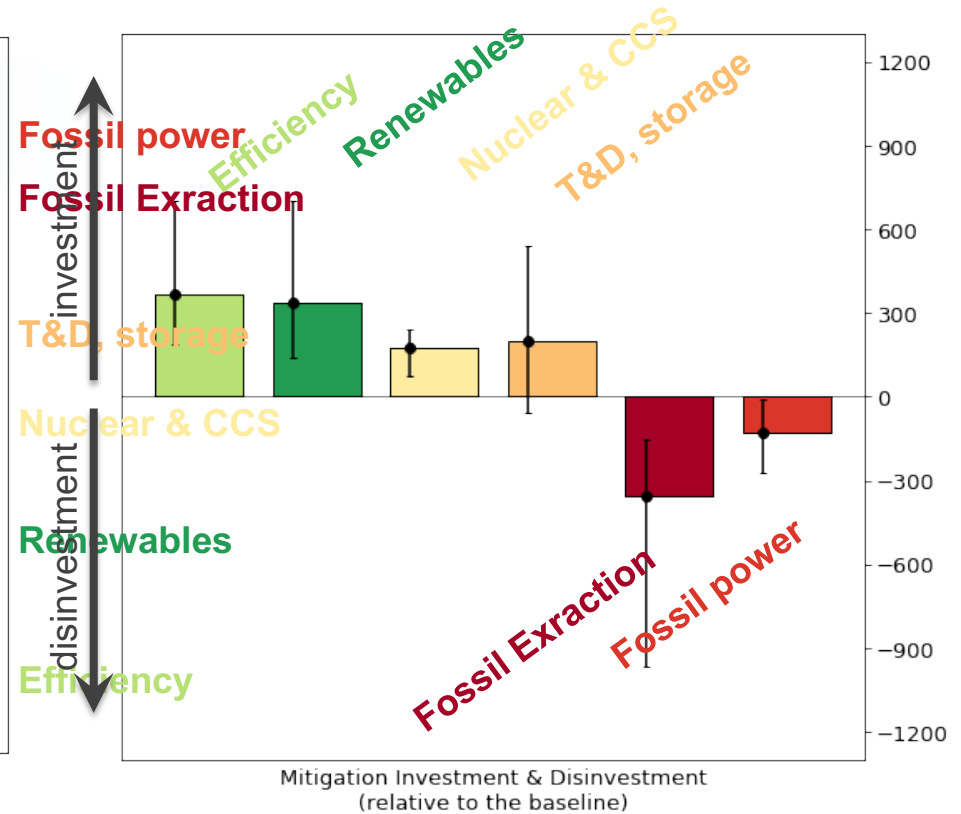
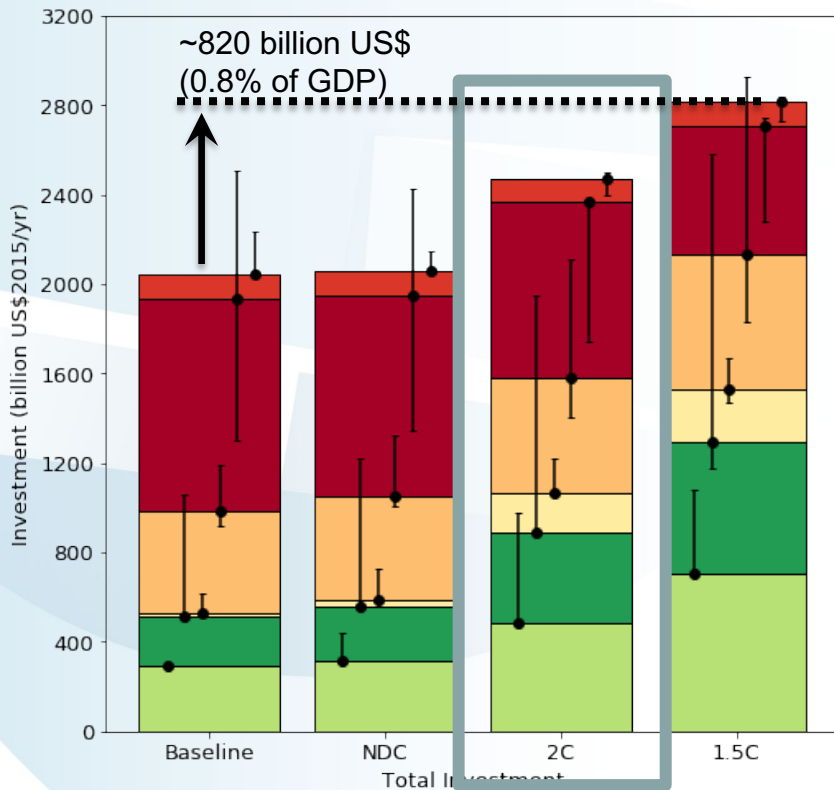
*Snowmass, 2019*



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# Global Investment Portfolios for 1.5 and 2C

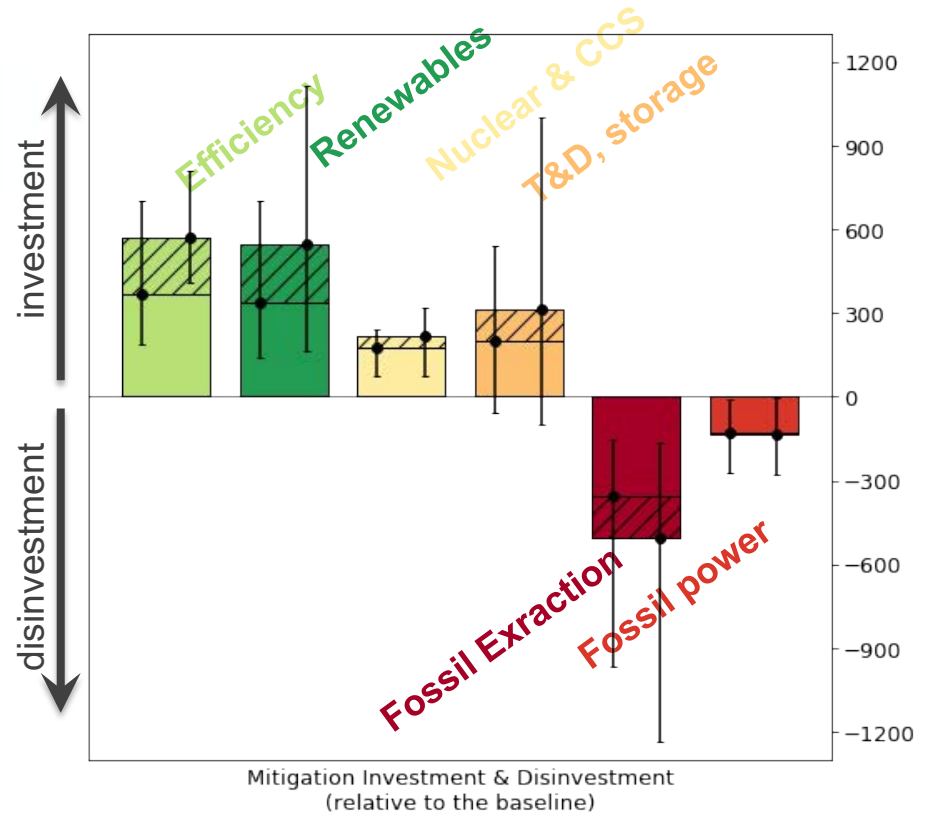
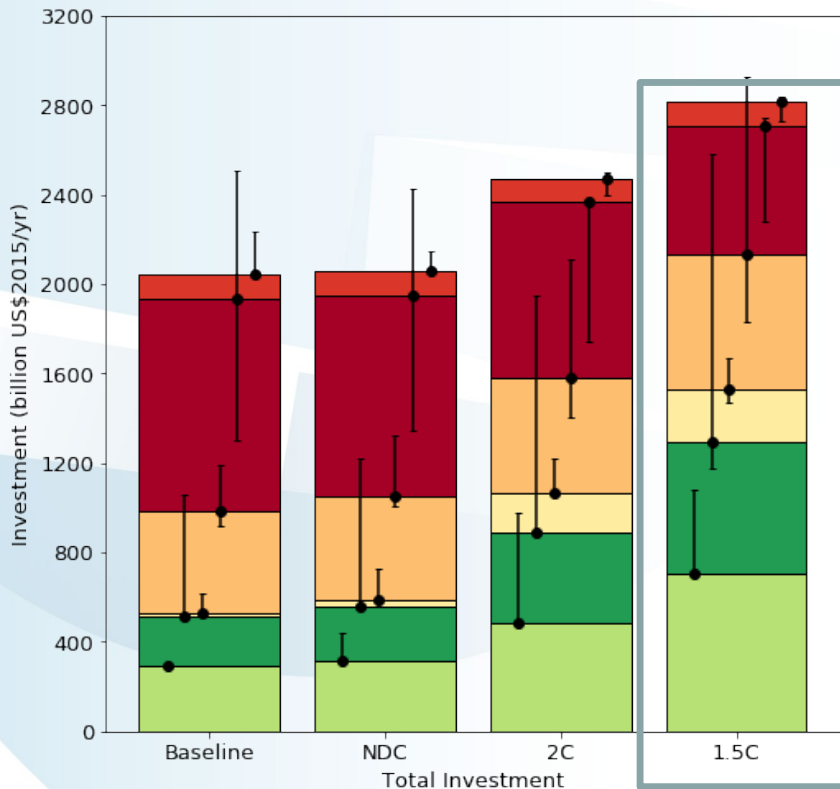
Average annual investments 2010 to 2050



2°C compared to baseline

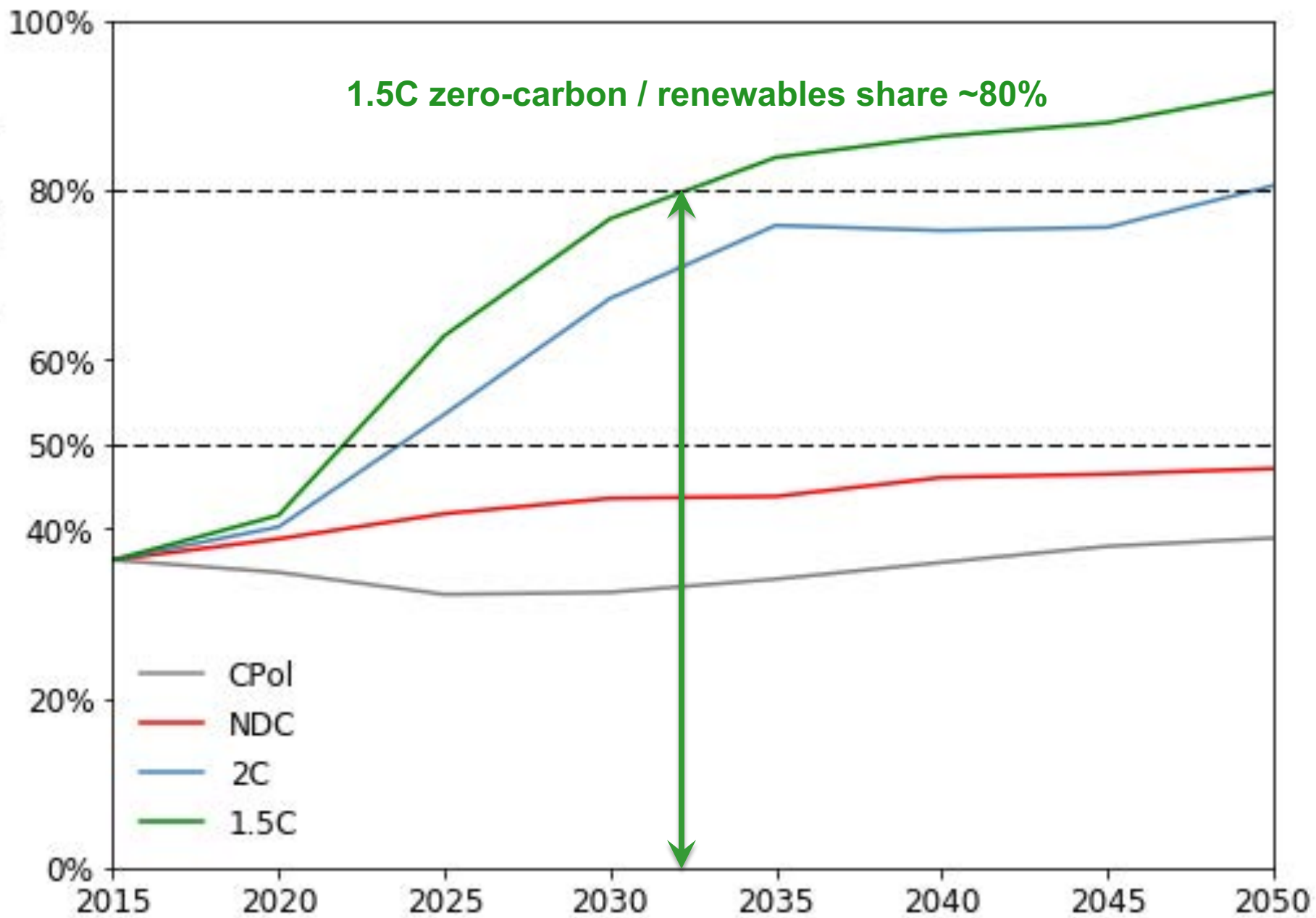
# Global Investment Portfolios for 1.5 and 2C

Average annual investments 2010 to 2050

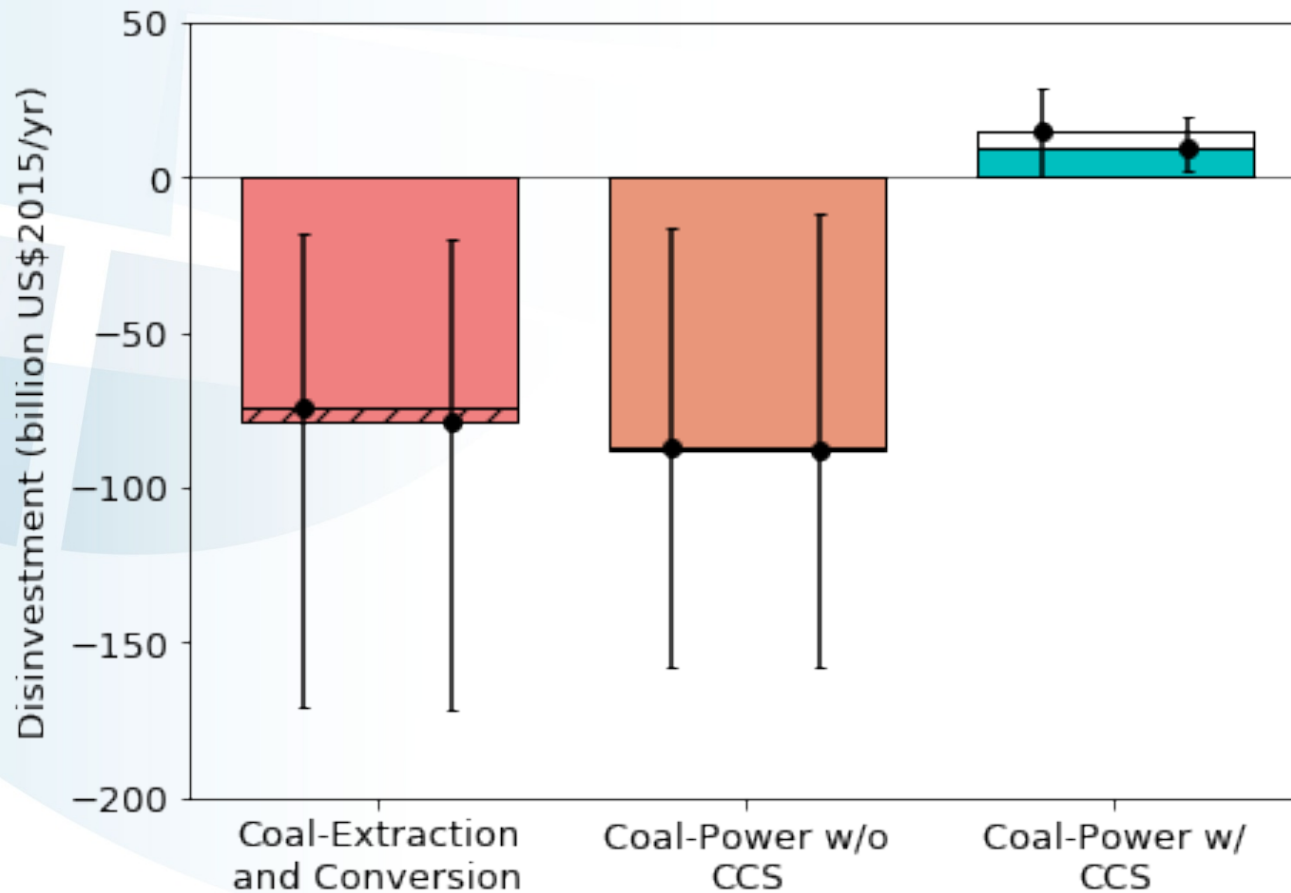


1.5°C compared to baseline

Low-carbon investment share (supply side)

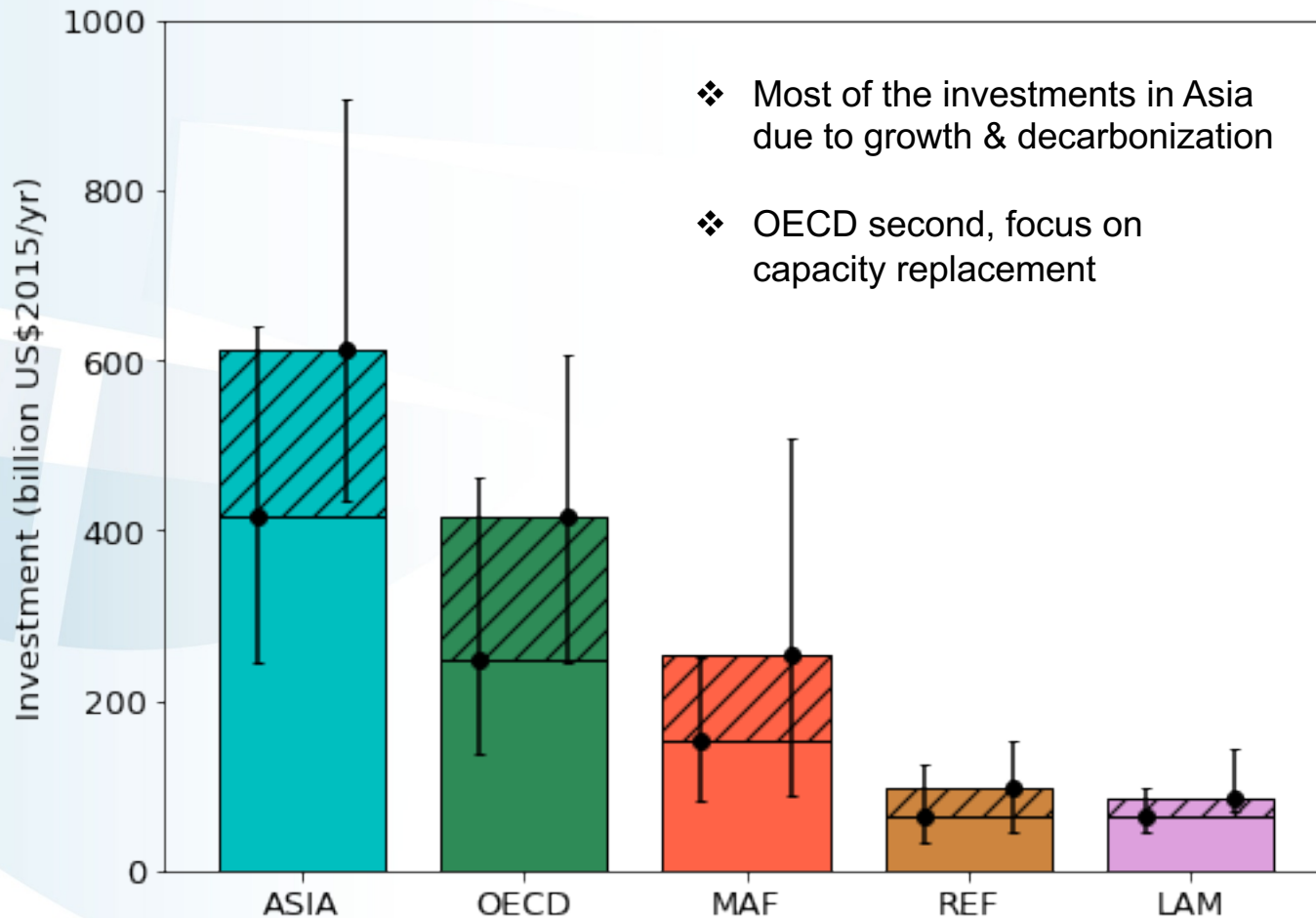


# 1.5C and 2C imply zero investment into coal-based electricity globally (except some small CCS investments)



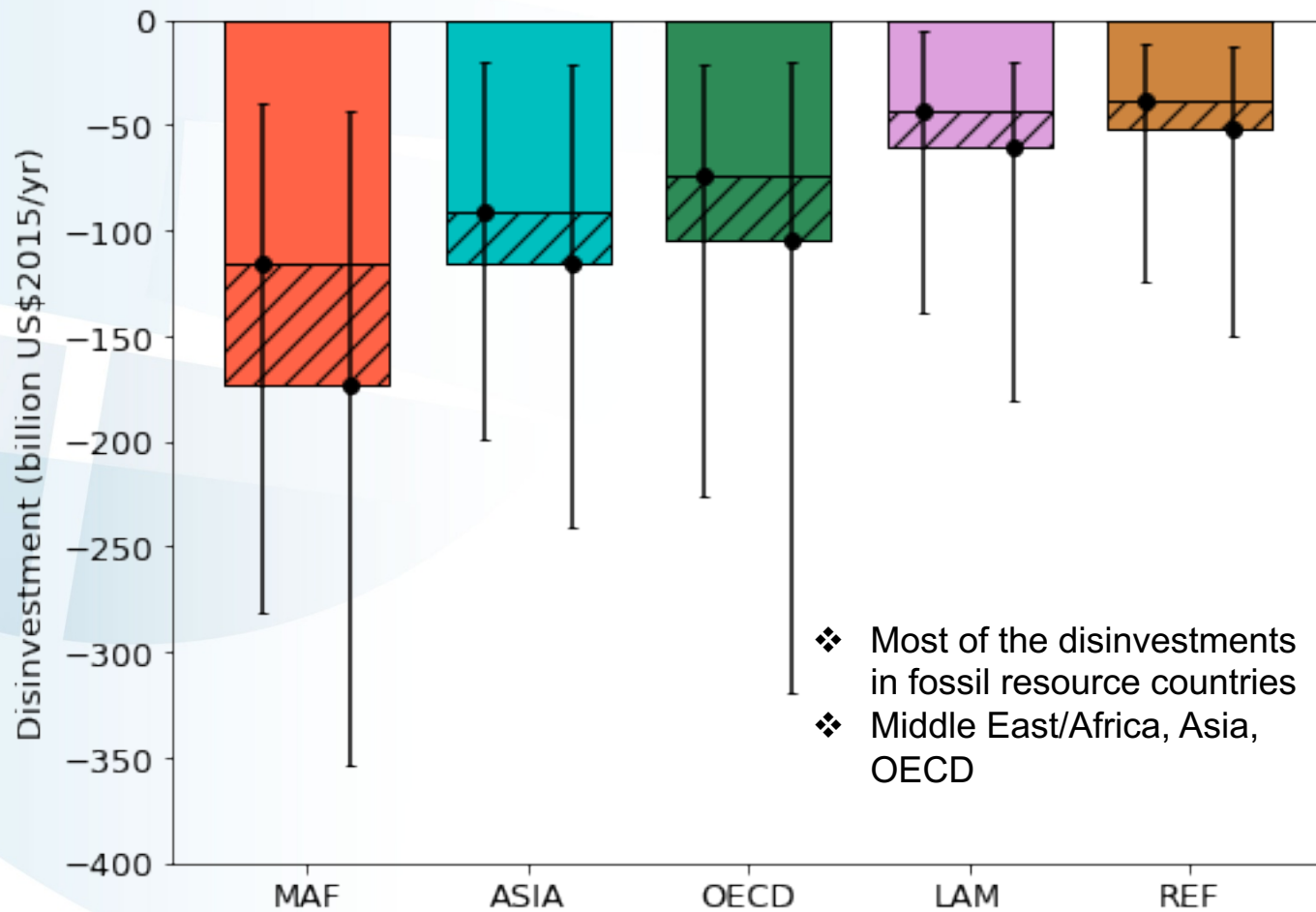
# Regional Investments (1.5 vs 2C)

2015-2050, compared to baseline



# Regional Disinvestments (1.5C vs 2C)

2015-2050, compared to baseline







# Impact on investments for other SDGs

*If the energy system remains largely the same*

Energy access



50 (50 to 85)



*If the energy system is transformed*



200 (125 to 320)

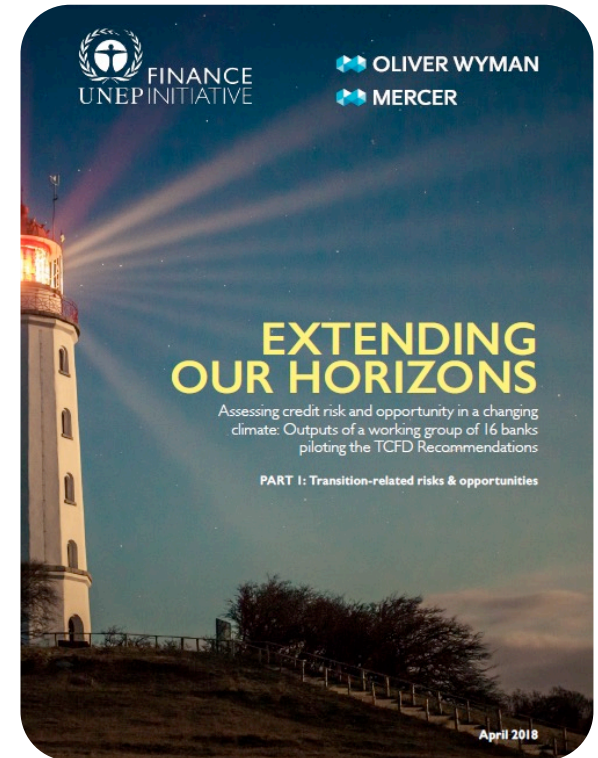
Target 7.1:

Ensure universal access to affordable, reliable and modern energy services

Policy costs to achieve 100% clean fuel adoption throughout the world via subsidies for cookstoves and fuels.

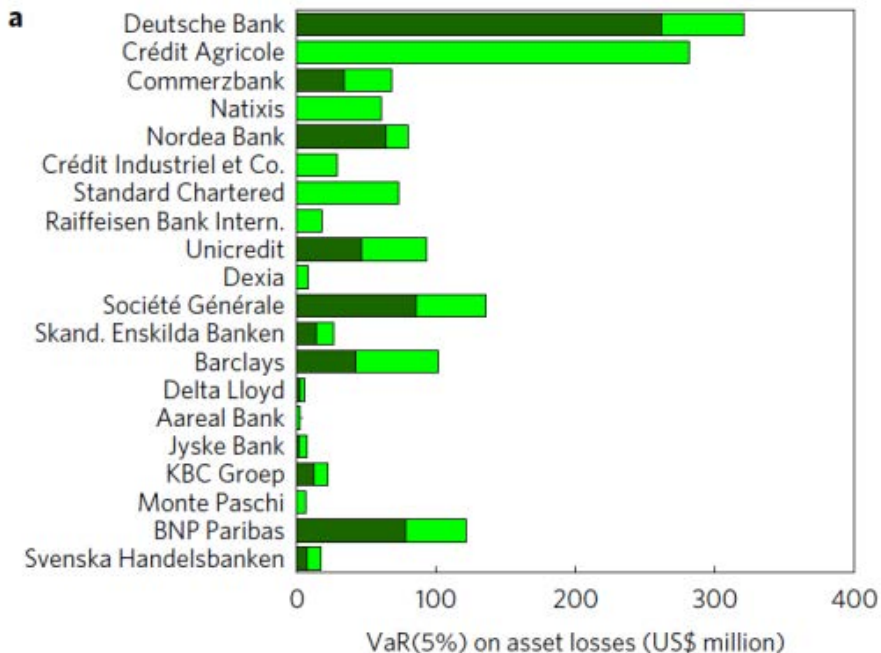
# Mobilizing Investments & Finance

- A range of different instruments available
- Climate-related Financial (Risk) Disclosure
- Initial piloting study by UNEP-FI together with Wyman, Mercer, IIASA & PIK
- Four risk factor pathways (RFP)
  - Direct emissions costs
  - Indirect emission costs
  - Low-carbon capital expenditure
  - Revenue effects

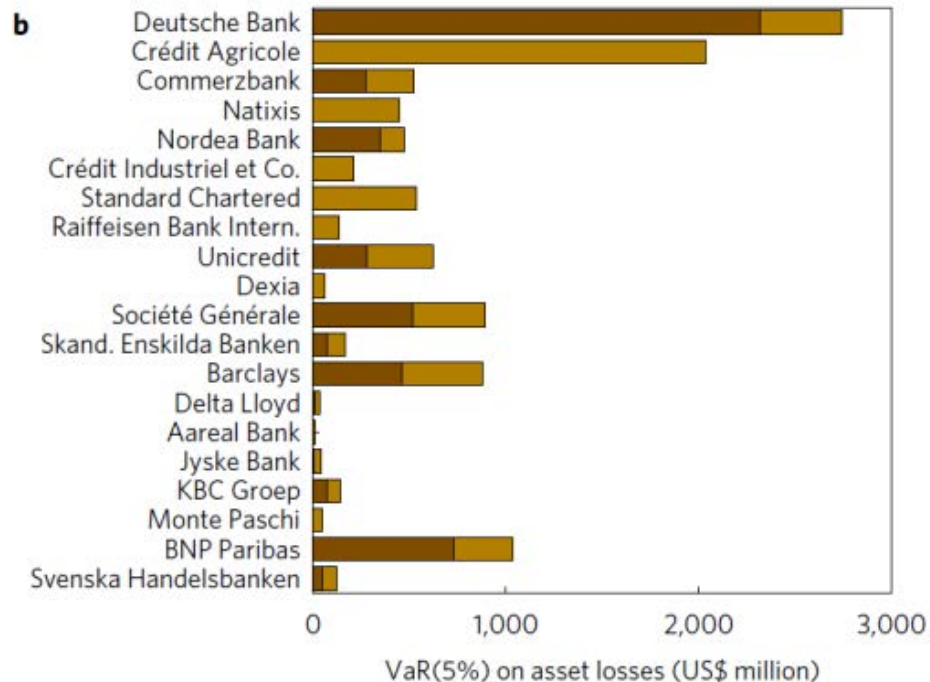


# Translating IAM scenarios into standard financial risk metrics (eg, VaR and climate stress test)

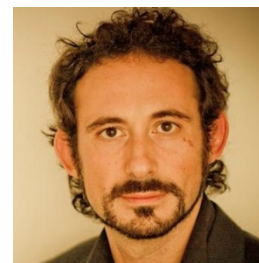
bank invested in green utilities



bank invested in fossil utilities



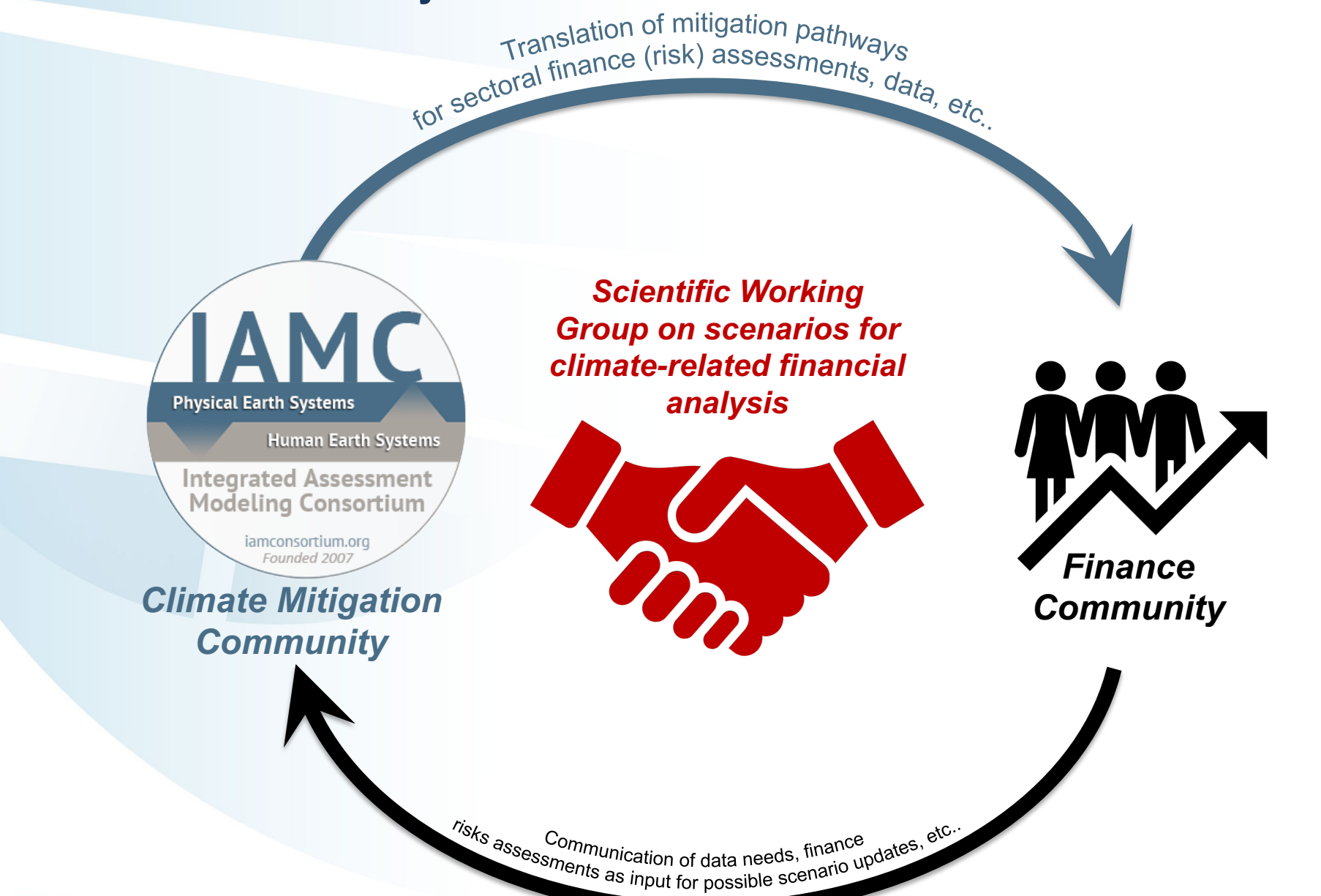
Stefano Battiston & Irene Monasterolo  
(EU using LIMITS scenarios)



# Handshake challenges

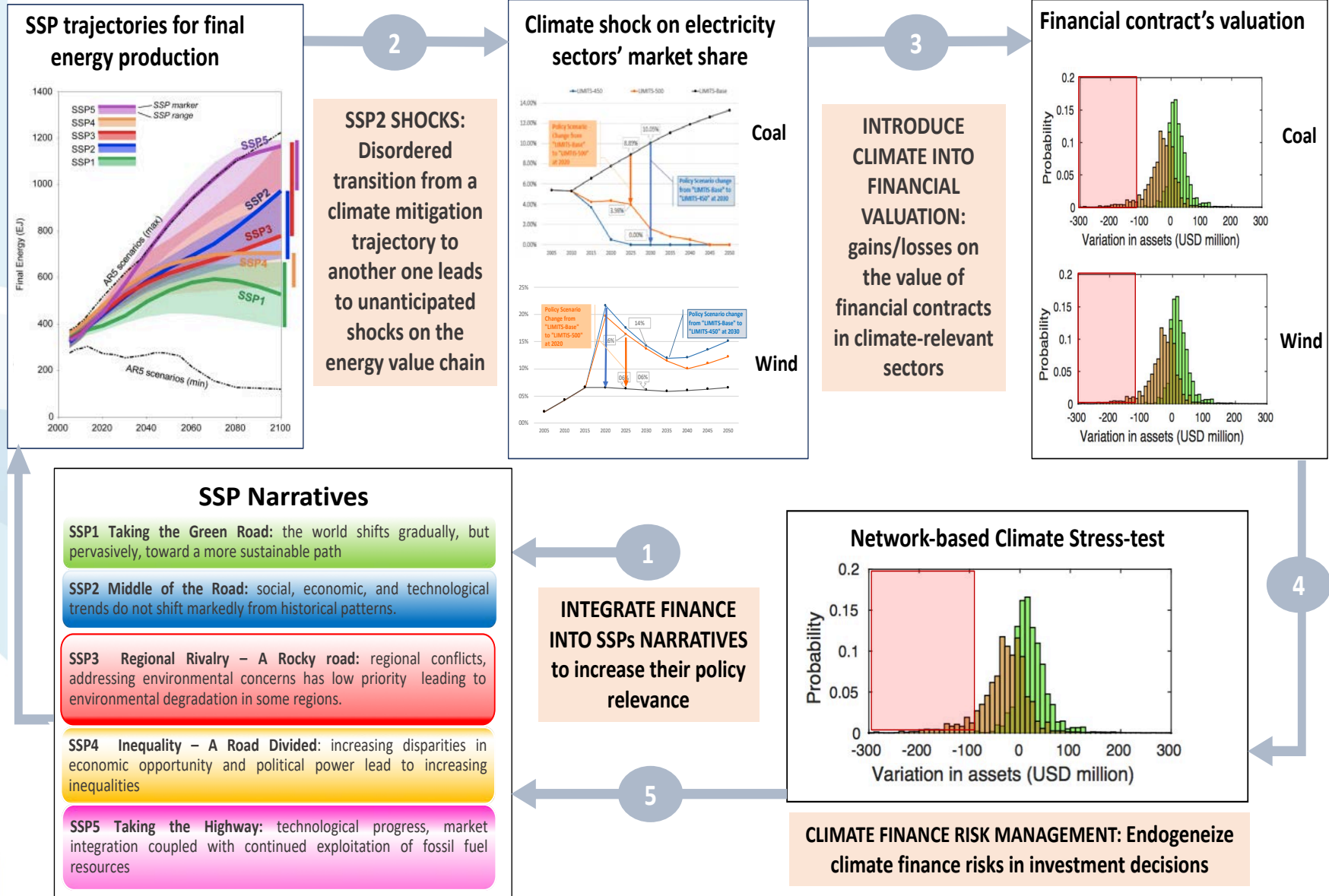
- A formal community process needed to translate mitigation pathways into relevant information for finance risk assessment
- Finance sector is diverse and finance risks are relevant to many actors: banks, Insurance sector, institutional investors, Industry sectors, multi-national cooperates, etc...
- Data needs differ accordingly
- Information needed for the near term (next 6 months to 10 years) vs IAM strength (decades to a century)
- Understanding portfolio and company risk requires high granularity of information often beyond IAM capabilities (market prices, market expectations (eg, sales volumes), etc...

# New Community effort to bridge the gap between the climate mitigation and finance community



# A new concept to connect IAM and finance assessments

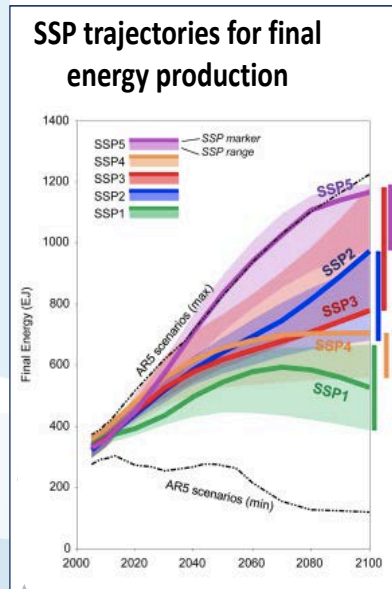
(Battiston, Monasterolo, Riahi, van Ruijven, submitted)





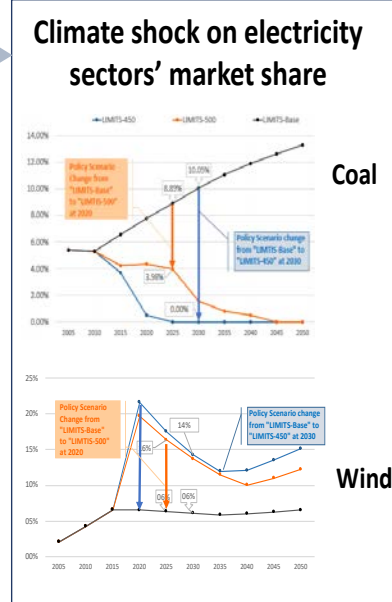
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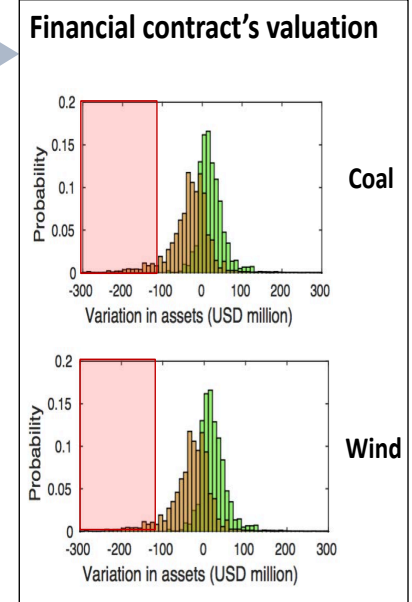
**2**

**SSP2 SHOCKS:**  
Disordered transition from a climate mitigation trajectory to another one leads to unanticipated shocks on the energy value chain



**3**

**INTRODUCE CLIMATE INTO FINANCIAL VALUATION:**  
gains/losses on the value of financial contracts in climate-relevant sectors



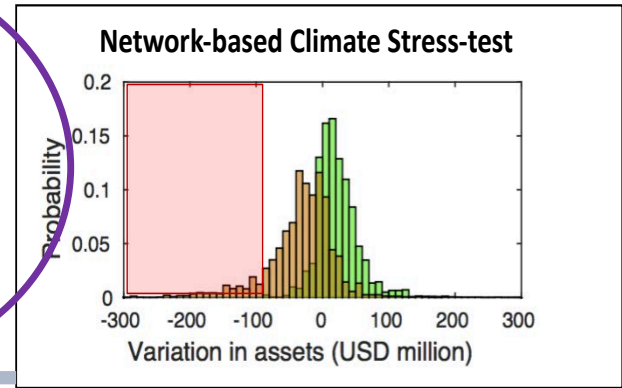
### SSP Narratives

- SSP1 Taking the Green Road:** the world shifts gradually, but pervasively, toward a more sustainable path
- SSP2 Middle of the Road:** social, economic, and technological trends do not shift markedly from historical patterns.
- SSP3 Regional Rivalry – A Rocky road:** regional conflicts, addressing environmental concerns has low priority leading to environmental degradation in some regions.
- SSP4 Inequality – A Road Divided:** increasing disparities in economic opportunity and political power lead to increasing inequalities
- SSP5 Taking the Highway:** technological progress, market integration coupled with continued exploitation of fossil fuel resources

**1**

**INTEGRATE FINANCE INTO SSPs NARRATIVES to increase their policy relevance**

**5**

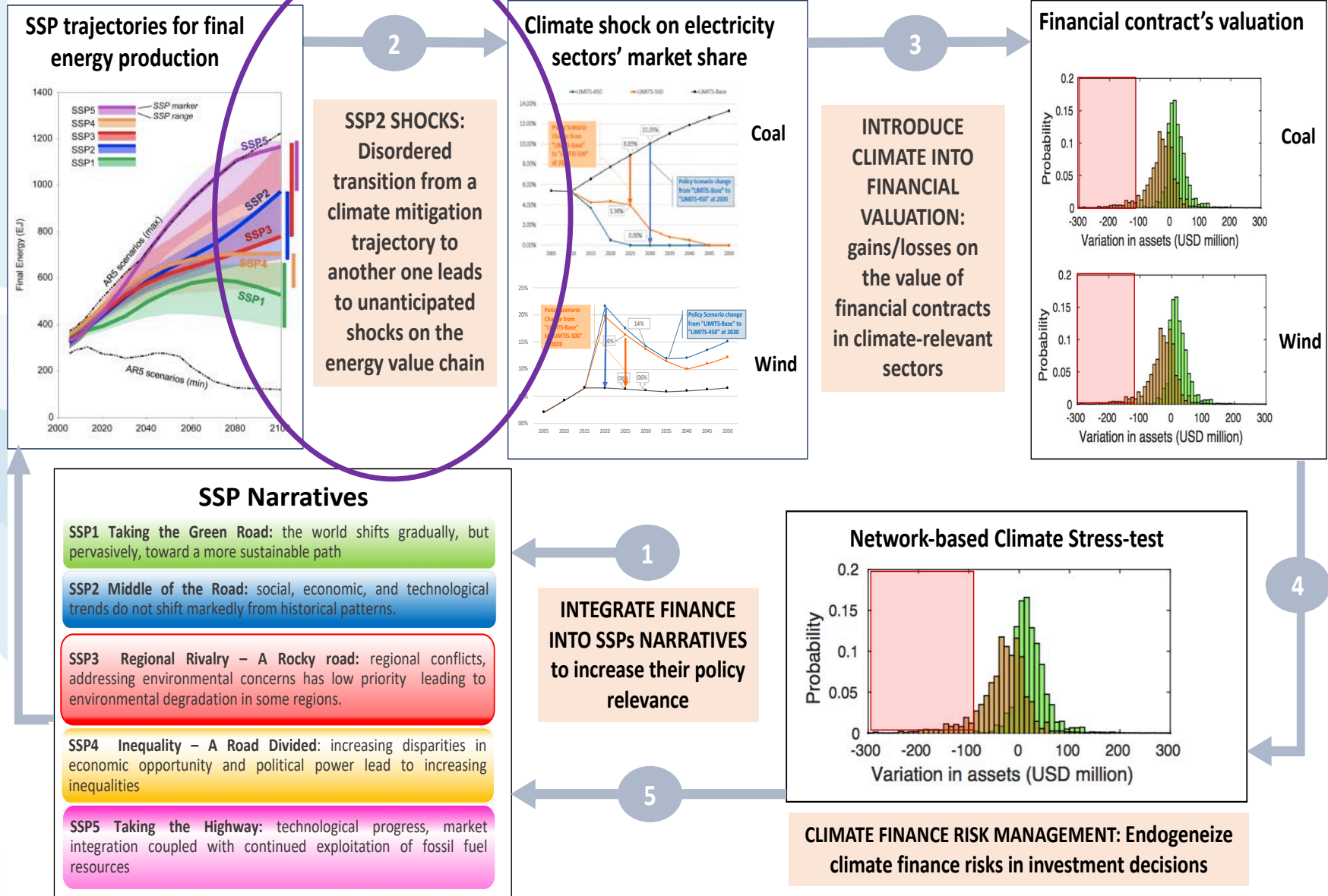


**4**

**CLIMATE FINANCE RISK MANAGEMENT: Endogenize climate finance risks in investment decisions**

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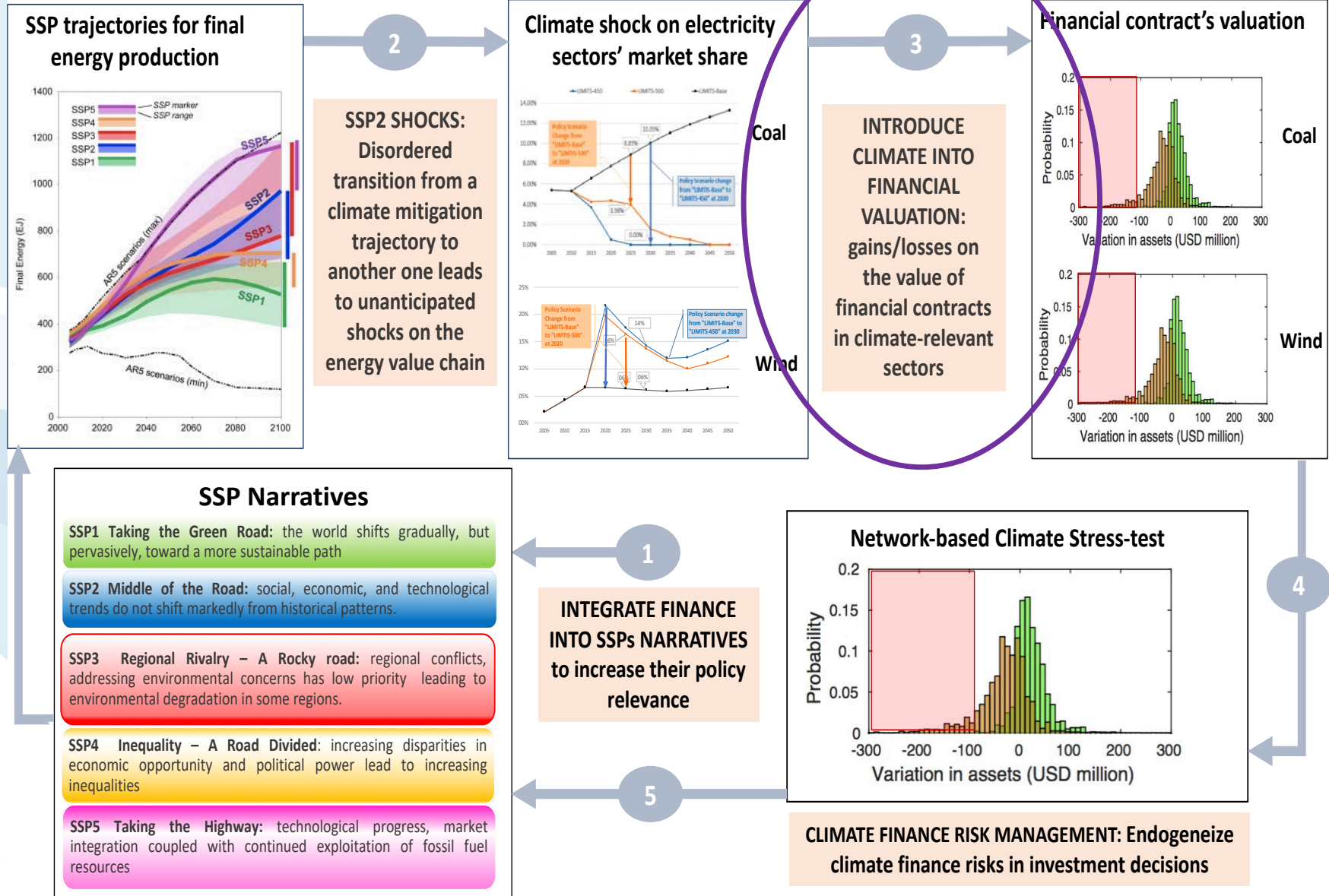
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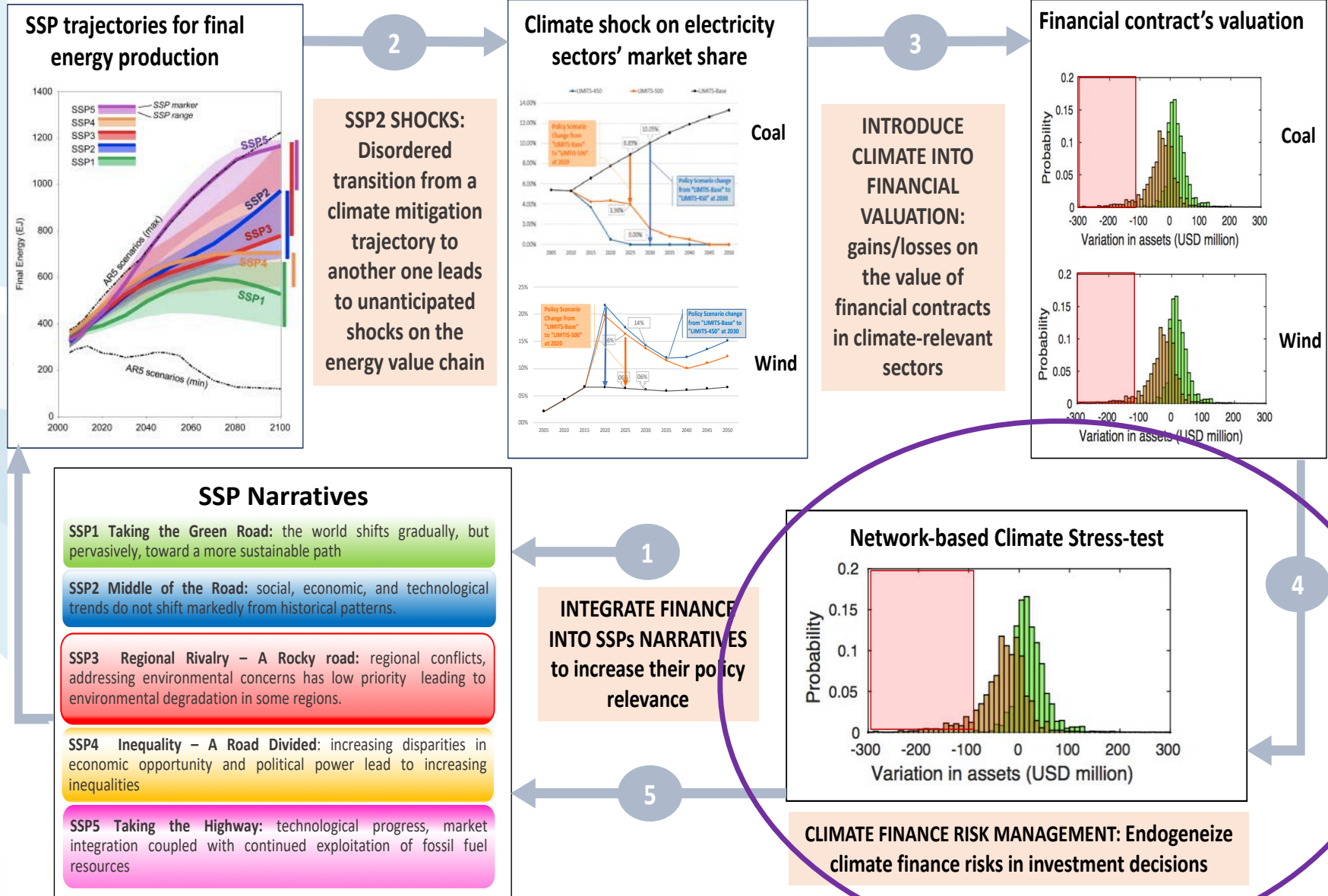
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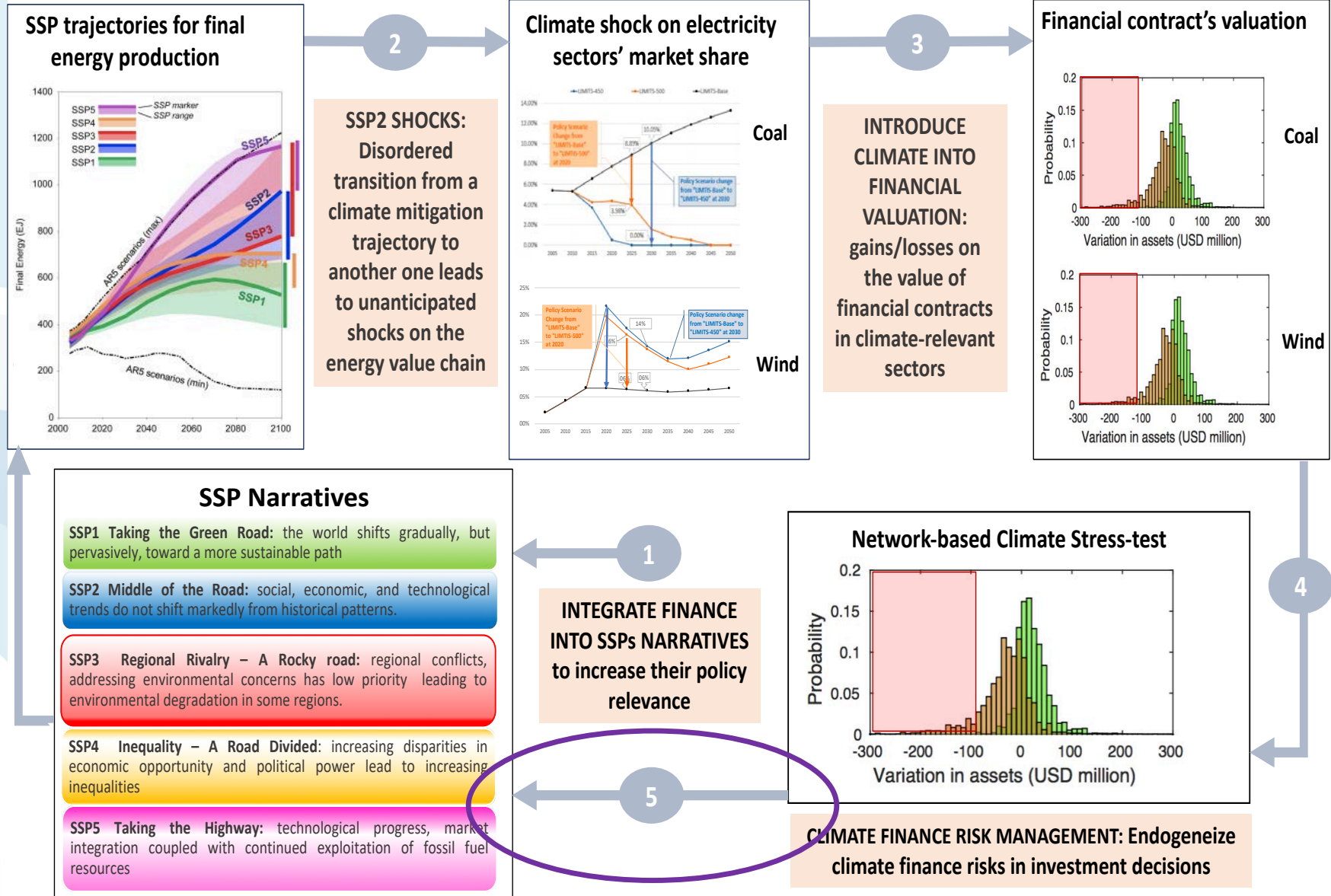
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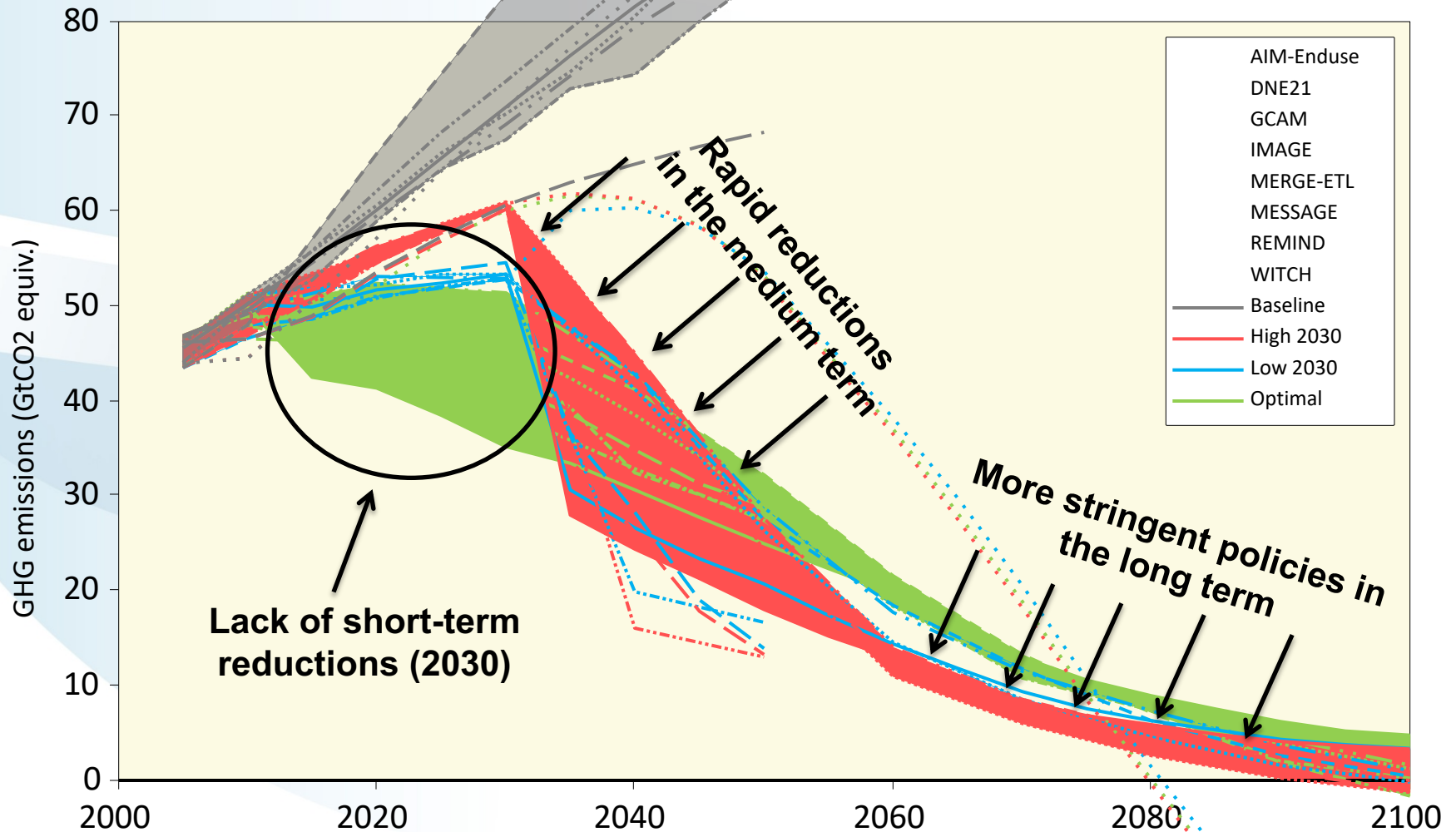
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Thank you  
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# World GHG emissions



Lack of short-term reductions (2030)

Rapid reductions in the medium term

More stringent policies in the long term