



International Institute for
Applied Systems Analysis
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science for global insight



Better integration of finance (risks and opportunities) into climate mitigation scenarios needed

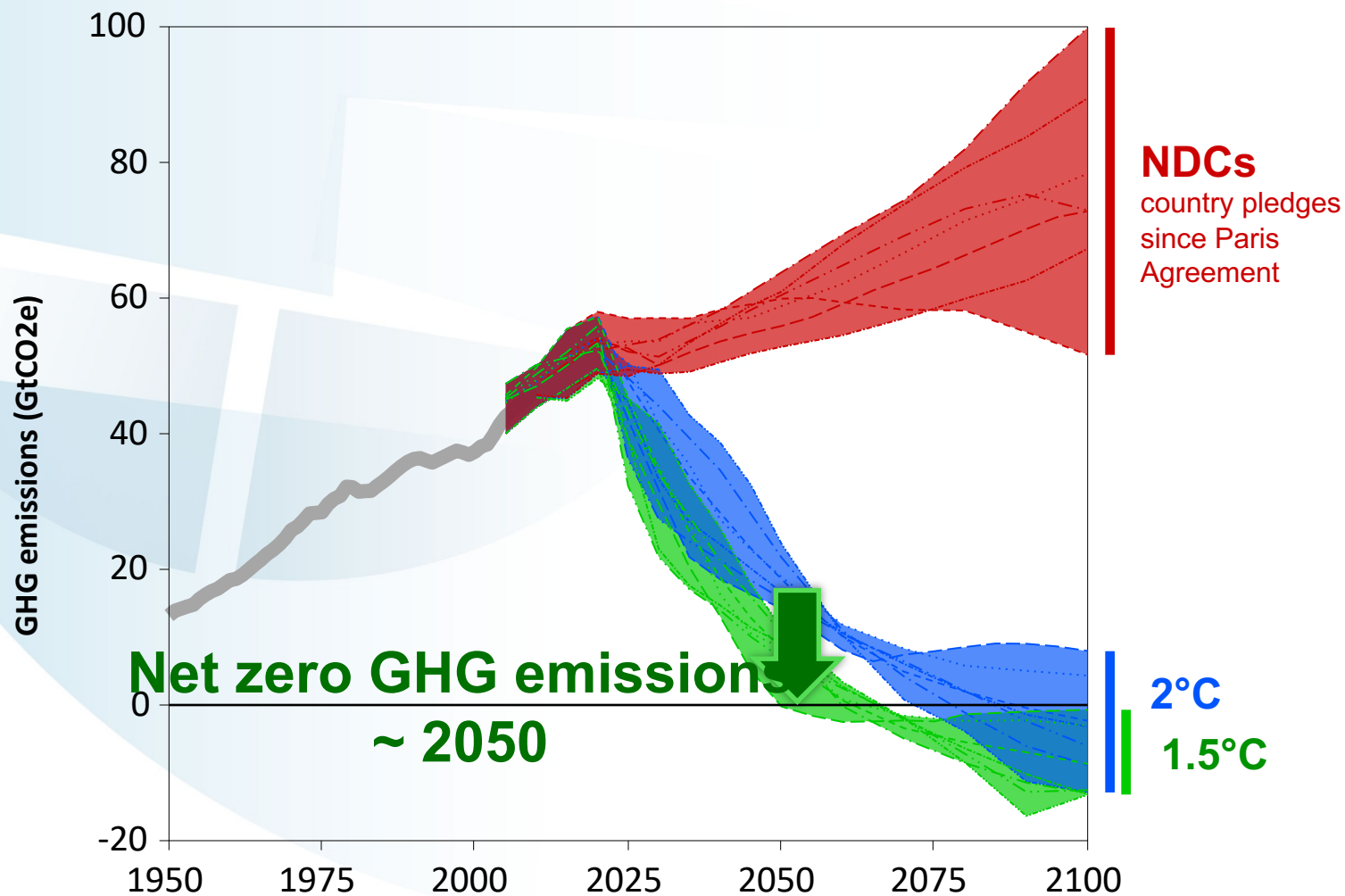
Keywan Riahi,
International Institute for Applied Systems Analysis
(IIASA)

Zurich, 2020



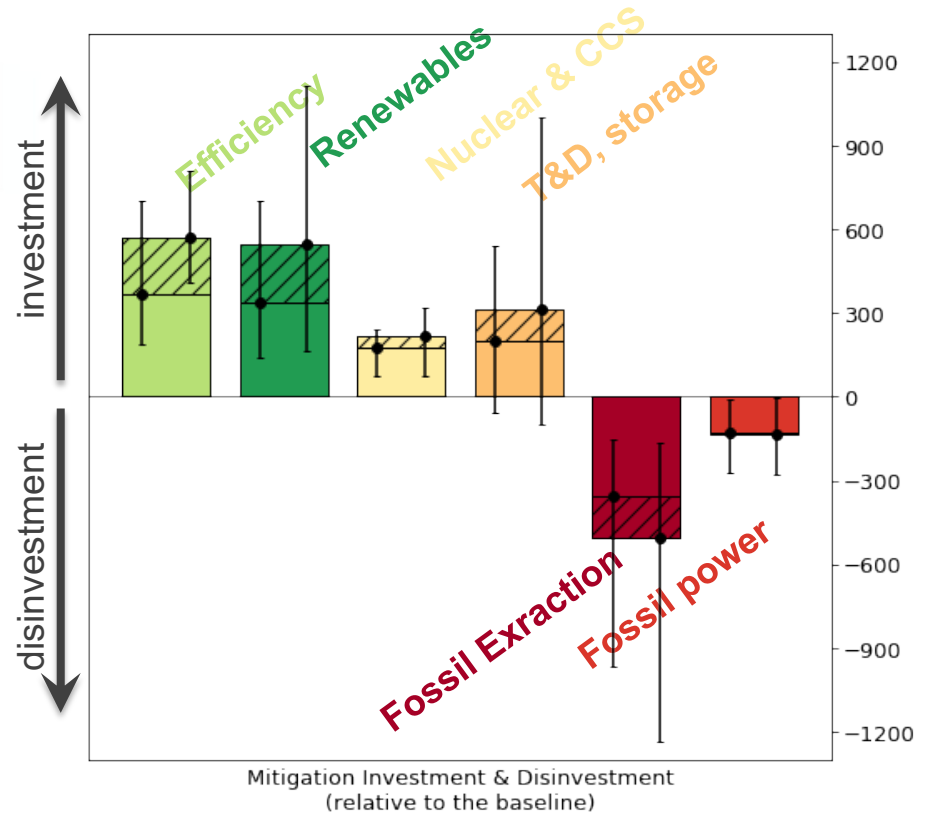
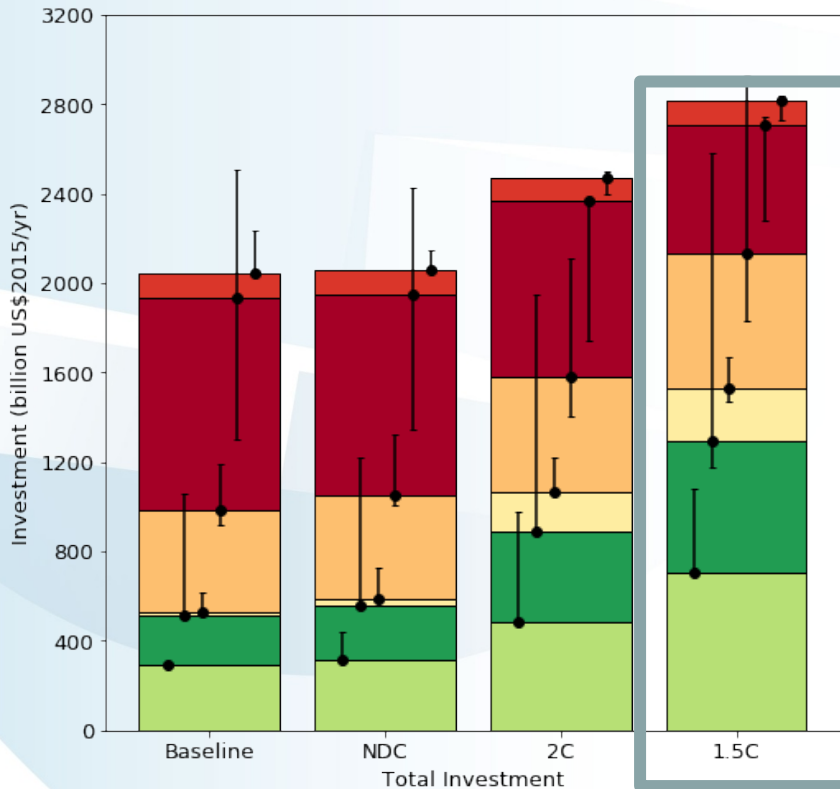
IIASA, International Institute for Applied Systems Analysis

1.5°C requires further acceleration and an even deeper transformation



Global Investment Portfolios for 1.5 and 2C

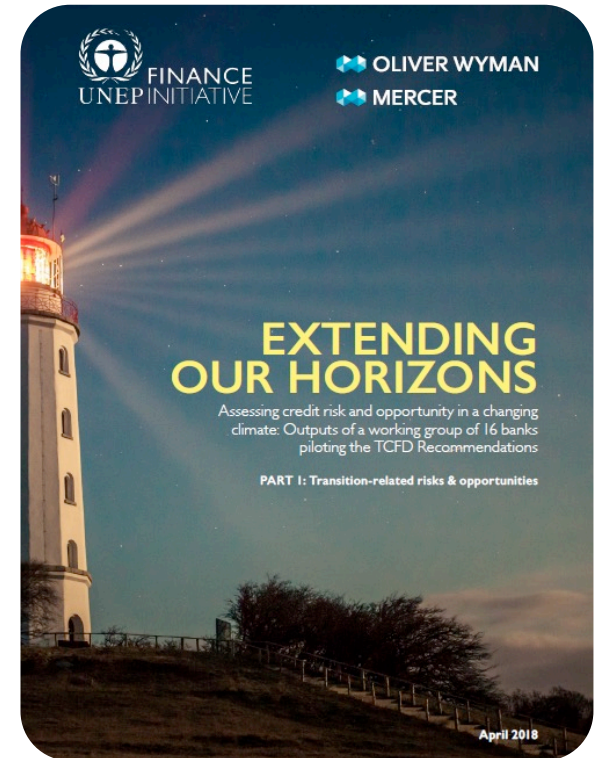
Average annual investments 2010 to 2050



1.5°C compared to baseline

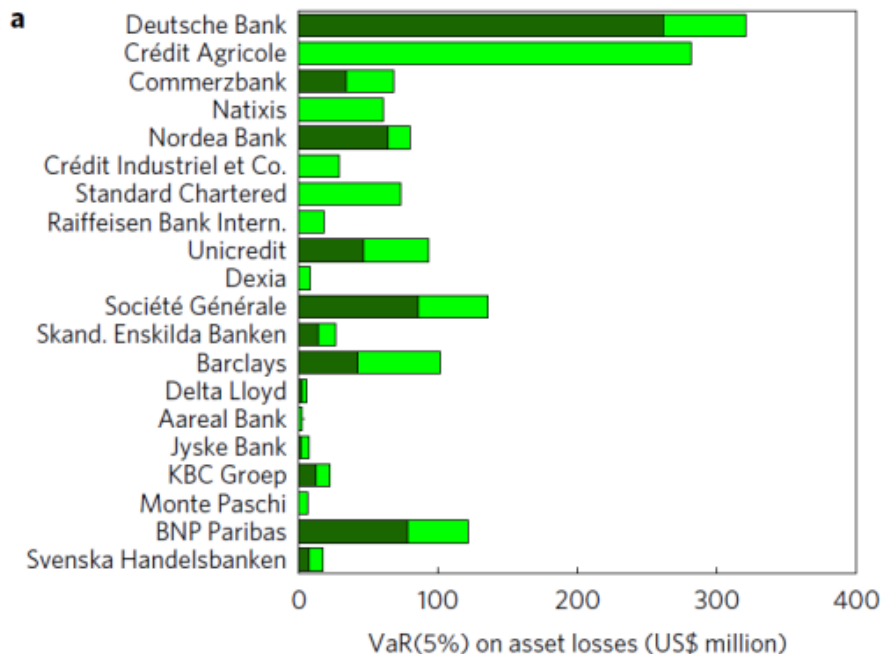
Mobilizing Investments & Finance

- 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

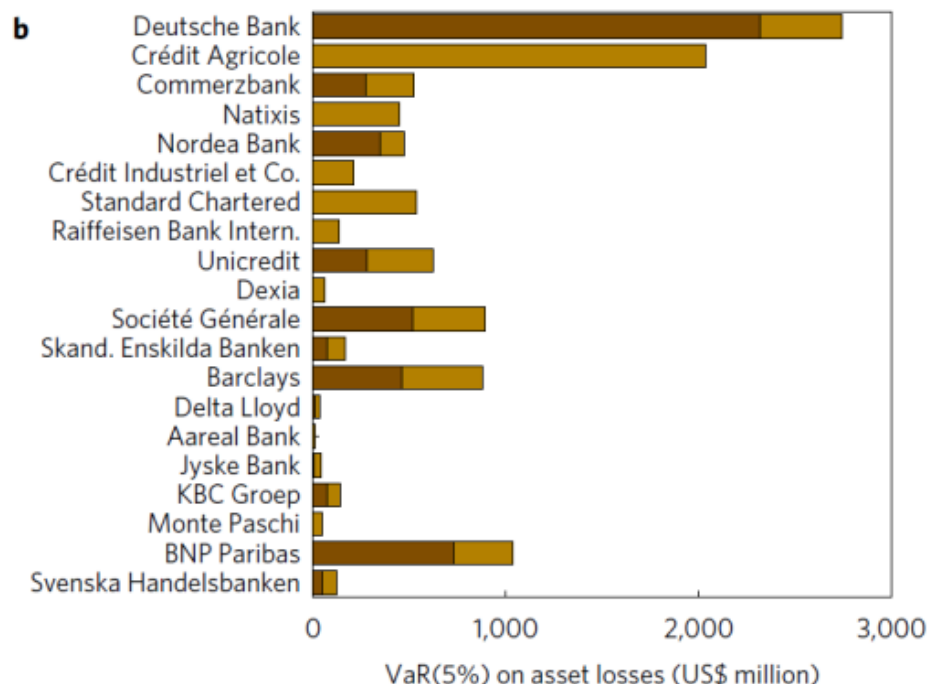


Translating IAM scenarios into standard financial risk metrics (eg, VaR and climate stress test)

bank invested in green utilities

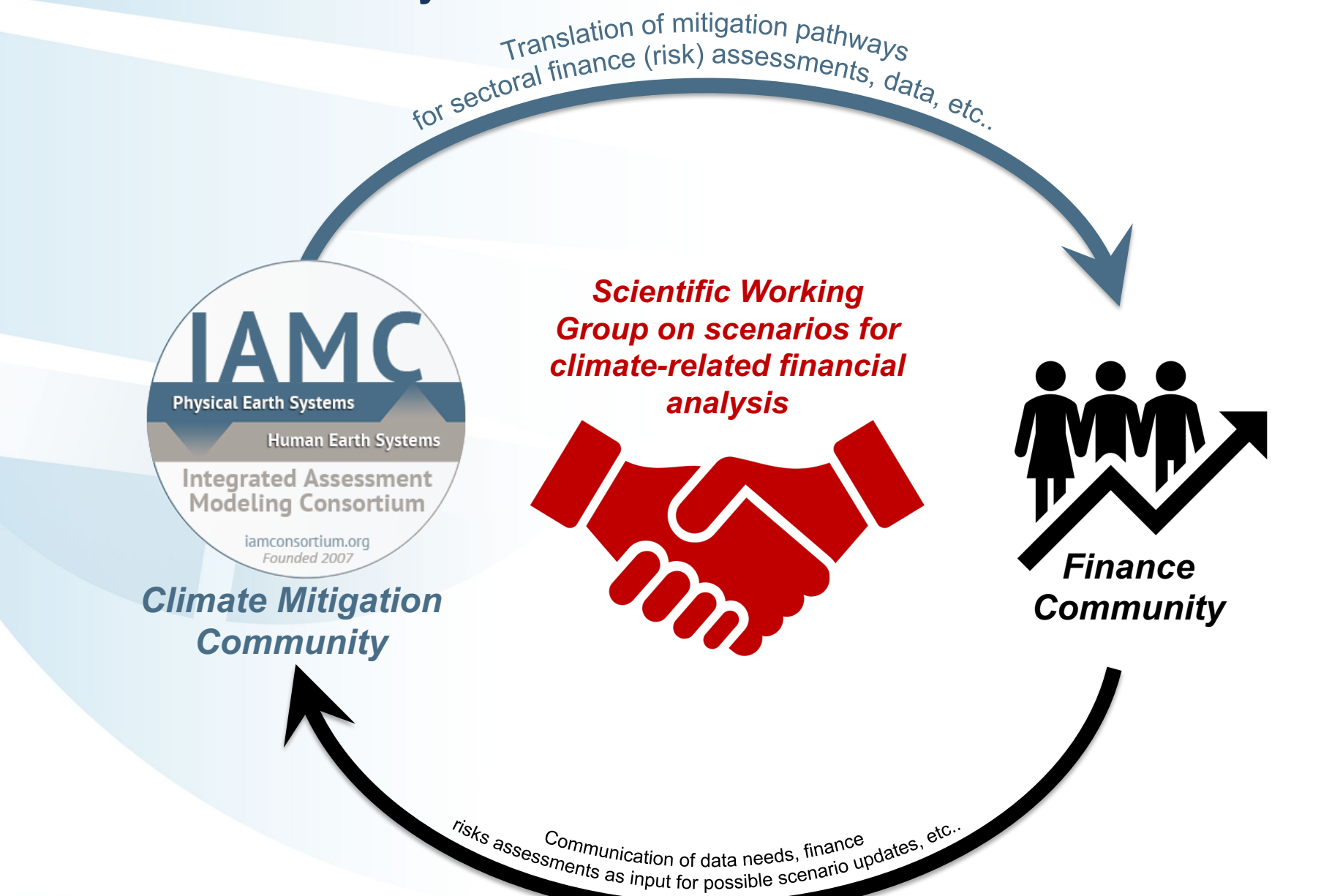


bank invested in fossil utilities



Stefano Battiston & Irene Monasterolo
(based on LIMITS scenarios)

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

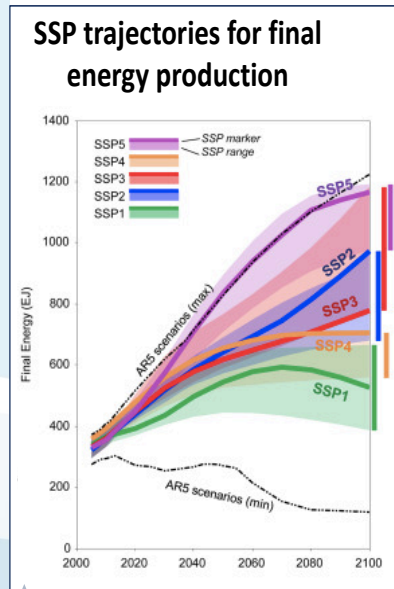


Handshake challenges

- 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...

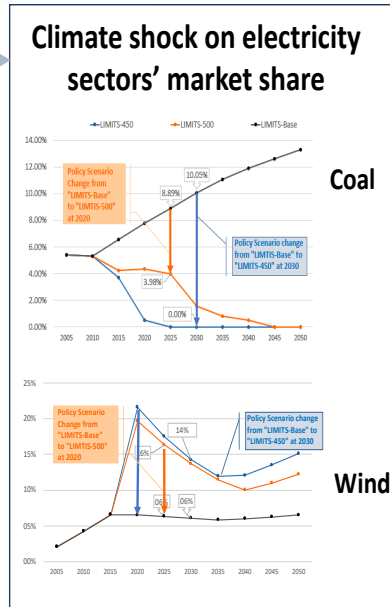
A new concept to connect IAM and finance assessments

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



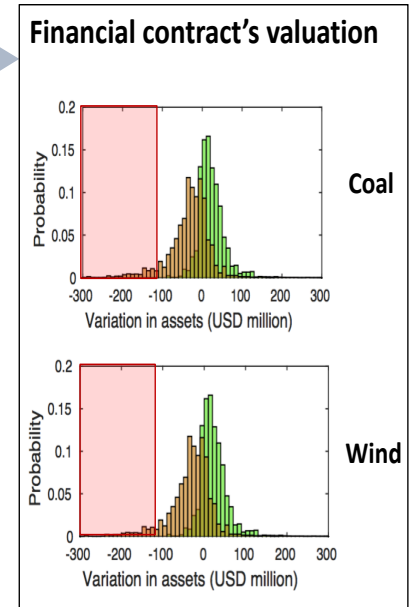
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SSP2 SHOCKS:
Disordered transition from a climate mitigation trajectory to another one leads to unanticipated shocks on the energy value chain



3

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

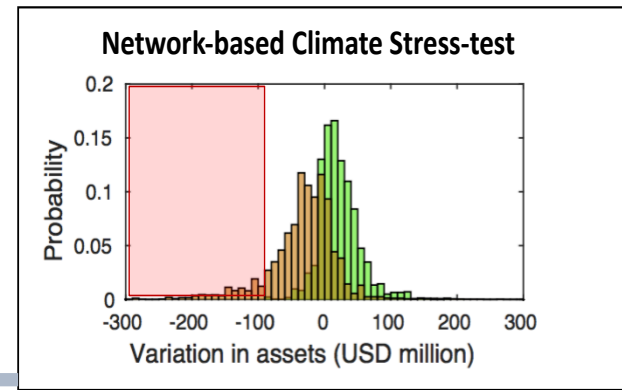


SSP Narratives

- 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

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INTEGRATE FINANCE INTO SSPs NARRATIVES
to increase their policy relevance

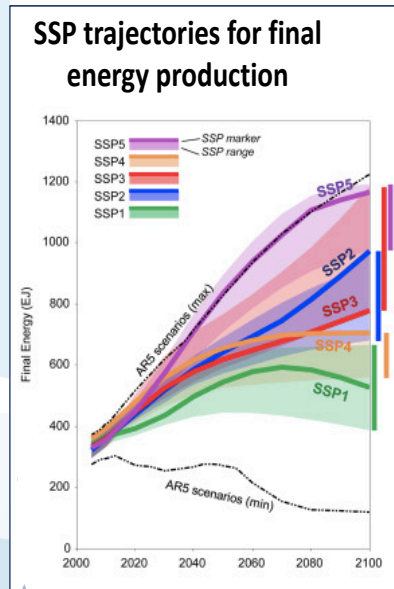


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CLIMATE FINANCE RISK MANAGEMENT: Endogenize climate finance risks in investment decisions

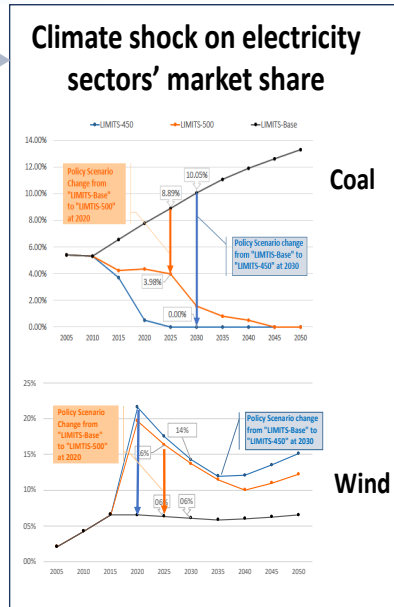
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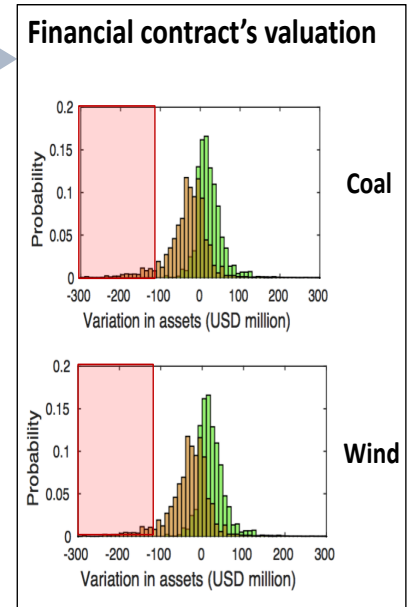
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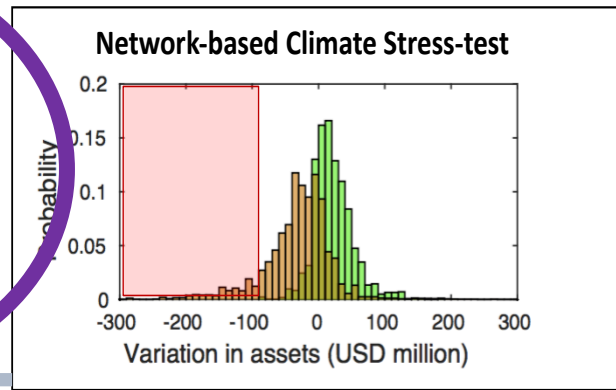
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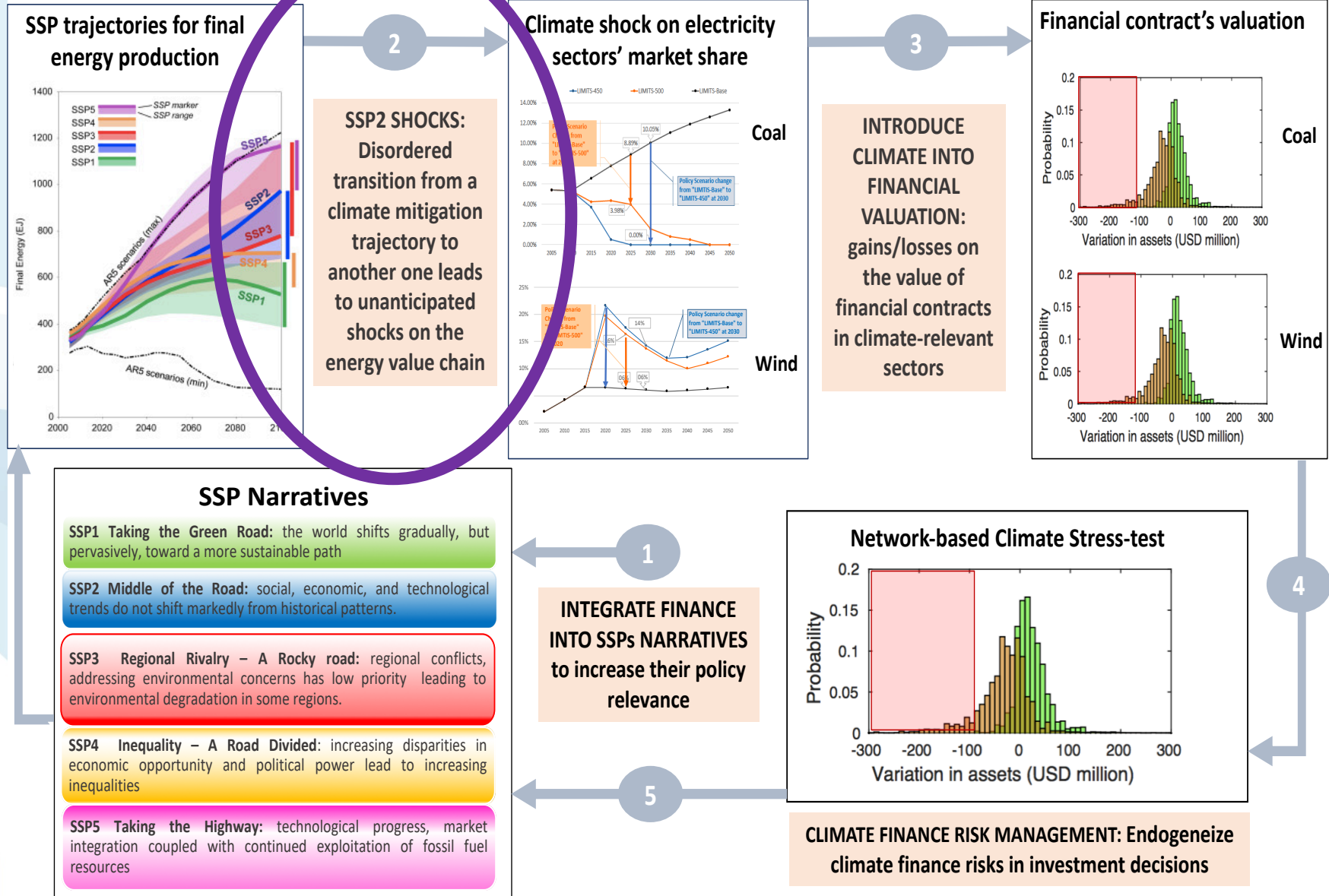


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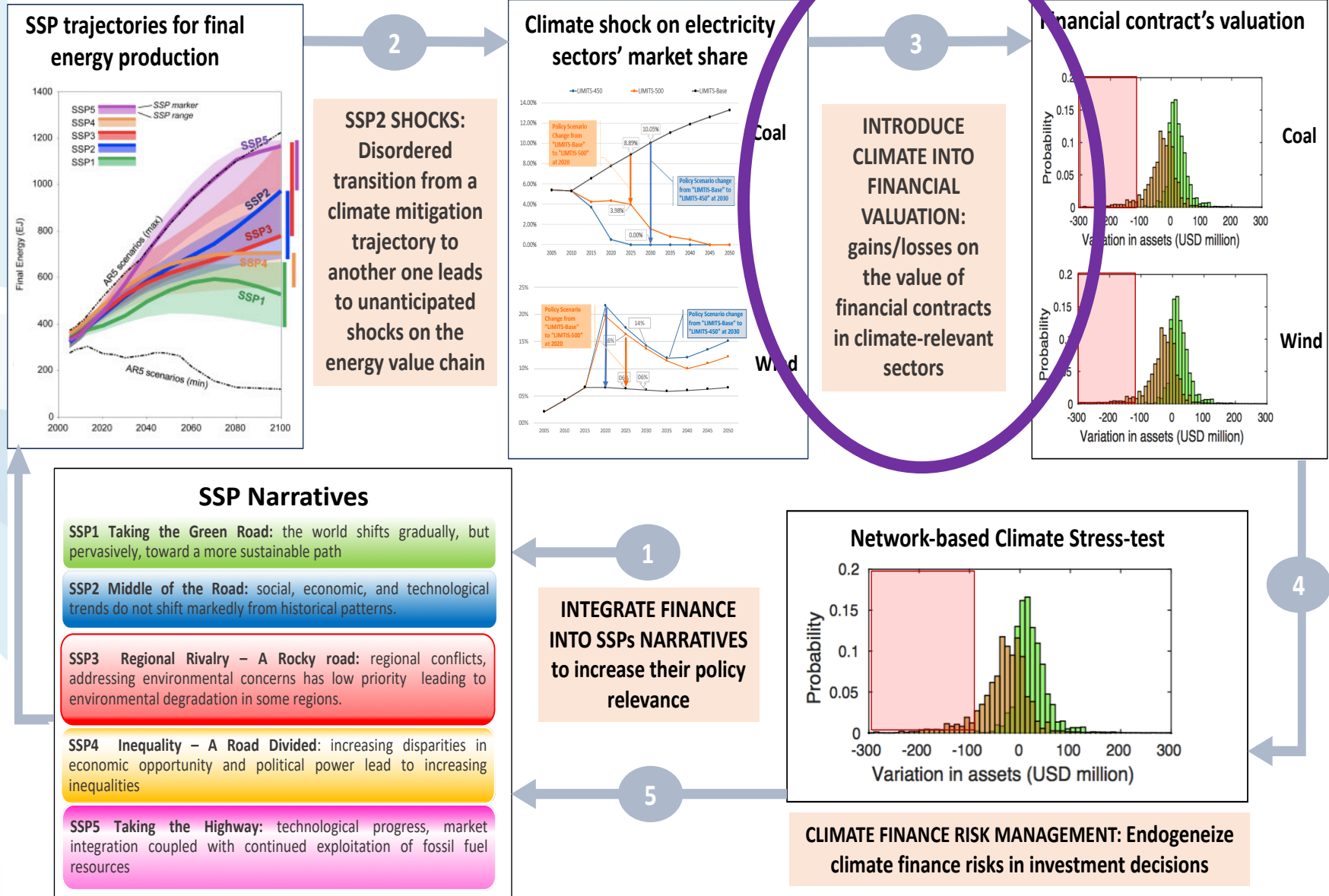
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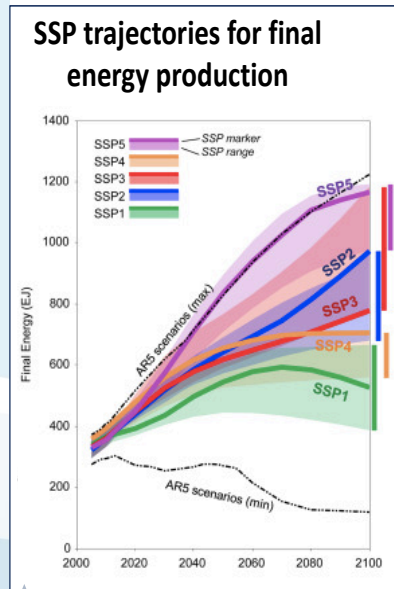
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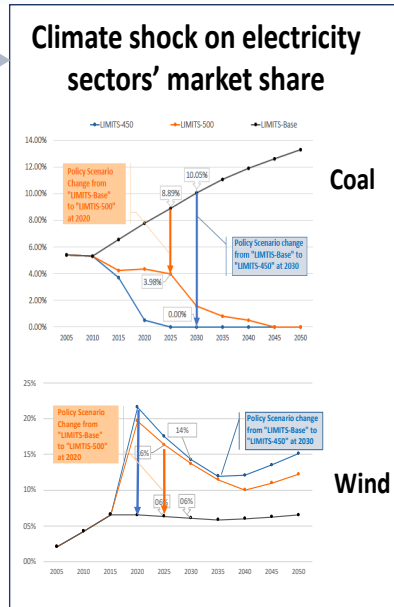
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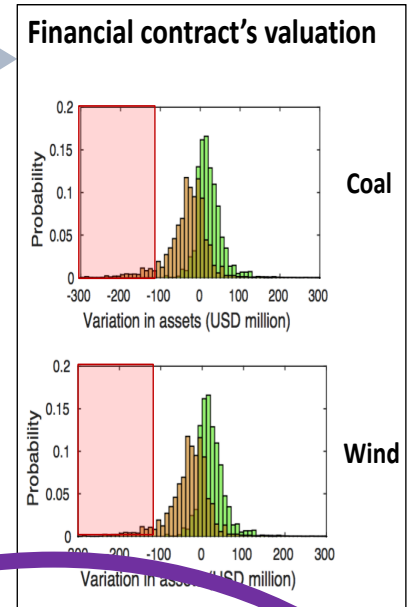
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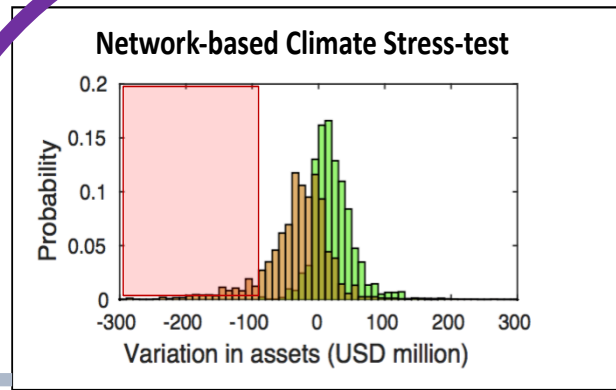
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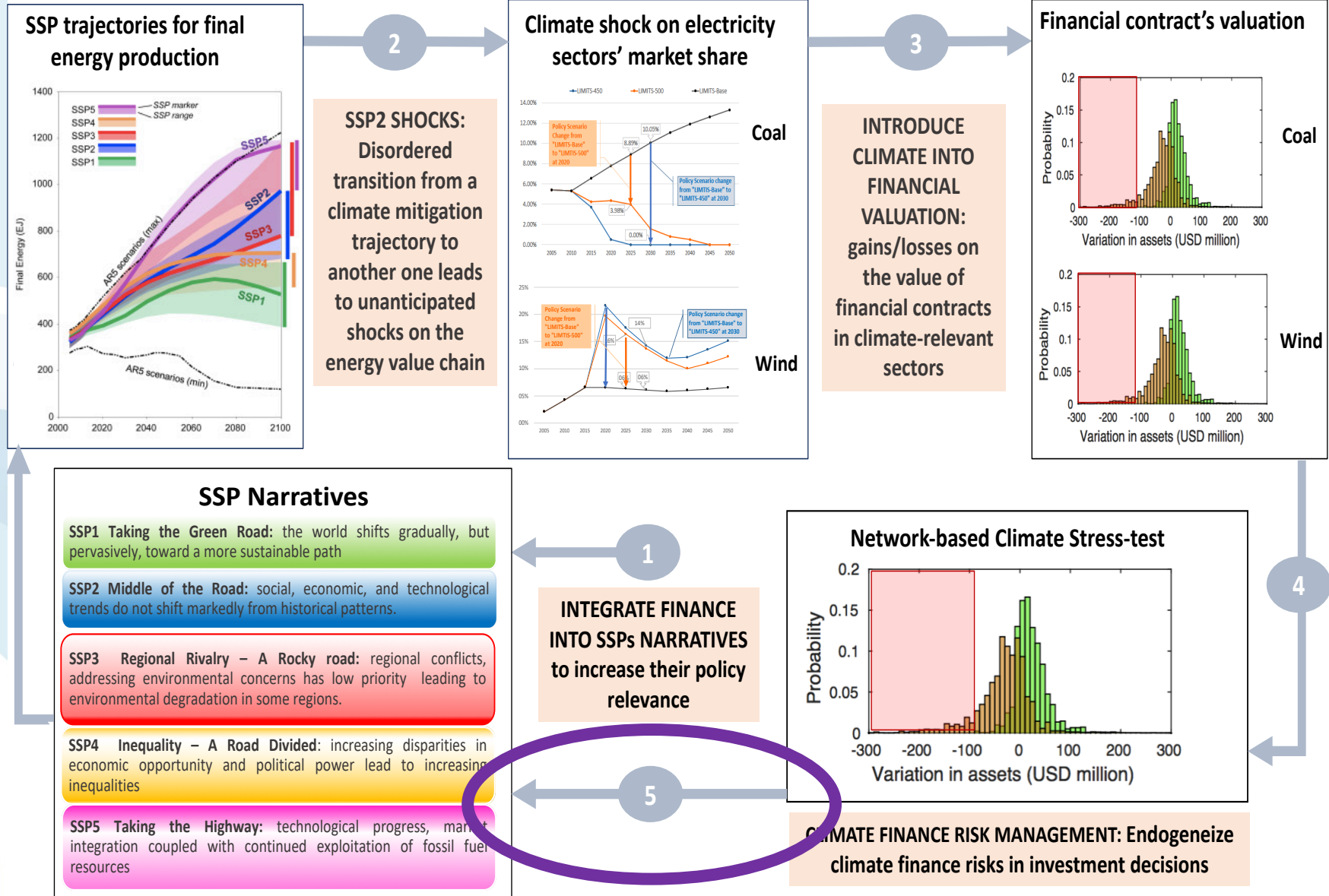
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