



# The IPCC 6th Assessment Cycle: Climate change and mobilising finance

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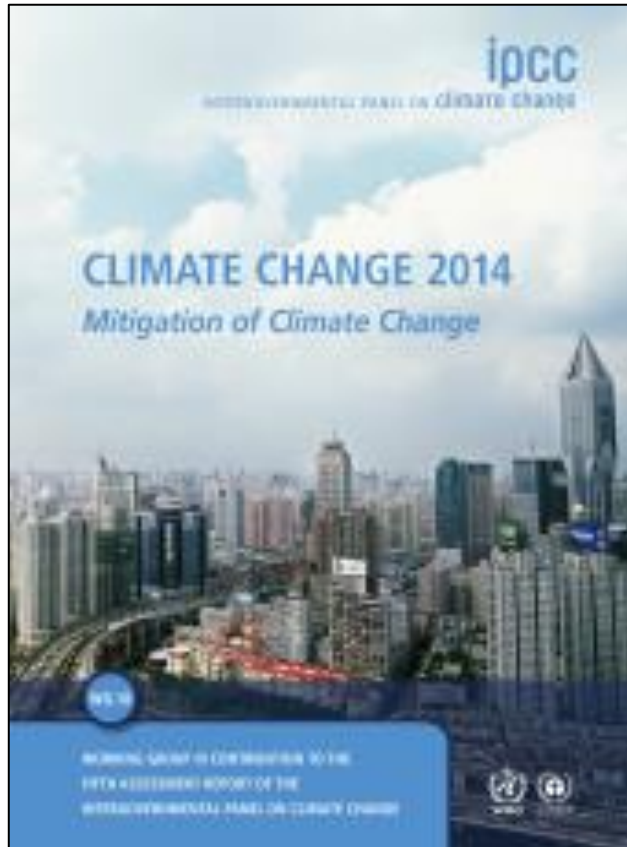
**ipcc**  
INTERGOVERNMENTAL PANEL ON climate change



# Outline

- Key findings from the Fifth Assessment Report (AR5)
- Finance in AR5
- Plans for AR6
- Finance in AR6
- Engaging with IPCC

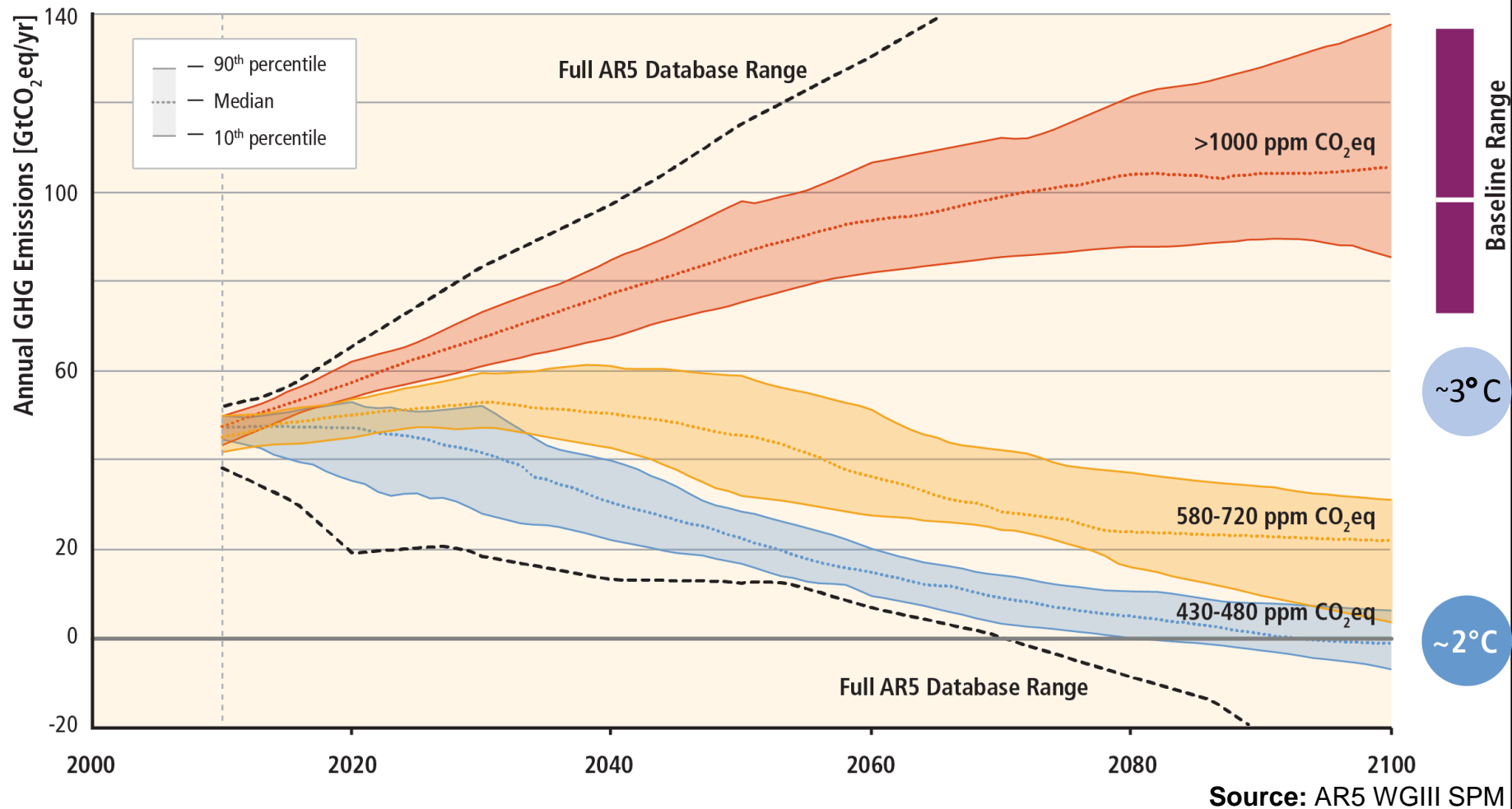
# IPCC Fifth Assessment Report



## Working Group III contribution:

Mitigation of Climate Change  
(2014)

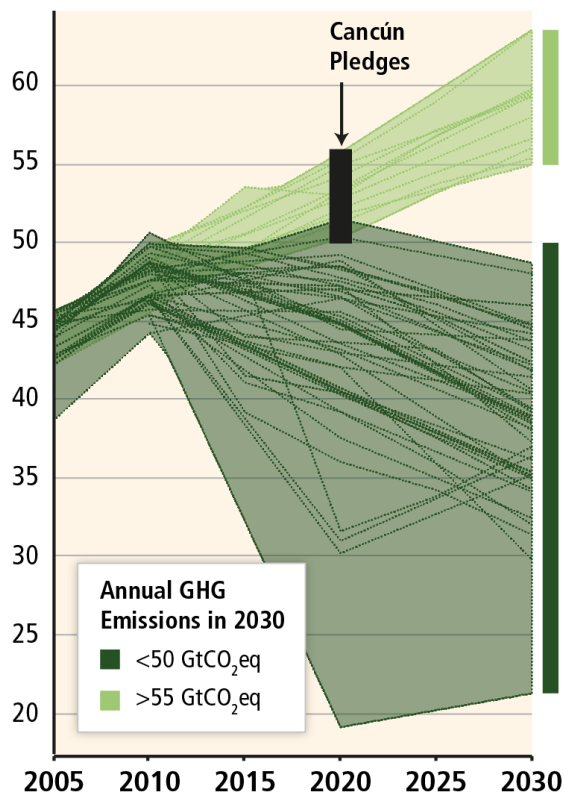
# Stabilization of atmospheric concentrations requires moving away from the baseline – regardless of the mitigation goal



# The sooner we act, the easier and the cheaper it will be to reach a given temperature goal

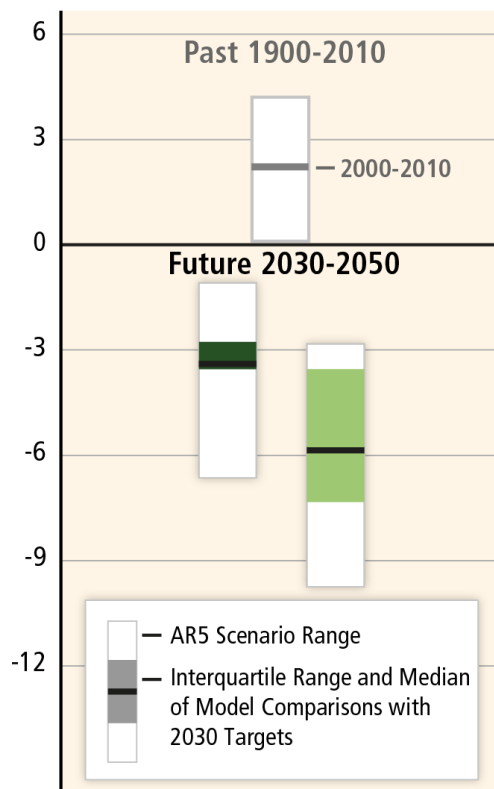
## Before 2030

GHG Emissions Pathways [GtCO<sub>2</sub>eq/yr]

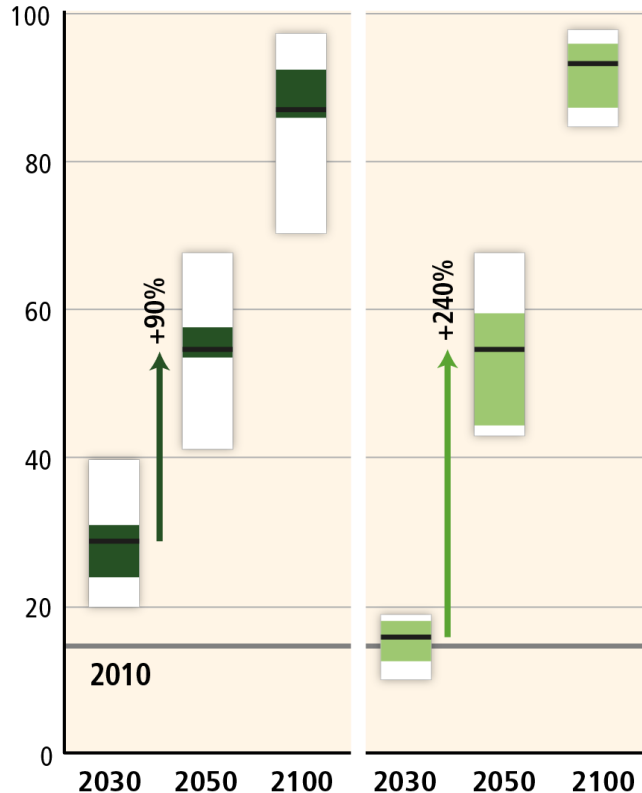


## After 2030

Rate of CO<sub>2</sub> Emission Change [%/yr]

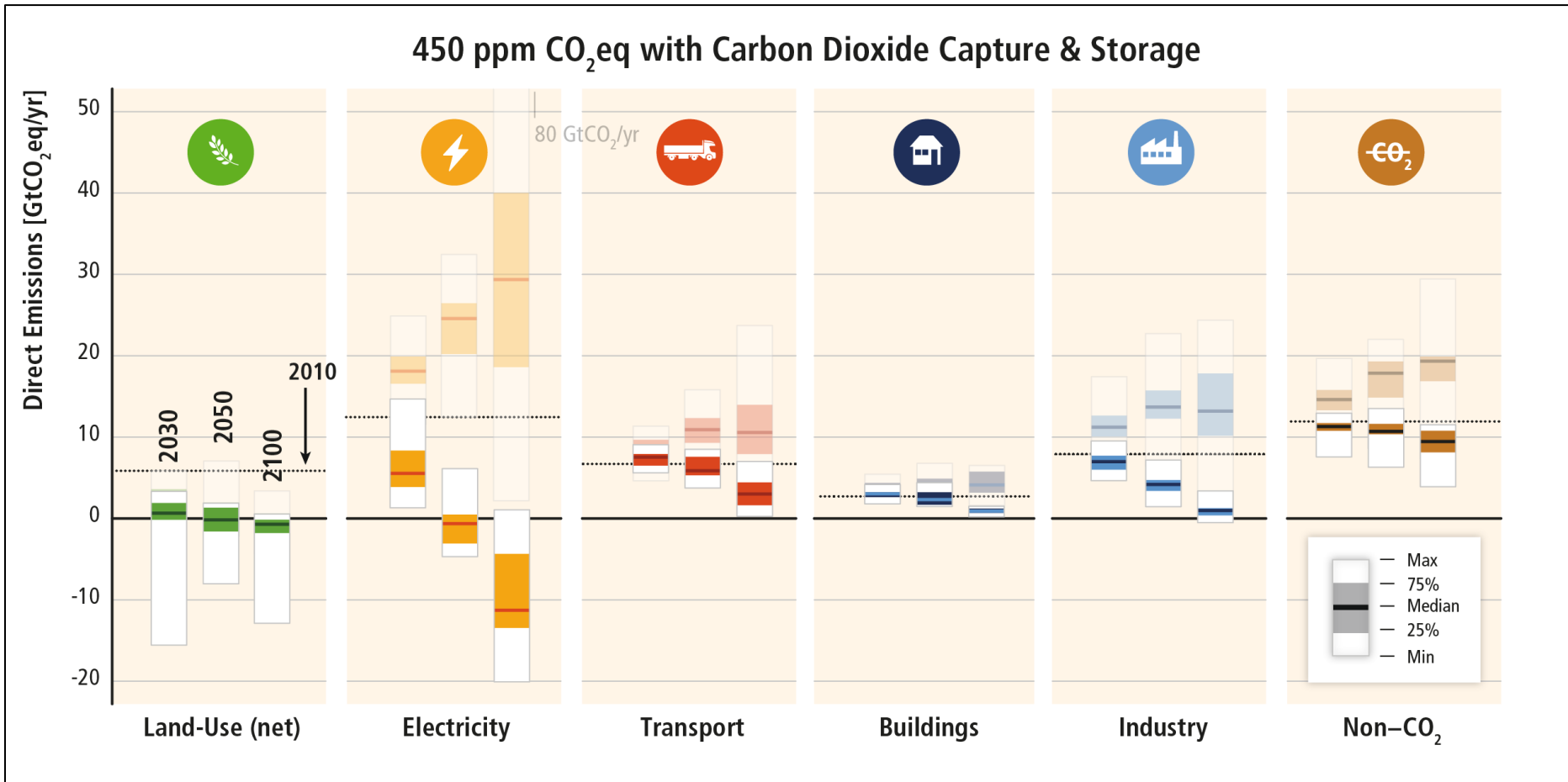


Share of Low-Carbon Energy [%]



Source: AR5 WGIII SPM

# Emission patterns would need to change throughout the economy



# Mitigation Measures



## More efficient use of energy



## Greater use of low-carbon and no-carbon energy

- Many of these technologies exist today



## Improved carbon sinks

- Reduced deforestation and improved forest management and planting of new forests
- Bio-energy with carbon capture and storage



## Lifestyle and behavioural changes

Source: AR5 WGIII SPM

# Ambitious Mitigation Is Affordable

- Economic growth reduced by ~ 0.06% (BAU growth 1.6 - 3%)
- This translates into delayed and not forgone growth
- Estimated cost does not account for the benefits of reduced climate change
- Unmitigated climate change would create increasing risks to economic growth
- Opportunities for economic diversification

Source: AR5 WGI and WGII SPMs



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# Outline of AR5 Working Group III Report

## 1 Introductory Chapter

For the first time, an assessment report by the IPCC contained a chapter dedicated to investment and finance.

## 7 Energy Systems

## 8 Transport

## 9 Buildings

## 10 Industry

## 11 Agriculture, Forestry and Other Land Use (AFOLU)

## 12 Human Settlements, Infrastructure and Spatial Planning

## 13 International Cooperation: Agreements and Instruments

## 14 Regional Development and Cooperation

## 15 National and Sub-National Policies and Institutions

## 16 Cross-cutting Investment and Finance Issues

# Outline of AR5 finance chapter

1. Introduction
2. Scale of financing at national, regional, and international level in the short-, mid-, and long-term
3. Enabling environments
4. Financing low-carbon investments, opportunities, and key drivers
5. Institutional arrangements for mitigation financing
6. Synergies and trade-offs between financing mitigation and adaptation
7. Financing developed countries' mitigation activities
8. Financing mitigation activities in and for developing countries including for technology development, transfer, and diffusion
9. Gaps in knowledge and data

# AR5 and finance: Main conclusions

- Substantial knowledge gaps: no definition for climate finance and climate investment
  - The term 'climate finance' is applied both to the financial resources devoted to addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change.

## Some other areas of uncertainty

The scale of climate finance depend upon the definition of mitigation and adaptation projects adopted

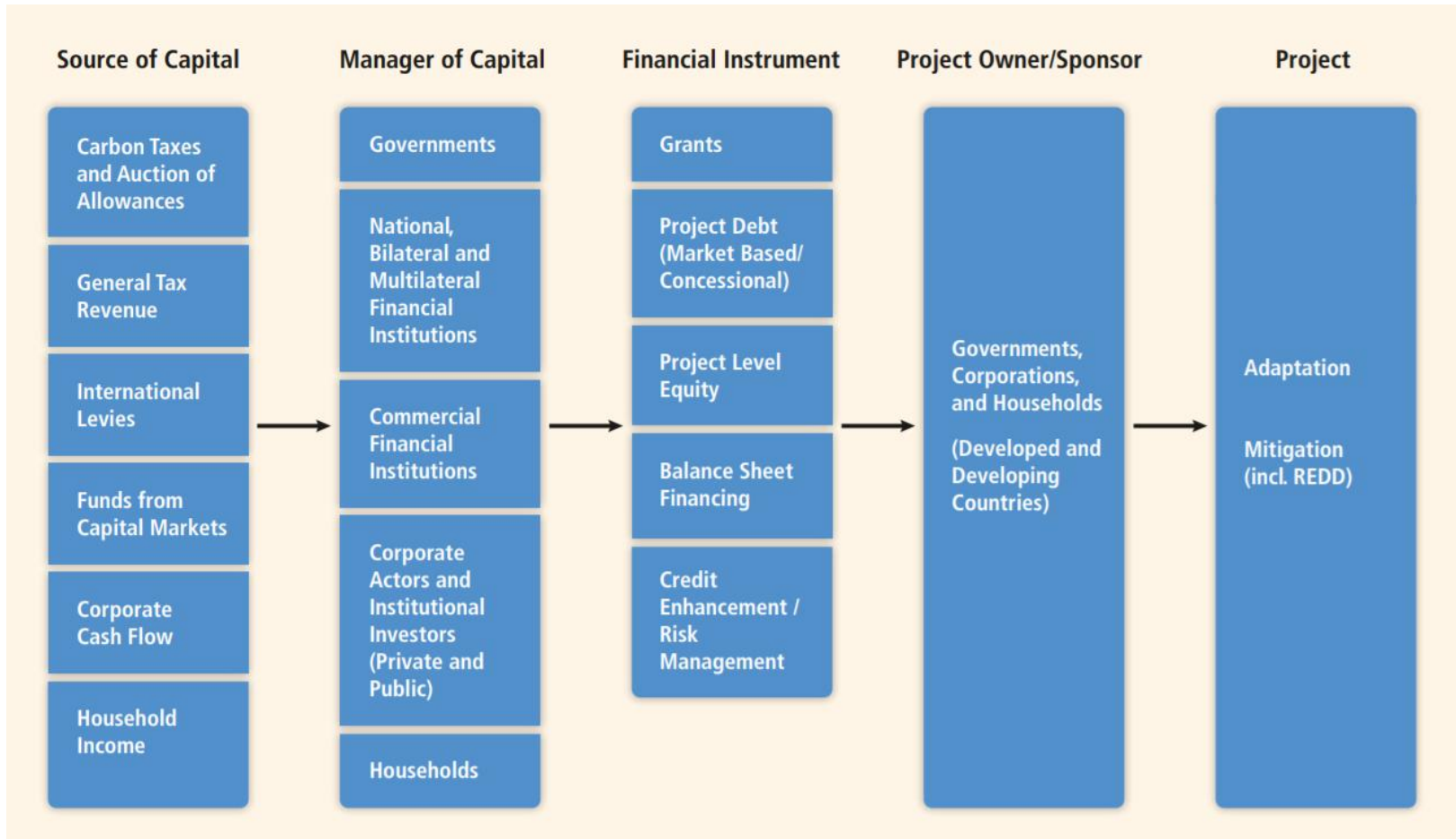
For different measures, what costs qualify as 'climate finance'?

Uncertainties on incremental investment and cost

Financial resources devoted to addressing climate change globally or to developing countries?

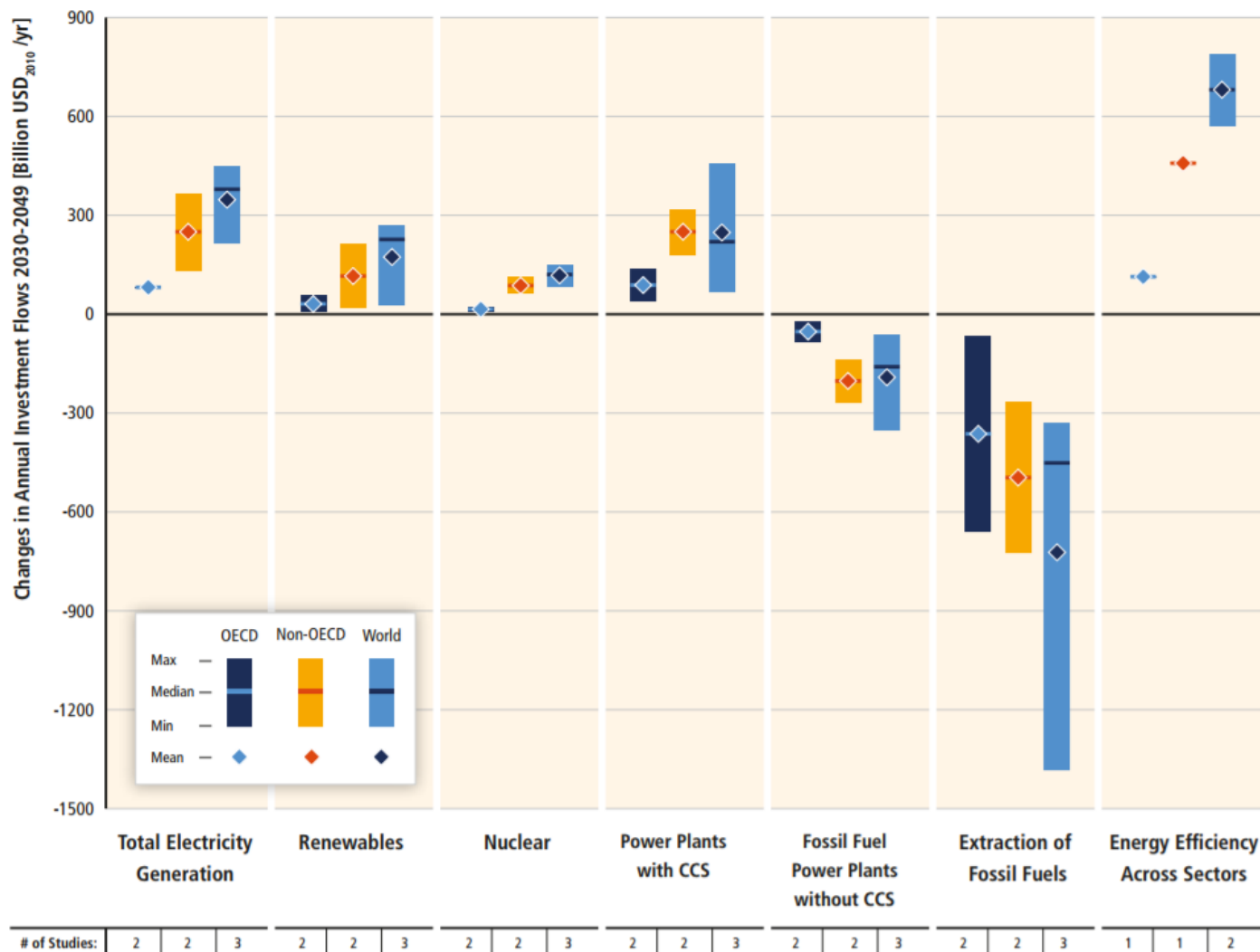
No comprehensive system for tracking climate finance

# Sources of climate finance



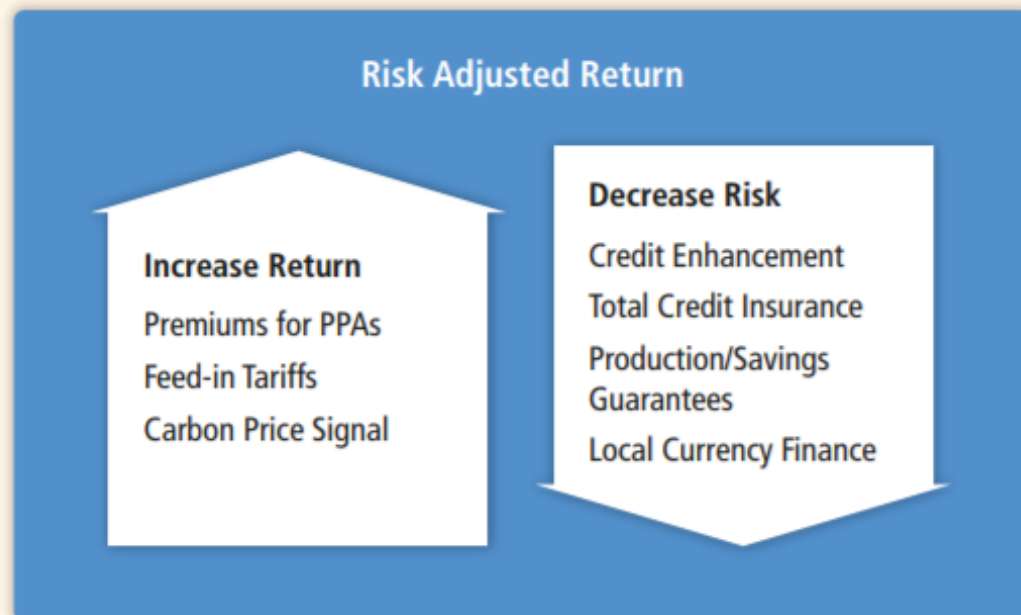
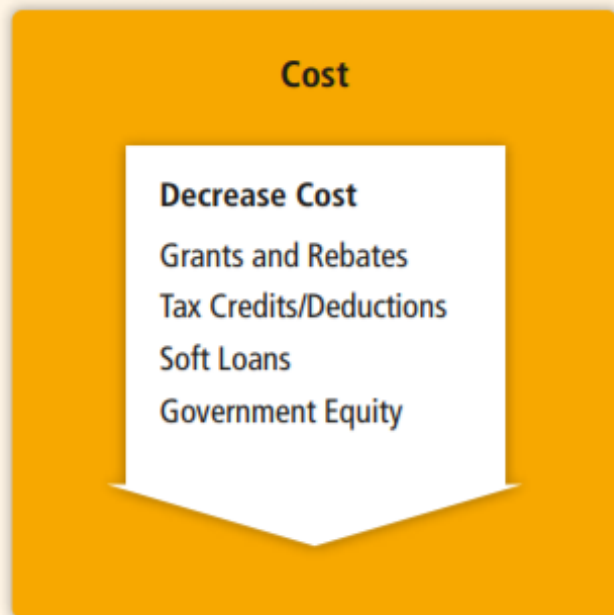
- **Total climate finance** for mitigation and adaptation was estimated at **343 to 385 billion USD** (2010/11/12 USD)
  - The total climate finance **flowing to developing countries** was estimated to be between **39 to 120 billion USD** (2009-12 USD)

- Emission patterns that limit temperature increase from preindustrial level to no more than 2° C require considerably **different patterns of investment**
- Resources to address climate change need to be **scaled up** considerably over the next few decades both in developed and developing countries



- Within appropriate **enabling environments** (eg effective institutions, improved regulations and guidelines, security of property rights, credibility of policies), the private and public sectors can play an important role in financing mitigation
- Main barrier to the deployment of **low-carbon technologies**: low risk-adjusted rate of return on investment vis- à-vis high-carbon alternatives = **higher cost of capital**

### Instruments to enhance market competitiveness of low-carbon projects



## Examples of national funding entities in developing countries

Name, country, establishment	Description	Source of fund and operations	Governance
<b>Amazon Fund, Brazil (2010)</b>	Established to combat deforestation and promote sustainable development in the Amazon. Focus: adaptation and mitigation	Designed to attract national and private investment for Amazon rainforest projects as well as donations and earnings from non-reimbursable investments made	Managed by the Brazilian Development Bank (BNDES), a Guidance Committee composed of federal and state governments and civil society, and a Technical Committee
<b>Bangladesh Climate Change Resilience Fund (BCCRF) (2010)</b>	Established to provide support for the implementation of Bangladesh's Climate Change Strategy and Action Plan 2009–2018 and particularly vulnerable communities. Focus: adaptation and mitigation	Designed to attract funds from UNFCCC finance mechanisms, and direct donor support	Managed by a board composed of Ministers of Environment, Finance, Agriculture, Foreign Affairs, and Women and Children Affairs and disaster management, as well as donors and civil society organizations
<b>China CDM Fund (CDMF) (2007)</b>	Established jointly by Ministries of Finance, Foreign Affairs, Science and Technology, and National Development and Reform Commission (NDRC). Focus: mitigation	Funded by revenues generated from CDM projects in China, as well as grants from domestic and international institutions	Governed by the Board of the China CDM Fund that comprises representatives of seven line ministries, and managed and operated by a management centre affiliated with the Ministry of Finance
<b>Indonesia Climate Change Trust Fund (ICCTF) (2010)</b>	Established jointly by the National Development Planning Agency and Ministry of Finance to pool and coordinate funds from various sources to finance Indonesia's climate change policies and programmes	Currently funded by grants from development partners but designed for direct access to international climate funding and to attract private funding	The UNDP is an interim Trustee operating under a Steering Committee headed by the National Development Planning Agency that also includes donors and other line ministries
<b>Guyana REDD Investment Fund (GRIF) (2010)</b>	Established to finance activities under the Low Carbon Development Strategy of Guyana and to create an innovative climate finance mechanism. Focus: mitigation and adaptation	Designed to attract donor support. Operates under a performance-based funding modality, based on an independent verification of Guyana's deforestation and forest degradation rates and progress on REDD+ enabling activities	A Steering Committee with members of government and financial contributors chaired by the Government of Guyana, is the decision making and oversight body. The International Development Association (IDA) of the World Bank Group acts as Trustee and the partner entities provide operational services
<b>Ethiopia Climate Resilient Green Economy Facility (2012)</b>	Established to support country's vision of attaining a middle-income economy with low-carbon growth by 2020. Focus: mitigation and adaptation	Designed to mobilize, access, and blend both local and international public and private resources to support Ethiopia's Climate Resilience Green Economy Strategy	Governed by a Ministerial Steering Committee chaired by Ministry of Finance and Economic Development with an advisory body composed of development partners, multilateral organizations, national non-governmental organizations (NGOs), civil society, private sector, and academia



# Finance: mitigation and adaptation

- Important **synergies and trade-offs** between financing mitigation and adaptation exist
- The optimal balance, including allocation of resources, should be determined taking into account **possible co-benefits**
  - May be difficult to assess
- Climate change impacts differ in different regions: **Regional vs global financing** mechanisms might be more appropriate

# From AR5 to AR6: Gaps in knowledge and data

- **Common definitions** and data availability
- **Model** outputs and approaches
  - Sectors other than energy supply
  - Treatment of investment and technology risks
- **Effectiveness** and efficiency of climate finance, enabling environments
  - Efficient levers to mobilize private investment and its potential
  - More practitioner knowledge required?
- Effectiveness of different **public climate finance channels** in driving low-carbon development
  - Which institutional arrangements are more effective at which level, for what investment and in which sector?
- Balance **between mitigation and adaptation** finance and investment
  - Better-informed assessment of the effective integration of mitigation and adaptation, including trade-offs and cost avoidance estimates

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- **Plans for AR6**
- Finance in AR6
- Engaging with IPCC

# IPCC Sixth Assessment Report



# Working Group III AR6 Bureau

## Co-Chairs



**Prof Jim Skea**  
*UK*



**Prof PR Shukla**  
*India*

## Vice-Chairs



**Amjad Abdulla**  
*Maldives*



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*Italy*



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*Cuba*



**Andy Reisinger**  
*New Zealand*



**Diana Úrge-Vorsatz**  
*Hungary*

# Aspirations of new Bureau

- Enhance participation of developing country experts
- Deepen engagement between Working Groups
- Link top-down and bottom-up approaches
  - Strengthen links between the insights obtained from high level integrated assessment modelling and the concrete steps required to mitigate climate change
- Increase policy relevance and neutrality by **incorporating inputs from business, industry and finance**
- Enhance the relevance for policymakers charged with following through decisions made under the Framework Convention
- Connect to domestic challenges such as job creation, economic diversification, health, innovation and technology development, energy access and poverty alleviation

# Challenges for AR6

AR5 achieved a systemic view of mitigation opportunities. But there is a need to include a wider range of approaches in the assessment, including national and regional modelling as well as global models.

## Challenges for AR6:

- Assess the **linkages** between high-level climate stabilization goals and scenarios on the one hand and the practical steps needed in the short- and medium-term to make the realisation of these goals possible
- Make greater use of **practitioner knowledge and social science disciplines**, to gain insight into issues related to lifestyle, behaviour, consumption, technological choices and socio-technical transitions.
- Link climate change mitigation better to other **agreed policy goals** nationally and internationally (e.g. the Sustainable Development Goals - SDGs).

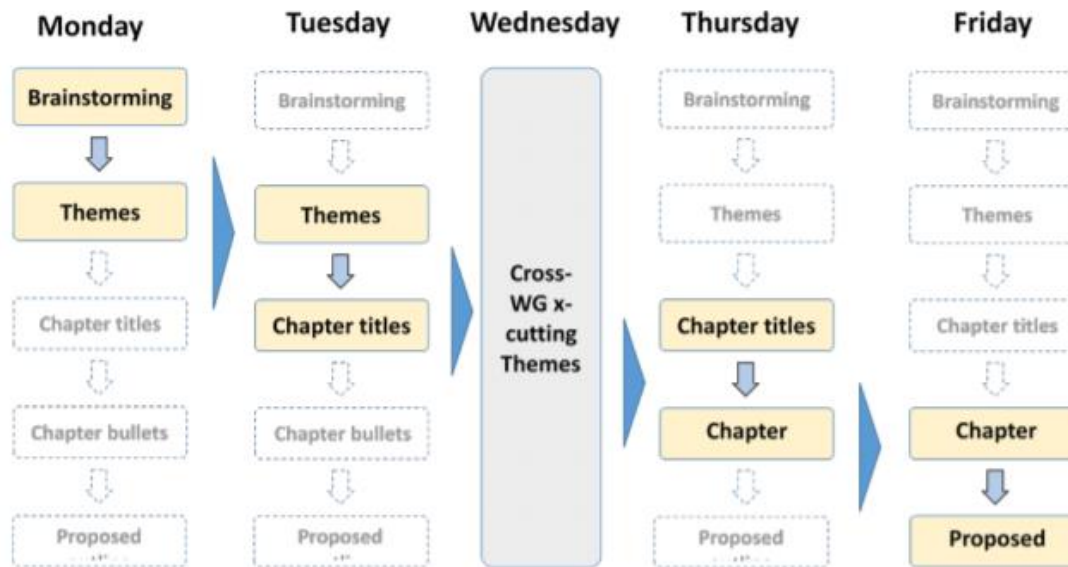
# Government questionnaire: priority topics for WG III

Policy relevant information on the Paris Agreement goals (well below 2°C, efforts to achieve 1.5°C, climate neutrality); anticipate the global stocktake; transformation pathways to meet 2°C and 1.5°C; social + <b>financial</b> + technological + sectoral + regional implications of pathways	19
Geo-engineering, including limits, negative emissions	7
The role of short-lived climate pollutants and other benefits	6
Options for decarbonisation pathways, including <b>solutions from business</b>	6
Links between climate change and SDGs	5
<b>Technological, economic, social, and institutional barriers</b> to realising mitigation targets and benefits from carbon offset mechanisms	4
Opportunities, challenges, barriers and <b>co-benefits</b> of climate change mitigation policies and measures	3
Impacts on land-use change, including ecosystem restoration, biodiversity and ecosystem functions and services	3



# AR6 scoping Meeting (1-5 May 2017)

- Structured bottom-up process: no draft outline to start the meeting.
- Outline emerged over the course of the week through interactive series of discussions.



To better inform the scoping of AR6, an expert meeting was held in advance of the meeting to address some of the specific challenges identified for AR6.

# Outline approval: 46<sup>th</sup> session of the IPCC in Montreal (September 2017)



# Agreed outline of WG III AR6

Framing (1 chapter)

## 1. Introduction and framing

Set up sustainable development as key framing concept

High-level assessment of emission trends, drivers and pathways (3 chapters)

## 2. Emissions trends and drivers

## 3. Mitigation pathways compatible with long-term goals

## 4. Mitigation and development pathways in the near- to mid-term

Balancing sources and sinks/warming levels

NDCs, emissions peaking, mid-century long-term low greenhouse gas emission development strategies

Sectoral chapters (8 chapters)

## 5: Demand, services and social aspects of mitigation

## 6: Energy systems

## 7. Agriculture, Forestry, and Other Land Uses

## 8. Urban systems and other settlements

## 12. Cross sectoral perspectives

## 9. Buildings

## 10. Transport

## 11. Industry

Orients sectors to human needs

The sectoral core: maps on to inventories

Responses not captured by sectoral framing

Institutional drivers (2 chapters)

## 13. National and sub-national policies and institutions

## 14. International cooperation

Institutions, policies and cooperation

Financial and technological drivers (2 chapters)

## 15. Investment and finance

## 16. Innovation, technology development and transfer

Financial flows + technological innovation

Synthesis (1 chapter)

## 17. Accelerating the transition in the context of sustainable development

Synthesis sustainable development in different geographical scales

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## Chapter 15: Investment and finance

- Definitions of climate finance
- Recent developments
- Scenarios of and needs for investment and financial flows related to mitigation pathways and climate change action at the global and regional scales
- Scenarios of and needs for investment and financial flows related to mitigation pathways and climate change action in developing countries
- Investment patterns, and financing for climate resilient development, consistent with different mitigation pathways
- Enabling conditions for changing finance and investment patterns
- Public climate finance flows, including multilateral and bilateral, taking into account the scaling up of such flows
- International private flows of climate finance
- Links between national and international finance including developments in financial mechanisms and public-private partnerships
- National and sub-national climate finance mobilization and flows, within and across countries, including links to climate policy
- Emerging trends (community involvement in climate finance, sustainable investment criteria by institutional investors)
- Climate-related investment opportunities and risks
- Linkages between finance and investments in adaptation and mitigation, and implications for sustainable development

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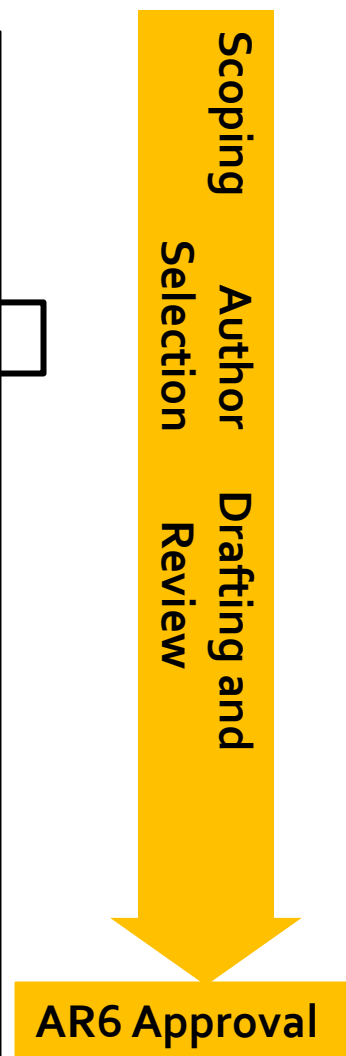
### Case studies

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# Timeline for WGIII contribution to AR6

26-28 April 2017	Expert Meeting on Mitigation, Sustainability and Climate Stabilization Scenarios
1-5 May 2017	AR6 Scoping Meeting
6-10 Sept	Panel consideration of outline for AR6
<b>15 Sept – 27 Oct 2017</b>	<b>Call for CLA/LA/RE Nominations</b>
29 Jan – 4 Feb 2018	Decision on selection of CLA/LA/RE
1-5 Apr 2019	1st Lead Author Meeting (LAM1)
30 Sep – 4 Oct 2019	2nd Lead Author Meeting (LAM2)
9 Dec 19 – 31 Jan 20	1st Order Draft (FOD) Expert Review
30 Mar – 3 Apr 3 2020	3rd Lead Author Meeting (LAM3)
1 Jun – 24 Jul 2020	2nd Order Draft (SOD) Expert Review
19-23 Oct 2020	4th Lead Author Meeting (LAM4)
1 Feb – 26 Mar 2021	FGD Government Review of SPM
12-14 Jul 2021	IPCC acceptance/adoption/approval





# How to get involved in AR6

**1) Become an expert reviewer on the AR6 drafts** – crucial part of the IPCC process

**2) Become a Lead Author or Review Editor**

Contact an IPCC national focal point, an IPCC observer organisation or a Bureau member

Provide information on:

- Professional background (including education, areas of expertise and IPCC experience)
- Which role you are volunteering for
- Up-to-date CV (4 pages maximum)
- List of up to three relevant publications.

**3) Contribute to the literature that will be assessed, specifically relevant to identified knowledge gaps**

## **AR5:**

831 experts selected from 3,598 nominations  
across the three Working Groups.

**Contact the Technical Support Unit for more information: [tsu@ipcc-wg3.ac.uk](mailto:tsu@ipcc-wg3.ac.uk)**



# Thank you for your attention

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