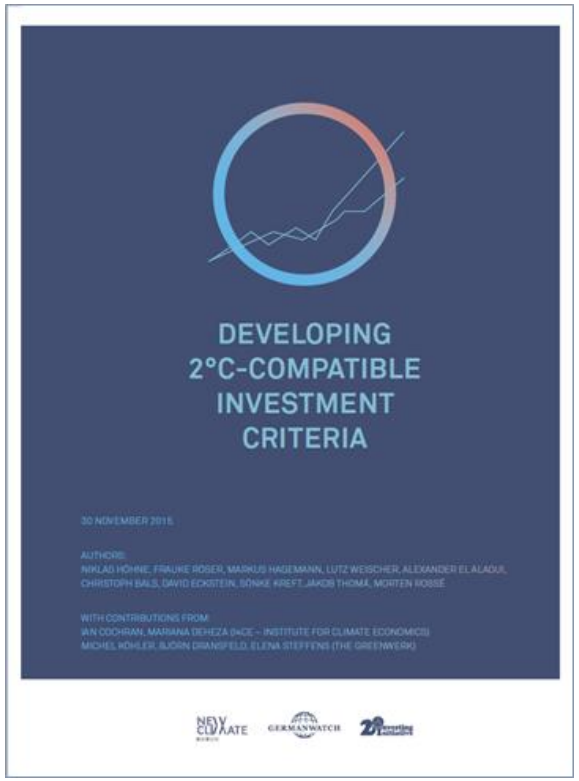
Development of 2°C compatible investment criteria



Lutz Weischer,
Team Leader International Climate Policy, Germanwatch

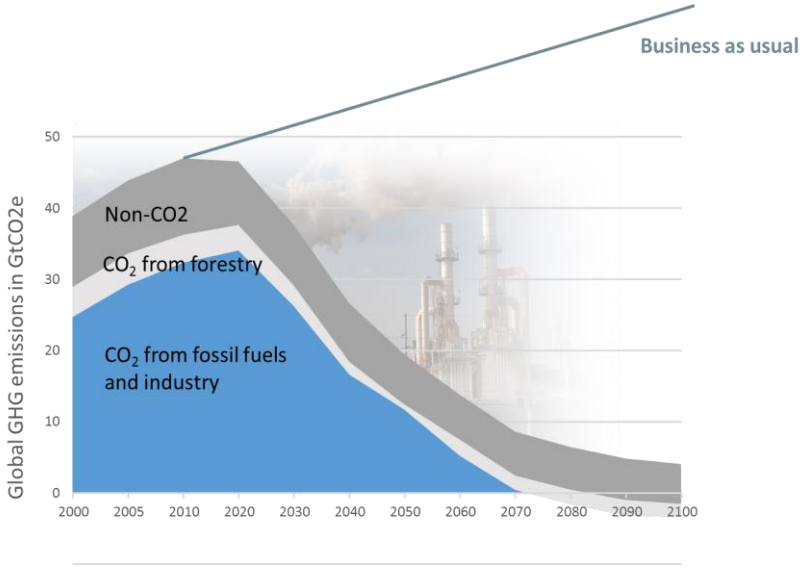
28 March 2017, Bonn

Study commissioned by German G7 Presidency 2015

Authors: Niklas Höhne, Frauke Röser, Markus Hagemann, Lutz Weischer, Alexander El Alaoui, Christoph Bals, David Eckstein, Sönke Kreft, Jakob Thomä, Morten Rossé

Why did we study 2°C investing criteria?

- 2°C requires step change in investments towards zero emissions
- Misguided investments will lock in greenhouse gas emissions for decades
- Development banks and similar financial institutions often incorporate climate into their investment decisions but rarely link these to temperature limits

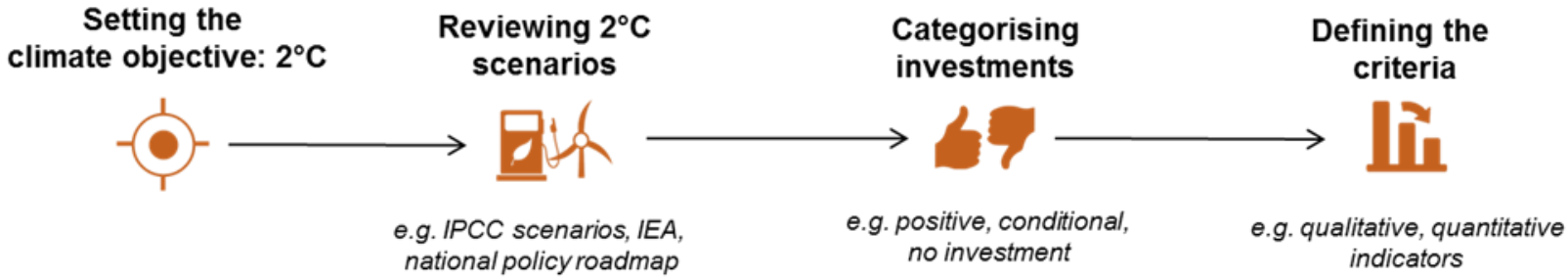


Source: Illustrative 2°C scenario, based on marker scenario RCP 2.6 of the IPCC, from RCP scenario database http://tntcat.iiasa.ac.at:8787/RcpDb/dsd?Action=htmlpage&page=download

What does the Paris Agreement mean for 2°C investing criteria?

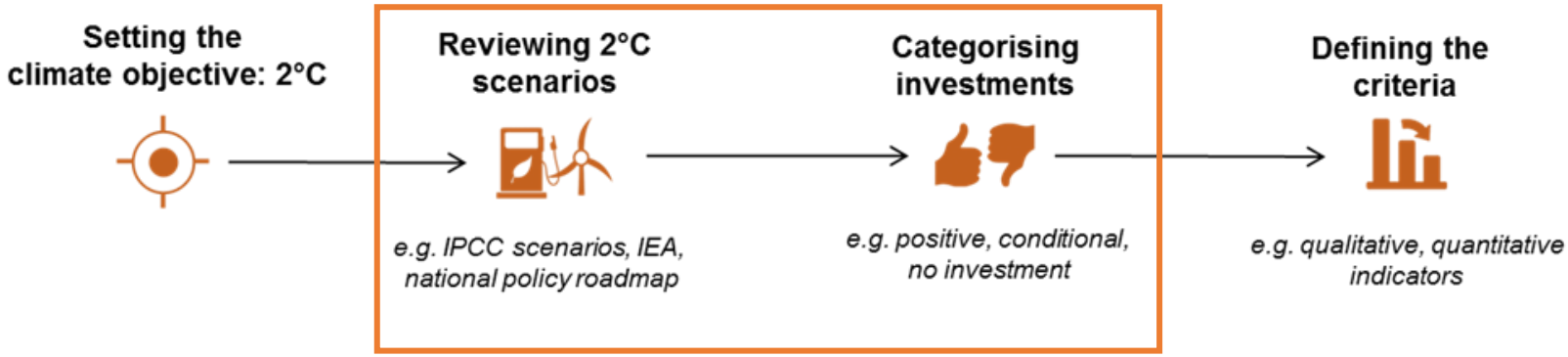
- Paris reinforces need for criteria:
  - Article 2.1 (c): "Making finance flows consistent..."
- Paris necessitates a review of our criteria:
  - "well below 2°C/1.5°C"
  - focus on "increasing the ability to adapt"

Approach



- Challenge: translate global goal to individual project
- Systematic review of different 2°C scenarios to determine where investments should/should not flow
- Categorise investments based on consistency across scenarios

Approach

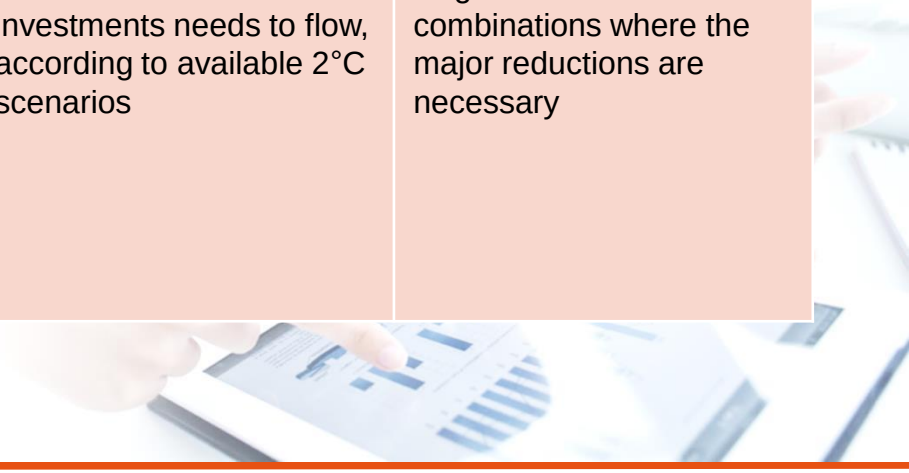


- Challenge: translate global goal to individual project
- Systematic review of different 2°C scenarios to determine where investments should/should not flow
- Categorise investments based on consistency across scenarios

Review of 2°C scenarios

- Comprehensive review of 2°C compatible model scenarios
  - Scenarios from Integrated Assessment Models (e.g. as in IPCC report)
  - Energy sector models (e.g. IEA)
  - Renewables and efficiency scenarios (WWF and Greenpeace)
  - Sector specific scenarios
- Elements assessed:

Contribution to emission reductions	Asset lock in risk	Value of future investments	Regional hotspots
Describes where most emission reductions are needed under 2°C scenarios	Describes the lock in potential of the technology considering • lifetime • value of investment Includes negative carbon lock-in but also positive lock-in in climate friendly technologies	Describes where investments needs to flow, according to available 2°C scenarios	Region / sector combinations where the major reductions are necessary



Results – Example energy supply

Investment options	Emission reductions		Asset lock-in risk (positive and negative)	Future investments		Regional hotspots	Positive investment	Conditional investment	Controversial investment	No investment	Priority for this project
	% emission reductions of total	Role under 2°C scenarios		Per sector	Per indiv. option						
Renewables	29% – 65%	High	Medium	High	High	China, United States, India					
Coal		Low – Medium	Medium – high		Low – Medium						
Natural gas		Low – Medium	Medium		Low – Medium						
Bio-energy CCS		Low – Medium	Medium		Low – Medium						
Nuclear		Low – Medium	Medium – High		Low – Medium						
Energy transmission infrastructure			High		Medium – High						
Energy storage			Medium – High		Medium						
Energy supply manufacturing			High								
Biofuels feedstock			Low								
Fossil fuel production			Medium								

Categories of investment areas

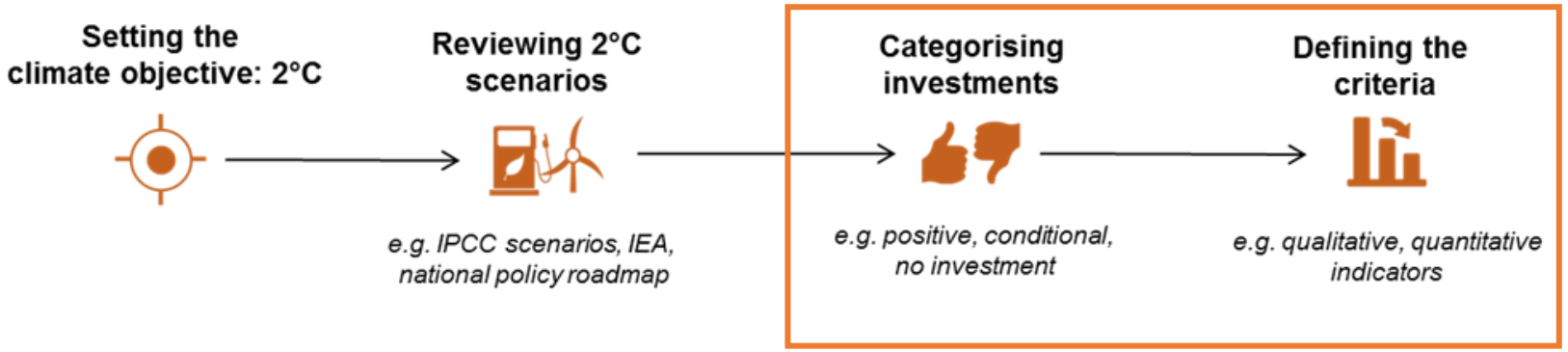
2°C Compatible	Conditional	Ambiguous	Misaligned
Fully aligned with 2°C consistently over all scenarios	2°C aligned only under certain conditions in all scenarios	2°C aligned in some scenarios, but not in others	Consistently misaligned with 2°C in all scenarios
	• Due to the fact that multiple pathways can lead to 2°C (e.g. more renewables and less efficiency or the other way around) • Due to different assumptions on technological development • Due to considerations of other sustainability factors		

Categories of investment areas

2°C compatible	Conditional	Ambiguous	Misaligned
Fully aligned with 2°C consistently across all scenarios	2°C aligned only under certain conditions in all scenarios	2°C aligned in some scenarios, but not in others	Consistently misaligned with 2°C in all scenarios
	• Due to the fact that multiple pathways can lead to 2°C (e.g. more renewables and less efficiency or the other way around) • Due to different assumptions on technological development • Due to considerations of other sustainability factors		
• Renewable energy • Energy storage • Low carbon transport fuel infrastructure • Low carbon vehicles	• **Gas fired power plants** • Energy transmission and distribution infrastructure • **Energy efficiency in heating and cooling of buildings** • Efficiency in industry • **Transport infrastructure** • Transport efficiency • Agriculture and forestry • Building appliances	• Biofuels • Fossil fuel production • Large hydropower • Bio energy carbon capture and storage • Nuclear	• New coal fired power plants with unabated emissions over their lifetime

Based on a comprehensive review of 2°C compatible model scenarios, including scenarios from Integrated Assessment Models (e.g. as in IPCC report), energy sector models (e.g. IEA), renewables and efficiency scenarios and sector specific scenarios.

Approach



- Challenge: translate global goal to individual project
- Systematic review of different 2°C scenarios to determine where investments should/should not flow
- Categorise investments based on consistency across scenarios

Suggestions for criteria based on categorization

- 2°C investment criteria for individual projects …
  - Can be developed from 2°C compatible global model scenarios
  - Have to be sector specific
  - Need to strike a balance between complexity and manageability
  - Need to also consider the overall portfolio
  - May vary across geographies
- 2° investing criteria for physical assets can take the form of
  - Positive / negative list (e.g. solar PV is always 2°C compatible)
  - Qualitative conditions (e.g. be integrated in a larger climate strategy)
  - Quantitative conditions (e.g. energy use per floor space)
- Use of 2°C investment criteria can be integrated in the decision making processes of international financial institutions
- Criteria are also needed to align financial flows with climate-resilient development and improve adaptive capacity of communities

Integrating criteria in decision making processes

	Regular project evaluation	**Additional questions on 2°C compatibility**
Preliminary screening	• Within the bank's priority sectors ? • …	• For development banks: on negative list? • For dedicated climate funds: on positive list?
Economic evaluation	• Is the project viable? • Not crowding out private finance? • …	• Project viable with shadow carbon price?
Development evaluation	• Does project promote development, in line with country strategy/needs?	
ESG evaluation	• Are any environmental, social or governance issues associated with the project?	• Does project meet qual/quant benchmarks? • Does project fulfil existing standards deemed to be 2°C compatible? • Is project consistent with national 2°C strategy • …

Overall Bank strategies

Sector policies

Country frameworks

Guidance for individual project types

NEW CLIMATE INSTITUTE

GERMANWATCH

2° Investing Initiative

2°C criteria for the power sector

2°C compatible	Conditional / ambiguous		Misaligned
Preliminary screening: Energy source: Wind PV Small hydro	**Economic evaluation:** Energy source: e.g. natural gas Shadow economic price of carbon	**ESG evaluation:** Energy source: e.g. natural gas Decarbonisation based approach. *Simple*: Prove that project fits into a path towards 0 gCO2/kWh in 2050 *Advanced*: Prove that the project fits into a national sector-based decarbonisation strategy including lifetime, operation mode and capacity requirements	**Preliminary screening**: Energy source: New coal fired power plants with unabated emissions over their lifetime

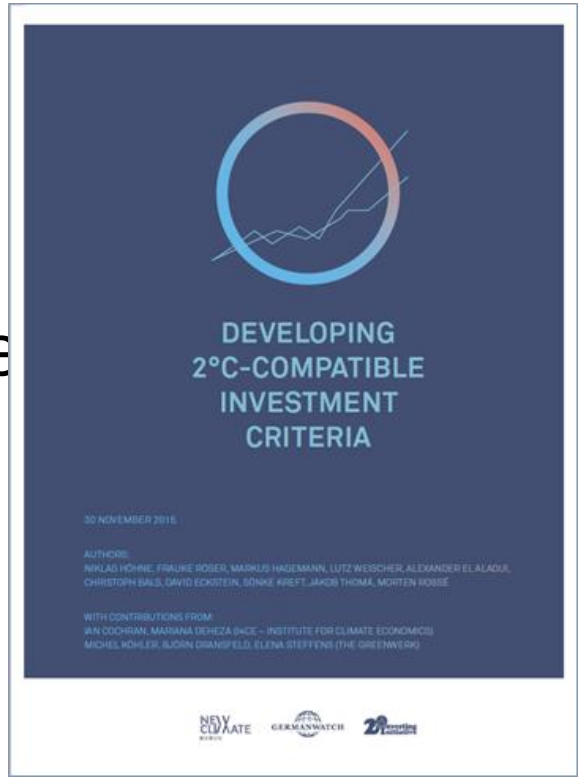
NEW CLIMATE INSTITUTE GERMANWATCH 2° Investing Initiative

Next steps

- Further research is needed to
  - a) align with 1.5°C
  - b) attempt to clarify projects in "ambiguous" category
  - c) develop criteria for climate-resilience
- Financial institutions may choose to respond in different ways to the fact that for some individual projects there is a higher certainty that they are 2°C compatible than for others - in addition to criteria for individual projects, portfolio-wide strategies and objectives might be useful
- A coalition of “early adopters” could be formed bringing together interested bilateral development banks and governments:
  - Support and accelerate the development of criteria in sectors
  - Road test the proposed criteria

Question and Comments?

- Comments and questions welcome
  - weischer@germanwatch.org
  - +49-30-288 356-983



- Download the study at
  - http://germanwatch.org/en/2degree-criteria