



# Mitigation of climate change and the global stocktake

SBSTA-IPCC Special Event on assessments of IPCC and the global stocktake

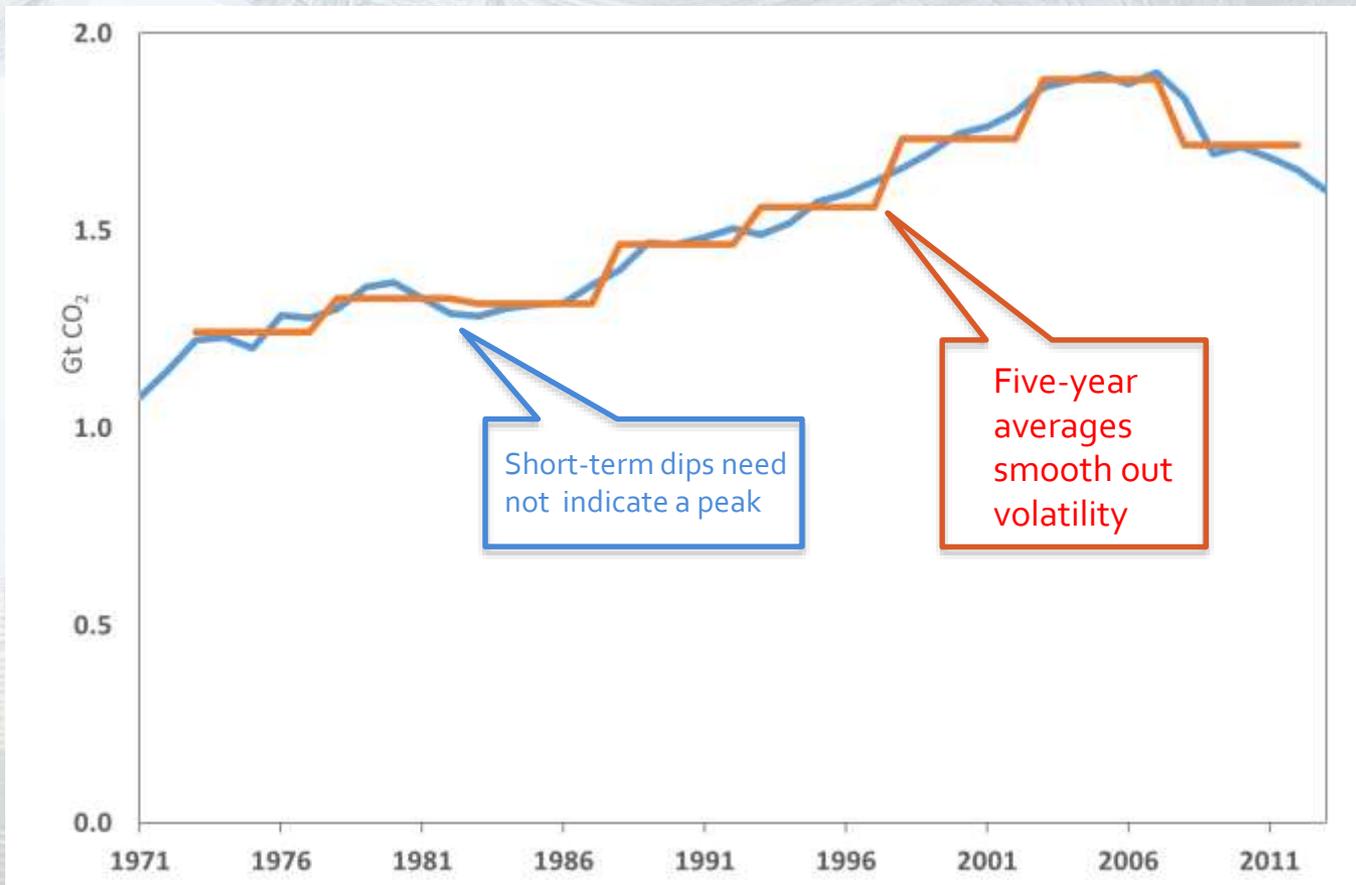
Bonn, 18 May 2016

PR Shukla and Jim Skea  
Co-Chairs IPCC WG-III

# Outline

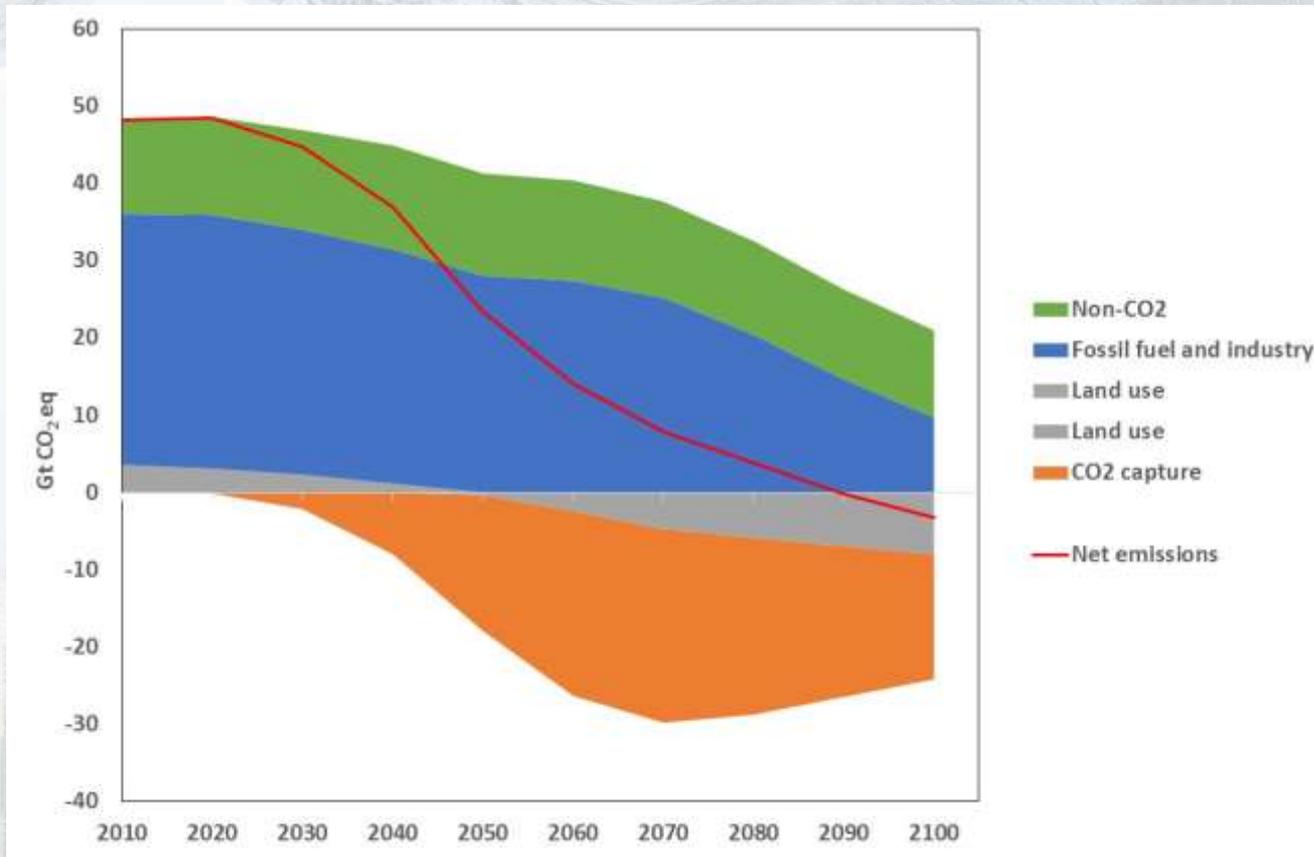
- Peaking
- Balancing sources and sinks
- Aggregation of efforts
  - Emission inventories (TFI)
  - Aggregation of NDCs
  - NDCs and the long-term aims
- Indicators

# Can we tell when emissions peak? Aggregate fossil fuel CO<sub>2</sub> emissions of 12 countries whose emissions peaked in the period 2001-2010



Source: based on IEA data

# Balancing sinks and sources and long-term low greenhouse gas emission development strategies (Article 4)



Note: one illustrative scenario with a 65% probability of getting below 2° C warming

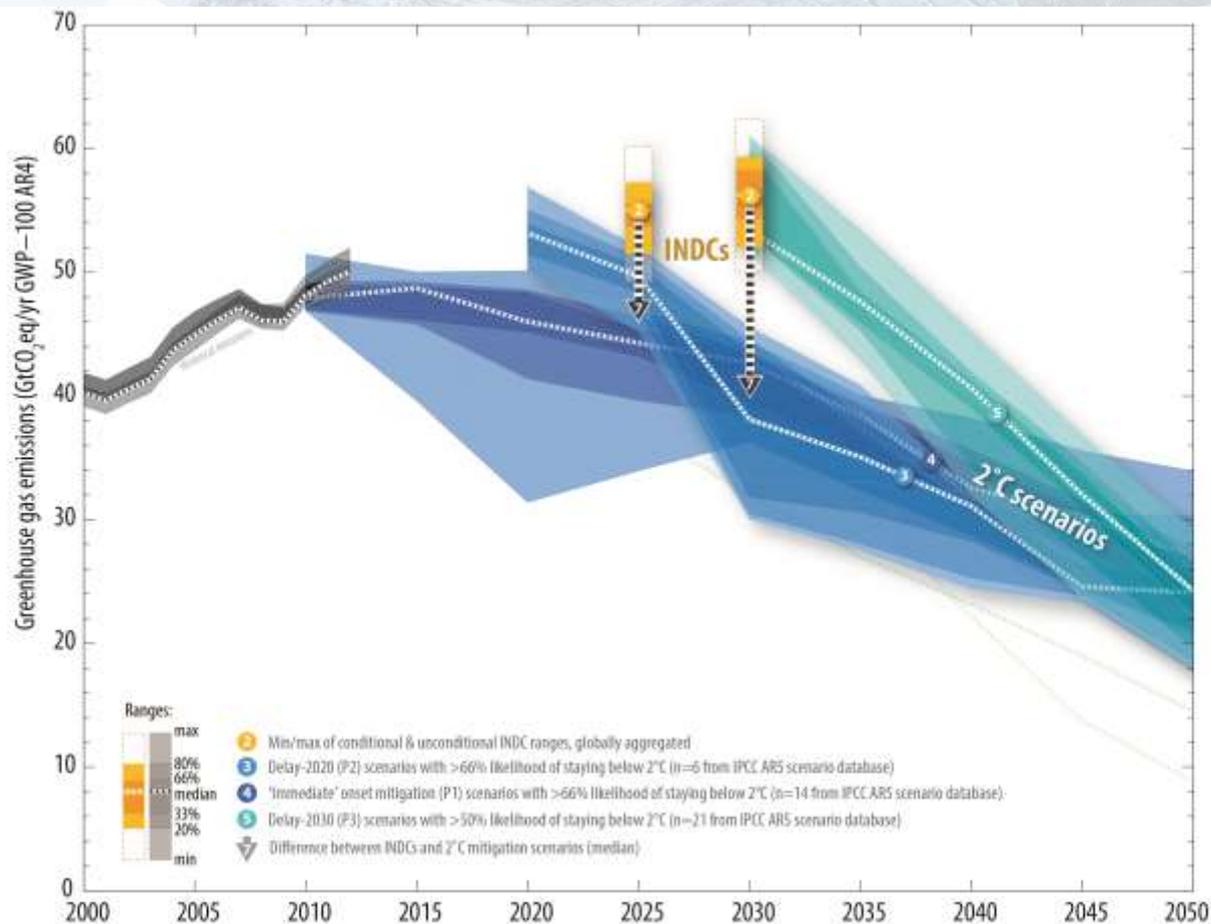
Source: derived from AR5 database

## Accounting issues in the aggregation of the NDCs

- Inventory issues
  - Uncertainties in inventory estimates
  - Use of different versions of the IPCC guidelines
  - Dynamic revision of inventories
- Aggregation of NDCs
  - Conditionality
  - Relative targets
  - Uncertainty and variety in auxiliary assumptions, regarding, for example, economic growth
  - Under- and over-achievement
- The transparency framework (Article 13)

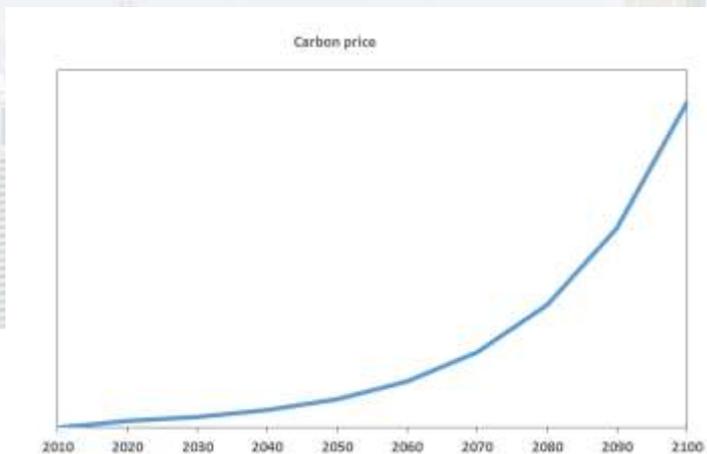
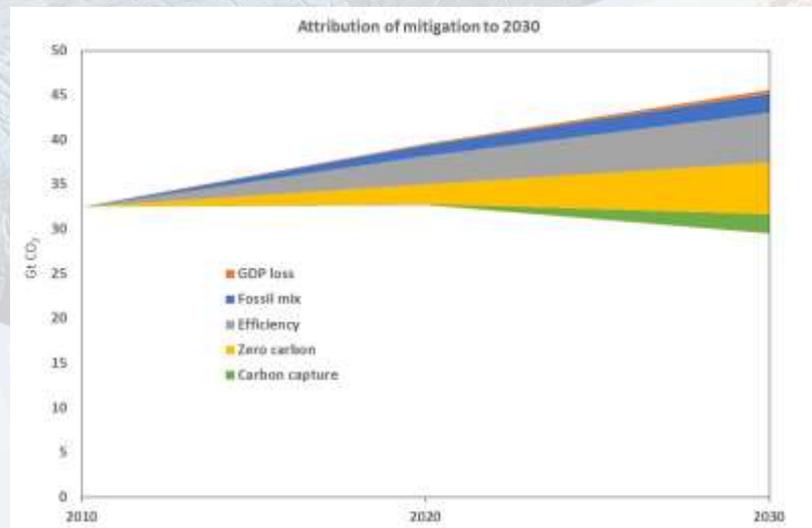
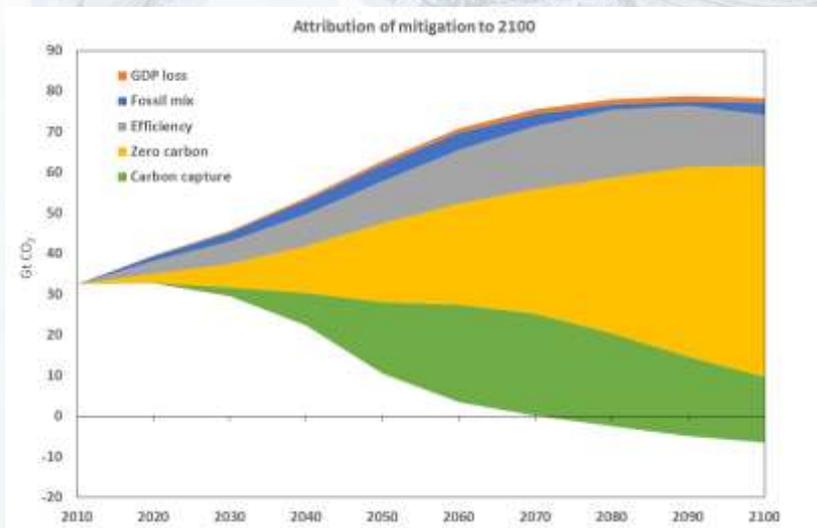
# Long-term aims and benchmarking against least-cost mitigation pathways

## What does “least-cost” imply?



Source: UNFCCC synthesis of INDCs

# What do deep dives into the AR5 scenarios tell us about pre- and post-2030?

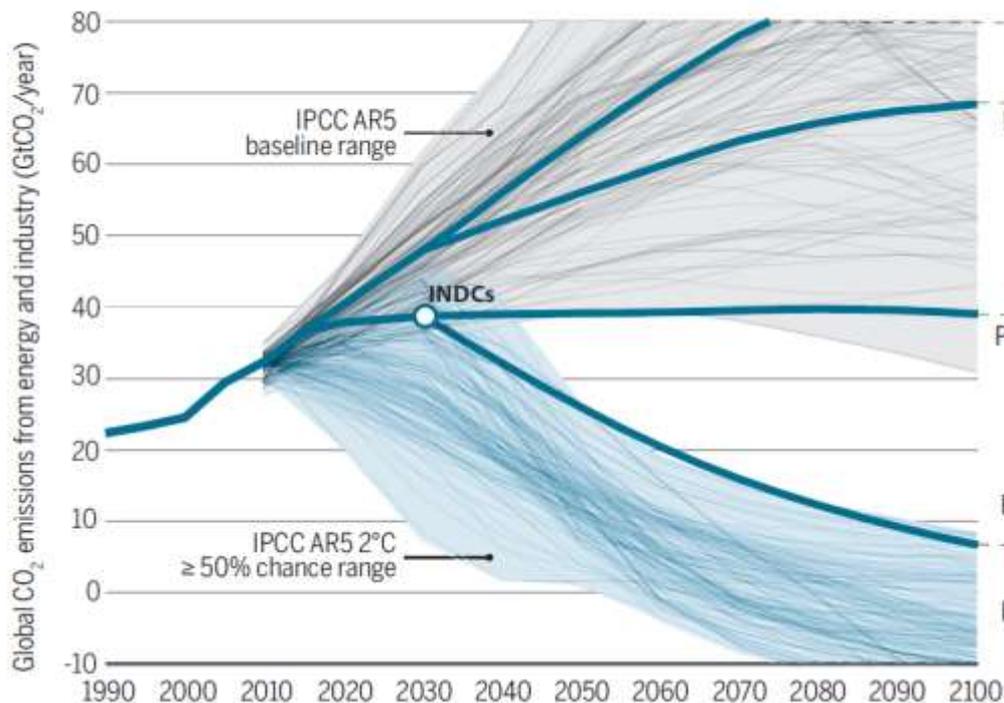


- This single scenario is: likely (65% probability) to get below 2° C by 2100; unlikely to get below 1.5° C (20% probability)
- The mix of mitigation measures beyond 2030 is different from that before 2030
- The level of effort, as measured by carbon price, needs to increase exponentially beyond 2030

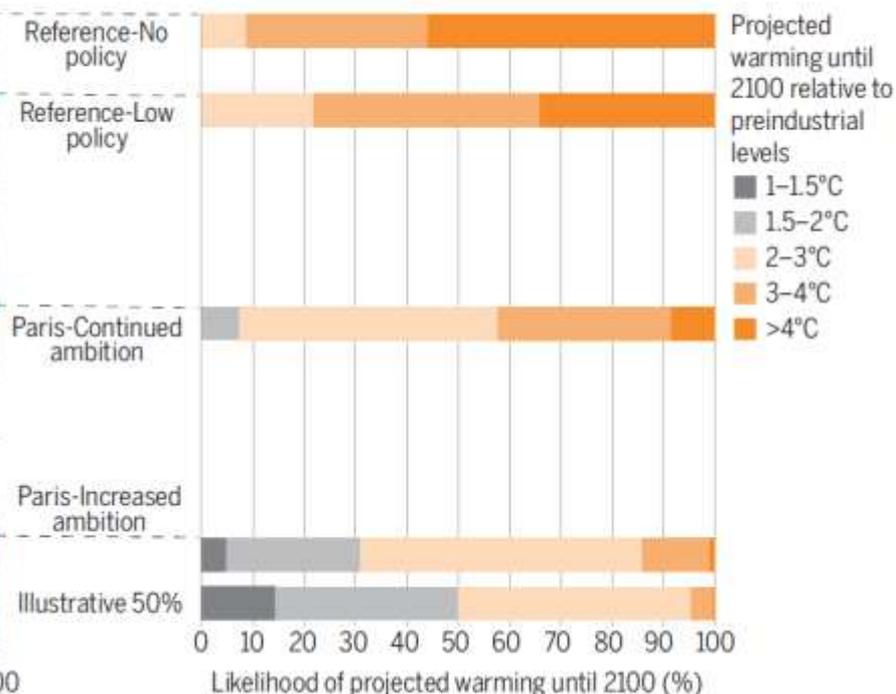
Source: derived from AR5 database

# On what path do the NDCs take us? What aspects of socio-economic development and ambition persist beyond 2030?

## A Emissions pathways



## B Temperature probabilities



Source: Fawcett et al., *Science*, 2015

## Beyond headline emission indicators: indicator options

- Macro-indicators
  - Sectoral emissions (AFOLU v energy); energy/GDP; contribution of non-fossil energy; decomposition and attribution of mitigation effort
- Technology indicators
  - Deployment of key technologies
  - Investment in R&D
  - Demonstration activities
- Financial flows
- Policy formation and implementation

***In the context of the transparency framework***

**Note:** some of these indicators are implicit in mitigation pathways and scenarios



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INTERGOVERNMENTAL PANEL ON climate change

