SIXTH ASSESSMENT REPORT
Working Group III – Mitigation

ipcc
INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP

IPCC 6th Assessment
Working Group III report on climate change mitigation

Pacific Climate Change Centre Webinar, 10 May 2022

Prof Frank Jotzo, ANU
Institute for Climate, Energy & Disasters Solutions, and Crawford School of Public Policy

Chapters

CHAPTER 1
Introduction and Framing
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CHAPTER 2
Emissions trends and drivers
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CHAPTER 3
Mitigation pathways compatible with long-term goals
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CHAPTER 4
Mitigation and development pathways in the near- to mid-term
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CHAPTER 5
Demand, services and social aspects of mitigation
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CHAPTER 6
Energy systems
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CHAPTER 7
Agriculture, Forestry, and Other Land Uses (AFOLU)
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CHAPTER 8
Urban systems and other settlements
DOWNLOAD

CHAPTER 9
Buildings
DOWNLOAD

CHAPTER 10
Transport
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CHAPTER 11
Industry
DOWNLOAD

CHAPTER 12
Cross sectoral perspectives
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CHAPTER 13
National and sub-national policies and institutions
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CHAPTER 14
International cooperation
DOWNLOAD

CHAPTER 15
Investment and finance
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CHAPTER 16
Innovation, technology development and transfer
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Climate Change 2022: Mitigation of Climate Change

The Working Group III report provides an updated global assessment of climate change mitigation progress and pledges, and examines the sources of global emissions. It explains developments in emission reduction and mitigation efforts, assessing the impact of national climate pledges in relation to long-term emissions goals.

Summary for Policymakers

The Summary for Policymakers (SPM) provides a high-level summary of the key findings of the Working Group III Report and is approved by the IPCC member governments line by line.

DOWNLOAD FIGURES

Technical Summary

The Technical Summary (TS) provides extended summary of key findings and serves as a link between the comprehensive assessment of the Working Group III Report and the concise SPM.

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Full Report

The 17 Chapters of the Working Group III Report assess the mitigation of climate change, examine the sources of global emissions and explain developments in emission reduction and mitigation efforts.

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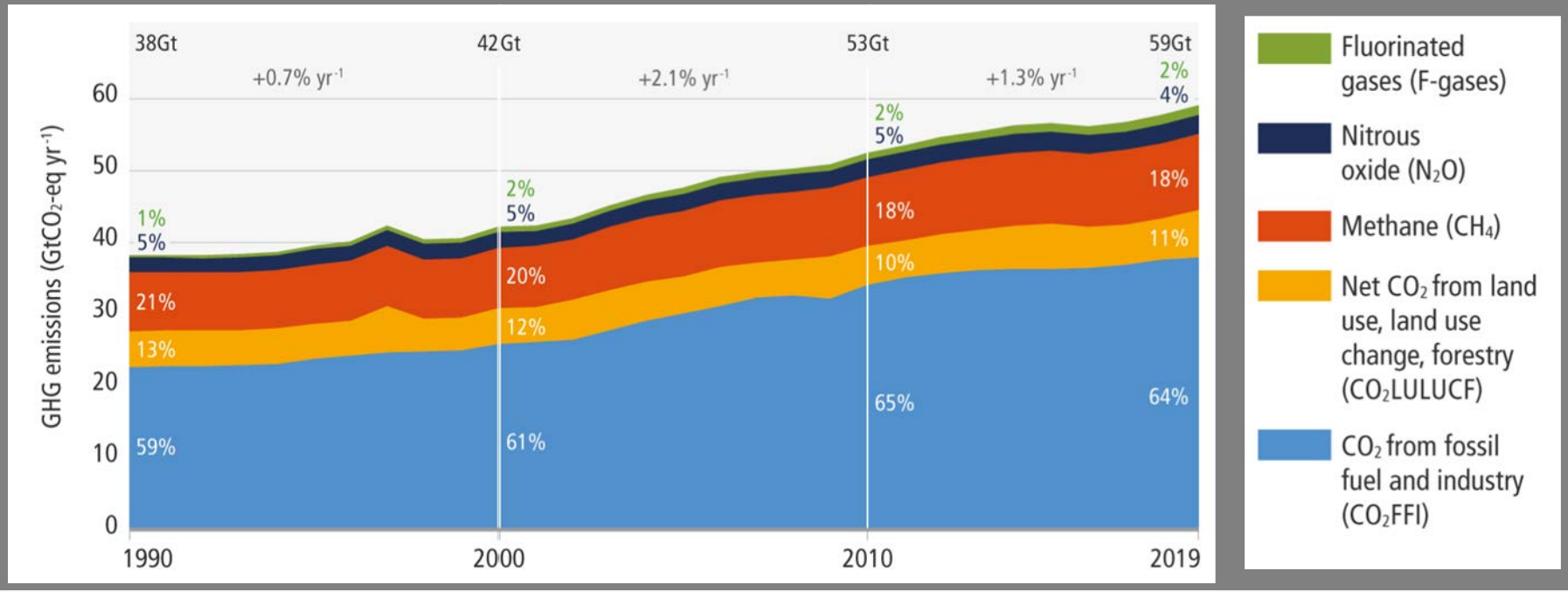
Comprehensive synthesis of the state of knowledge about

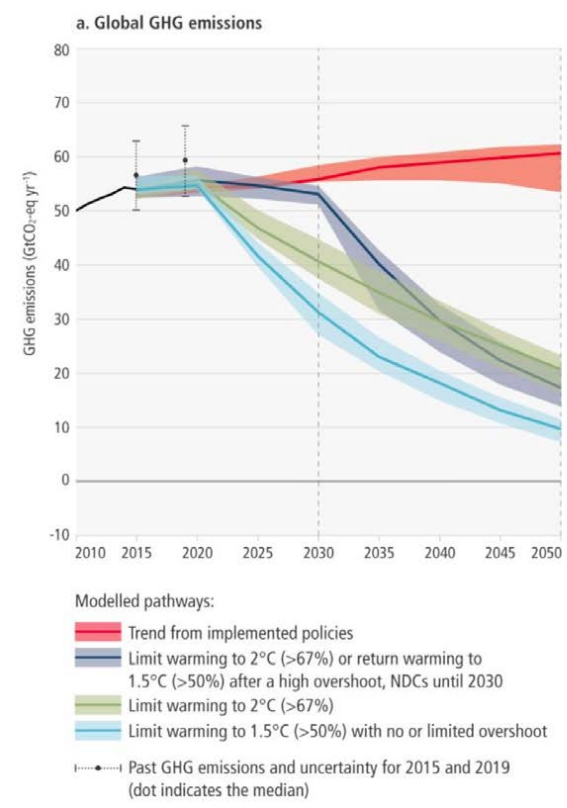
- **emissions trajectories,**
- **practical emissions reduction options,**
- **and ways to achieve them**

https://www.ipcc.ch/report/ar6/wg3/

We are not on track to limit warming to 1.5+°C
… but there is increasing action to reduce emissions, and 2°C (or lower) is possible



Projected global GHG emissions from NDCs announced prior to COP26 would make it likely that warming will exceed 1.5°C and also make it harder after 2030 to limit warming to below 2°C.



Limiting warming to 1.5 °C

- Global GHG reduced by (central case) 43% by 2030

Limiting warming to around 2°C

- Global GHG emissions reduced by (central case) 27% by 2030.

Very large potential globally to cut emissions

- Options for 50% emissions by 2030 identified at cost <US$100/tCO2-eq

Large potential at very low costs

- Half of this at cost <US$20/tCO2-eq

This assumes all emissions reductions options, everywhere, are implemented

*Cost estimates **exclude** benefits from avoided climate change, and co-benefits eg air quality (or adverse side-effects)*

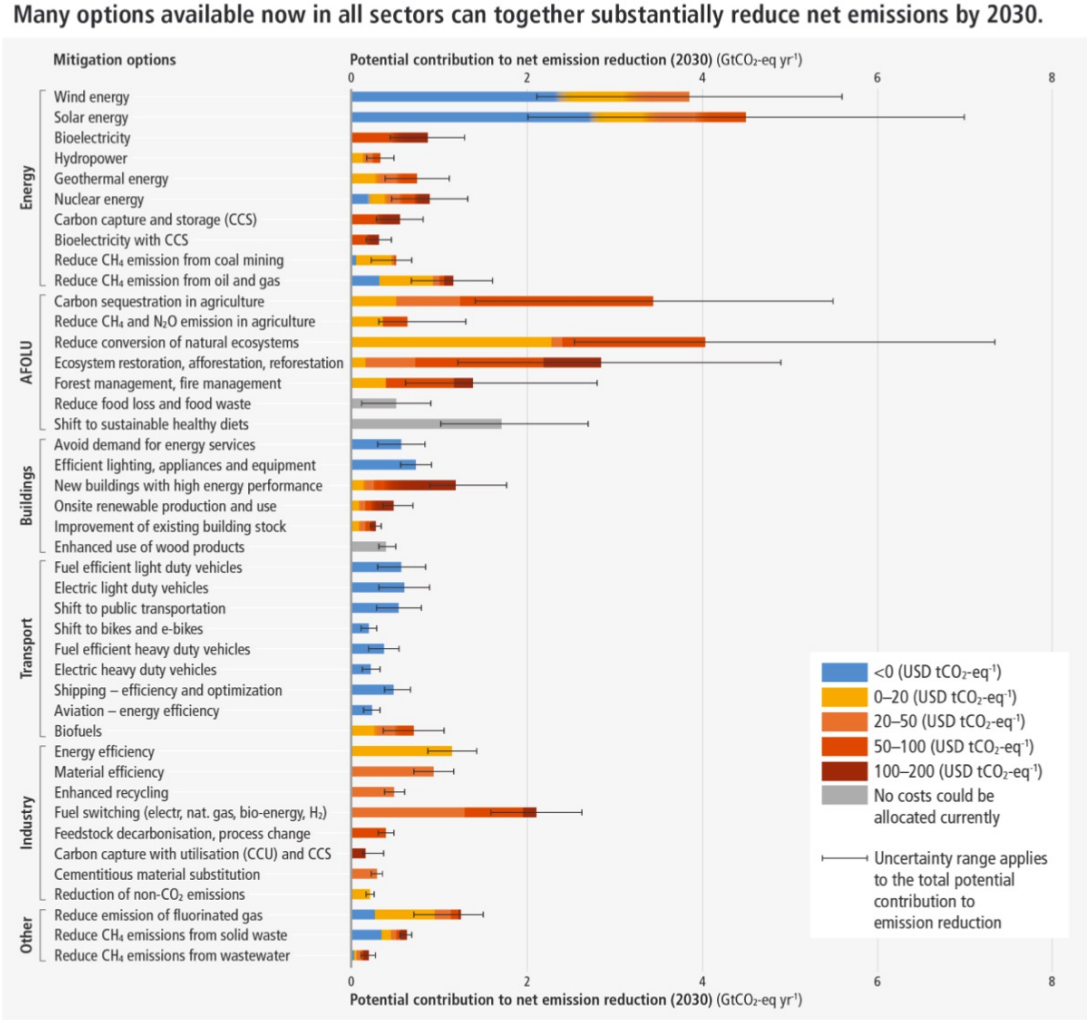
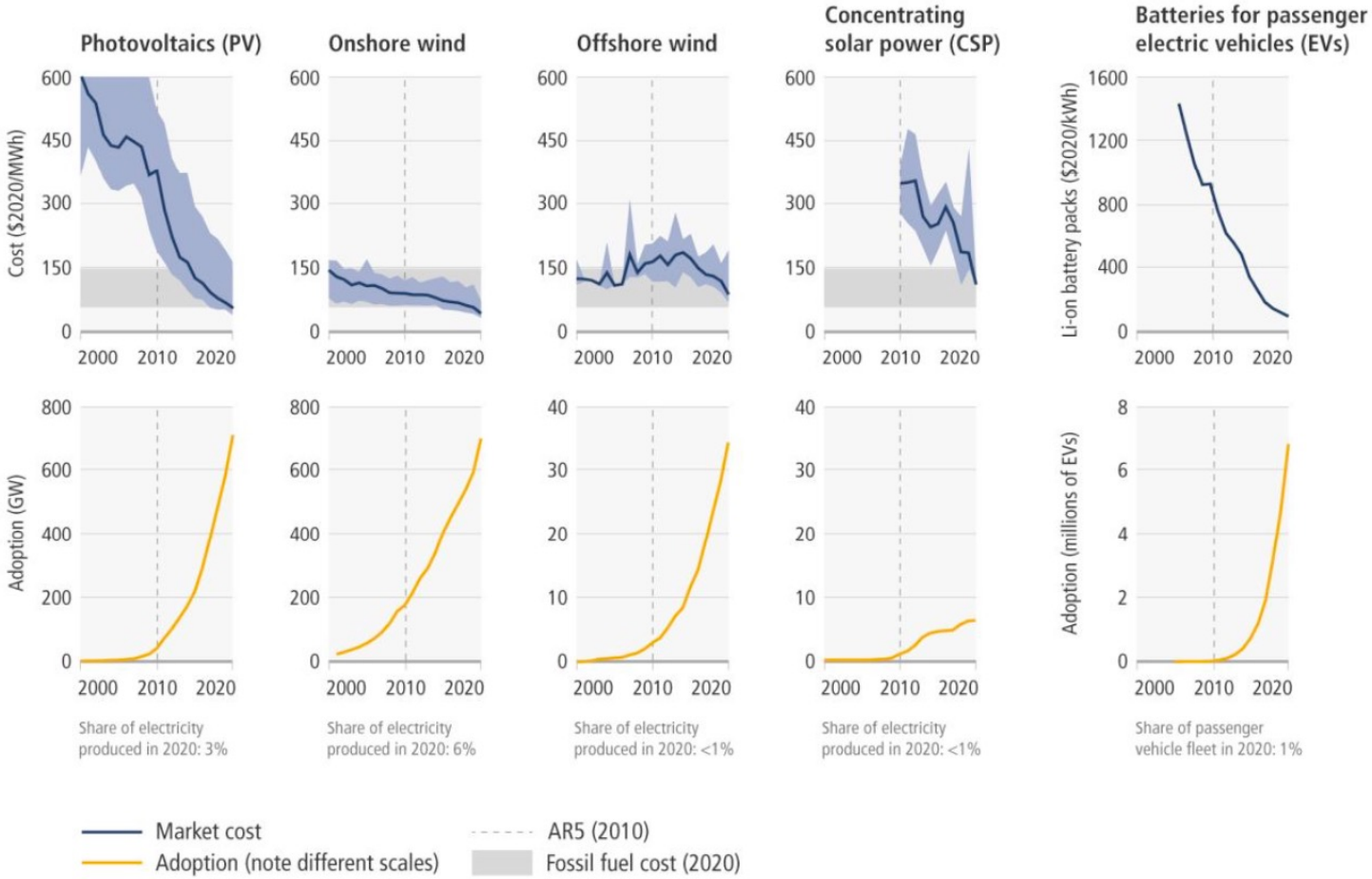


Figure SPM.7: Overview of mitigation options and their estimated ranges of costs and potentials in 2030

Lower costs of key technologies a key enabler of decarbonisation

- A more positive outlook because of progress with zero-emissions technologies
- Innovation support, dissemination of clean technologies

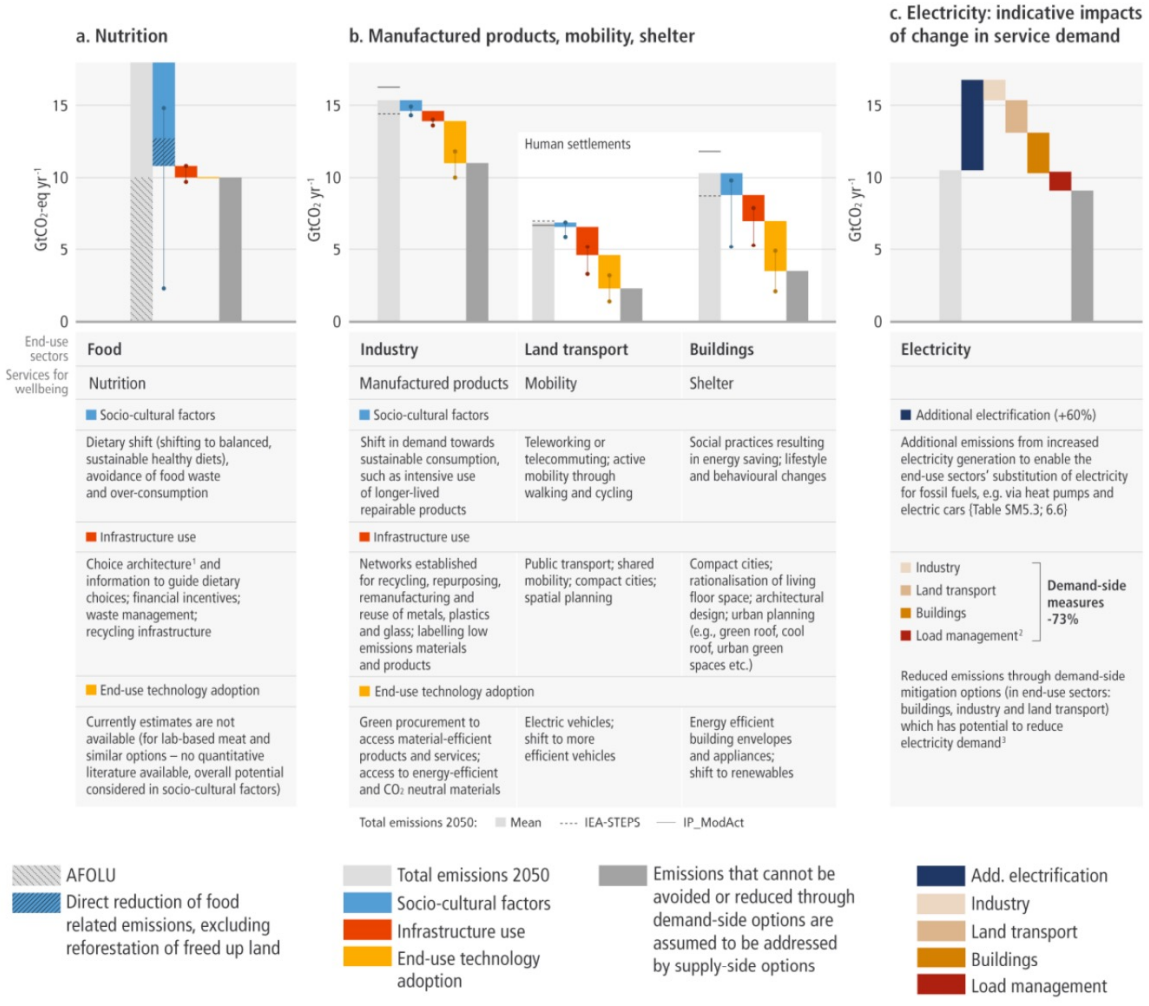
The unit costs of some forms of renewable energy and of batteries for passenger EVs have fallen, and their use continues to rise.



Demand-side options

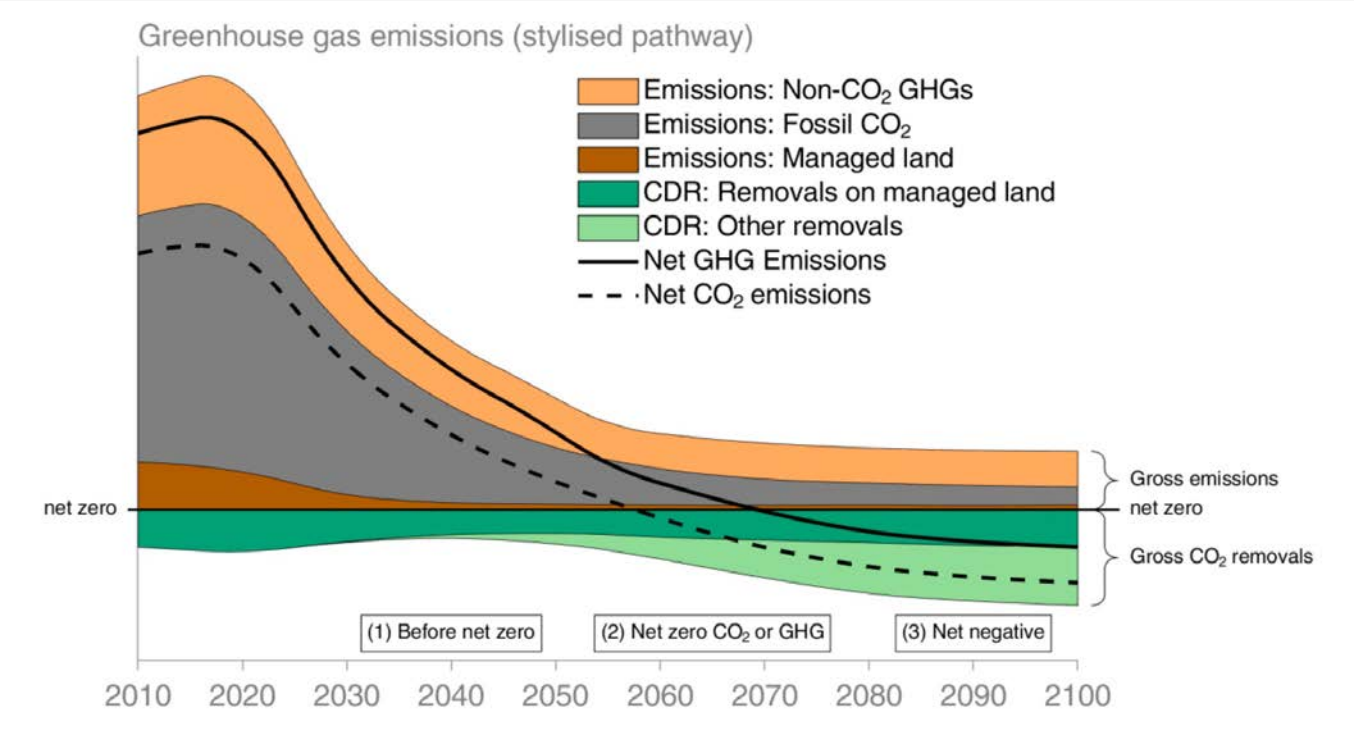
- Changes in diets
- Shifts in demand for products
- Energy savings in cities/buildings
- Changes in mobility
- Infrastructure as an enabler of demand-side emissions savings

Demand-side mitigation can be achieved through changes in socio-cultural factors, infrastructure design and use, and end-use technology adoption by 2050.



Carbon dioxide removal (‘negative emissions’): an integral part of mitigation trajectories

Net zero emissions means some remaining emissions, counterbalanced by carbon dioxide removal



Cross-Chapter Box 8, Figure 2 (Ch12): Roles of CDR in global or national mitigation strategies. Stylised pathways showing multiple functions of CDR in different phases of ambitious mitigation

Enablers and barriers: a complex picture in practice

Report provides evaluation across all mitigation options, sector-by-sector

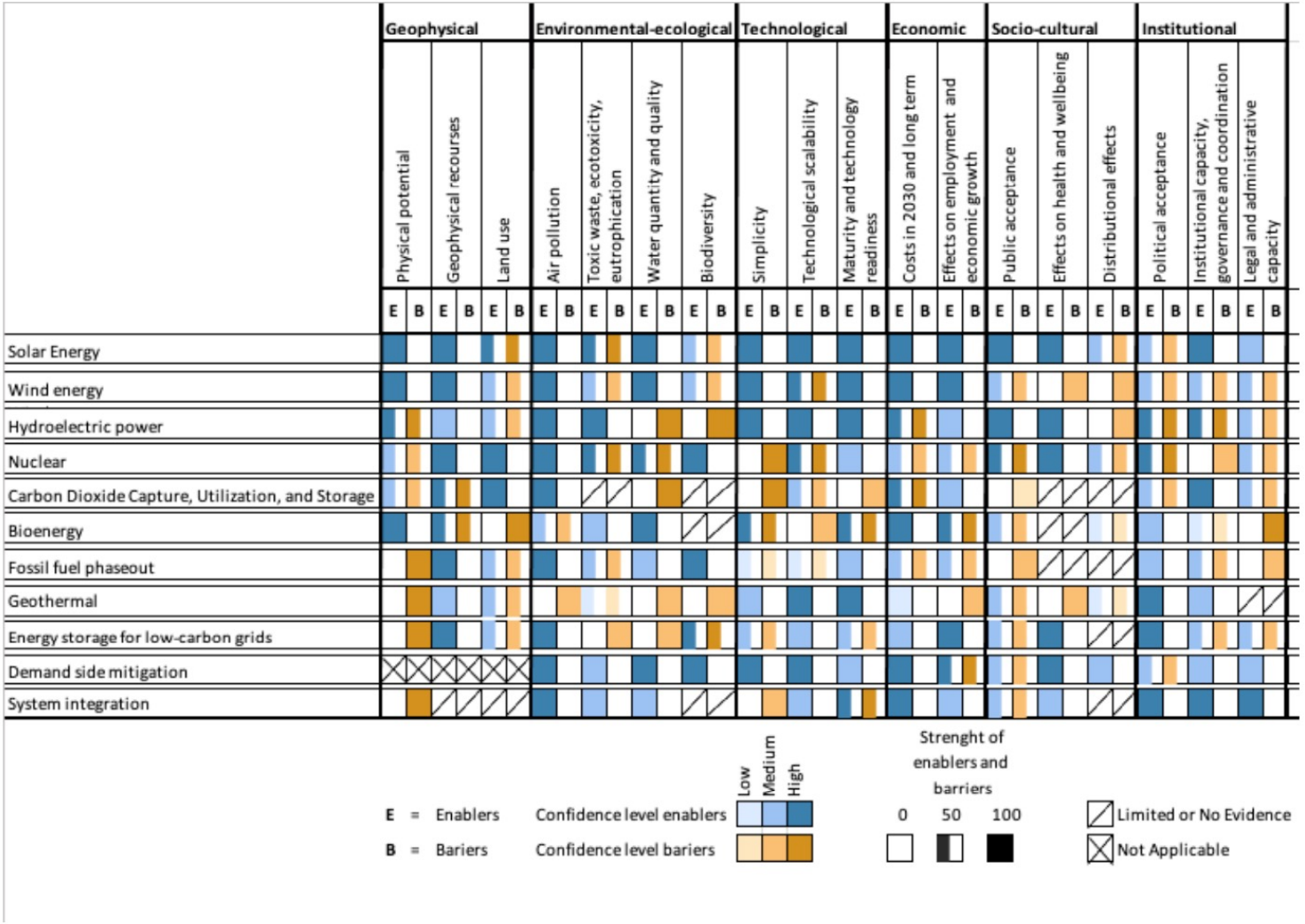
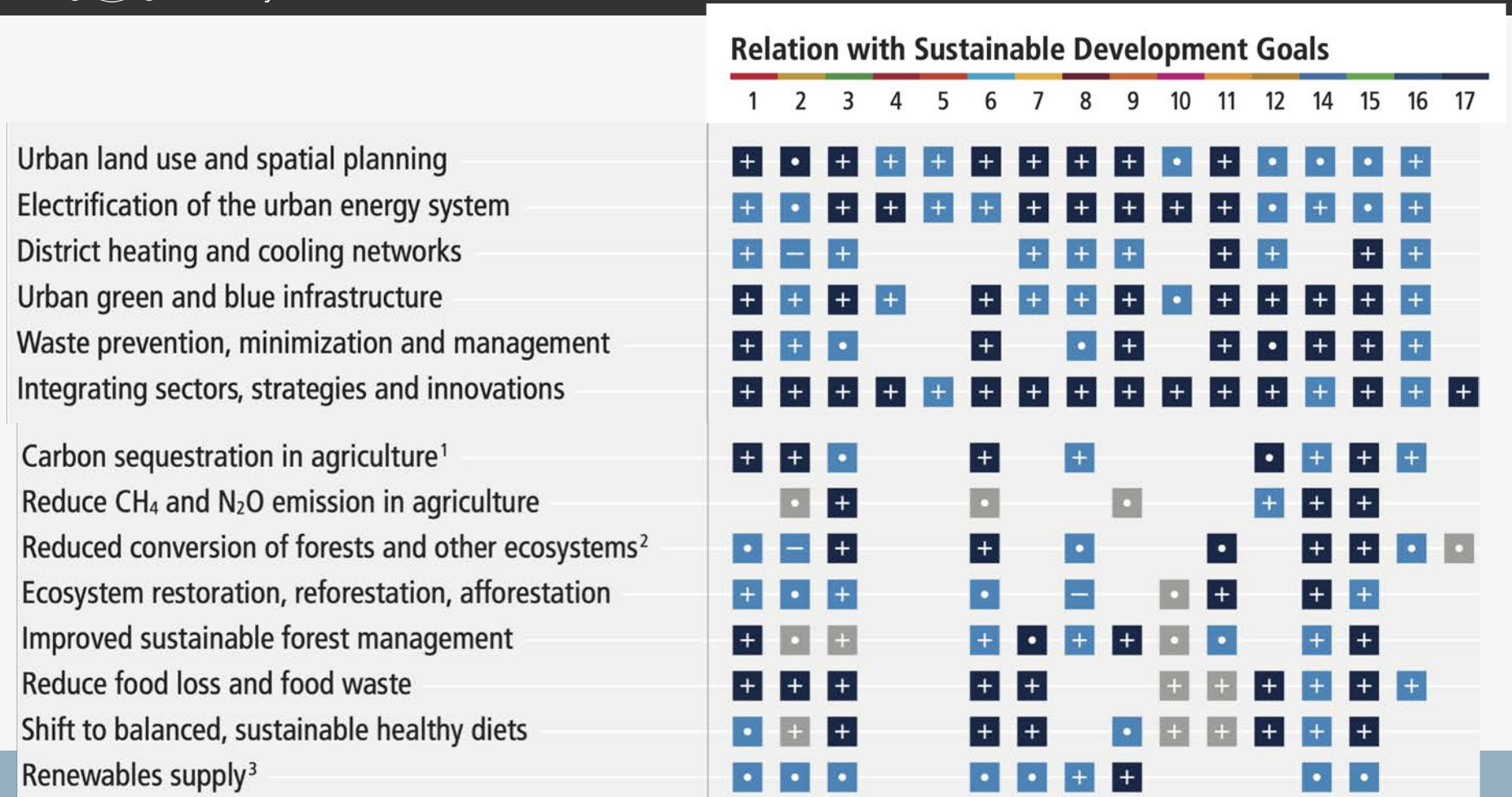


Figure 6.19 Summary of the extent to which different factors would enable or inhibit the deployment of mitigation options in energy systems


SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

Mitigation options in urban areas, and agriculture: relation with SDGs



Climate Finance “a critical enabling factor for the low carbon transition”

“Investors, central banks, and financial regulators are driving increased awareness of climate risk” which can ” support climate policy development and implementation”

“Delayed climate investments and financing […] will result in significant carbon lock-ins, stranded assets, and other additional costs.”

“Progress on the alignment of financial flows with low GHG emissions pathways remains slow. There is a climate financing gap which reflects a persistent misallocation of global capital.”

The finance gap is large (3-6 times current flows for mitigation)

Investment needs to be greatly scaled up … esp in developing countries

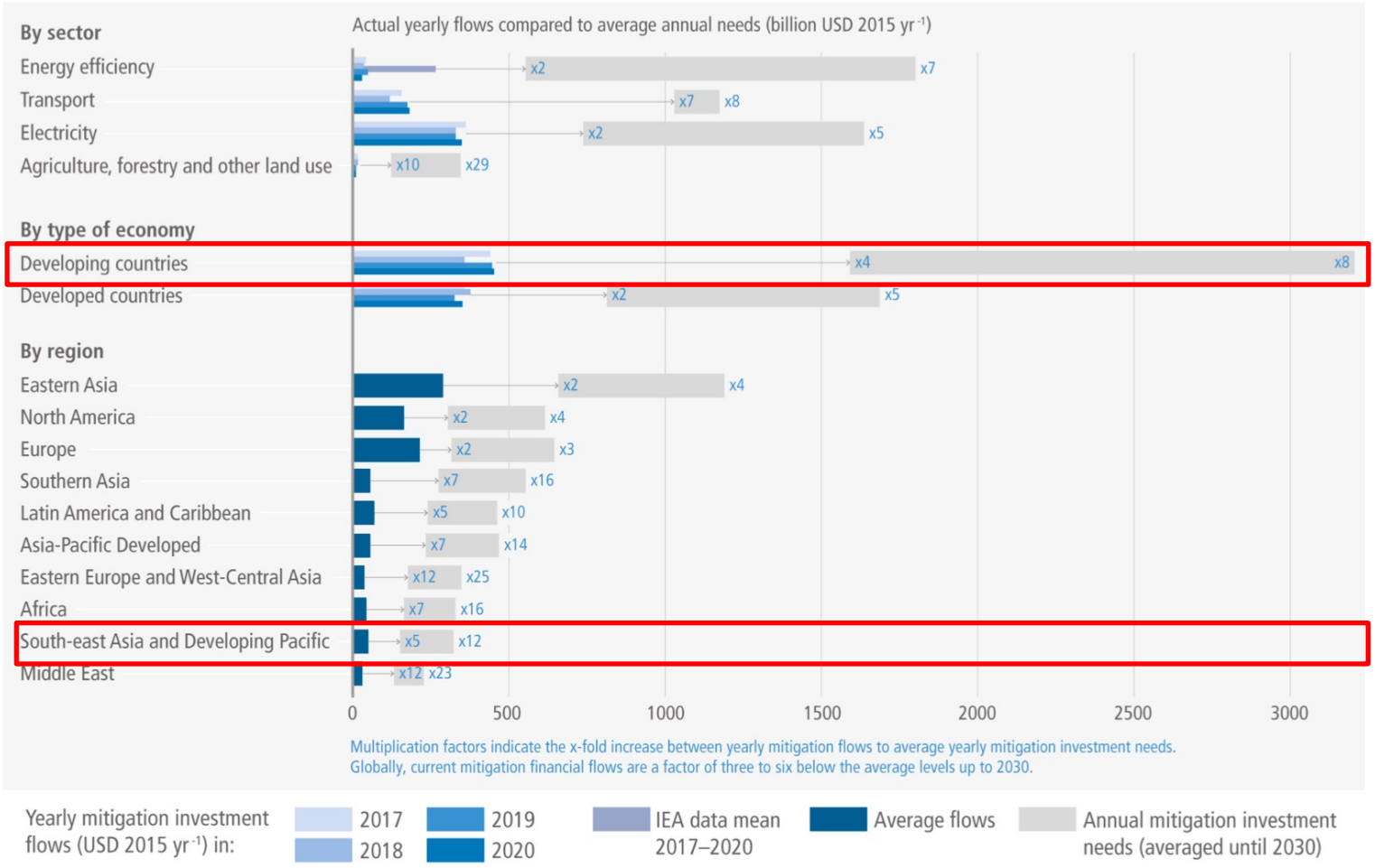


Figure TS.25: Mitigation investment flows fall short of investment needs across all sectors and types of economy, particularly in developing countries.

International cooperation has positive effects

Participation in international agreements and transboundary networks is associated with the adoption of climate policies at the national and sub-national levels, as well as by non-state actors

Conflicting views whether Paris Agreement will achieve its stated goals

Important roles for international cooperation outside of UNFCCC process

Strengthening international cooperation, for sustainable development and equity

Policies and institutions enable effective GHG mitigation

Coverage of emissions through policies and climate laws is rapidly rising

Successful implementation, Practical experience with design & implementation

A range of complementary policy instruments, in "**policy packages**":

- Economic instruments: esp emissions trading, carbon pricing
  - efficient coverage of lower-cost options
- Regulatory instruments: for specific objectives/sectors
  - For higher cost options, or where pricing instruments do not work
- Mitigation subsidies and R&D support, fossil fuel subsidy removal, information policies…

Overarching objectives

Equity/distributional concerns

- support low income groups, eg through revenue re-distribution

Sustainable development and other objectives –

- ‘shifting development pathways’, linking in with SDGs
- climate policy = sound economic and social policy

Australian National University

Prof Frank Jotzo
ANU Institute for Climate, Energy and Disaster Solutions
frank.jotzo@anu.edu.au
@frankjotzo

Lead author and author of synthesis report, IPCC WGIII 6AR