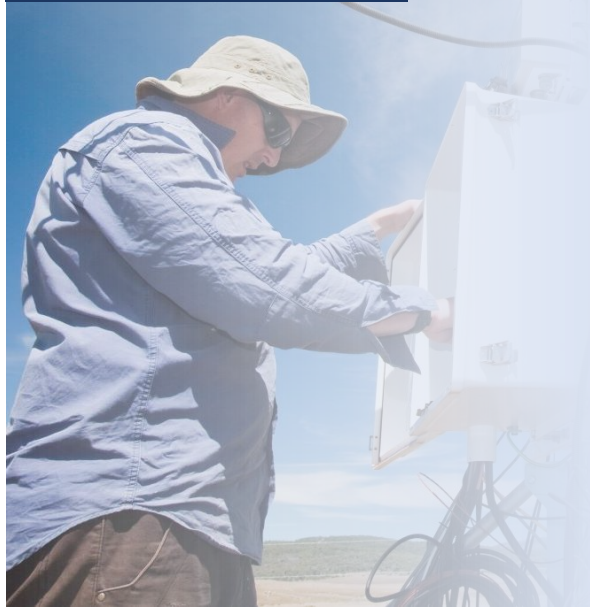


Where are we now?

Since pre-industrial times, human activities have caused approximately 1°C of global warming.

- Already seeing consequences for people, nature and livelihoods
- At current rate, would reach 1.5°C between 2030 and 2052
- Past emissions alone do not commit the world to 1.5°C



Ashley Cooper / Aurora Photos

Joy Jacqueline Pereira
SEADPRI-Universiti Kebangsaan Malaysia & IPCC WG II Vice Chair

Impacts of global warming 1.5°C

(At 1.5°C compared to 2°C)

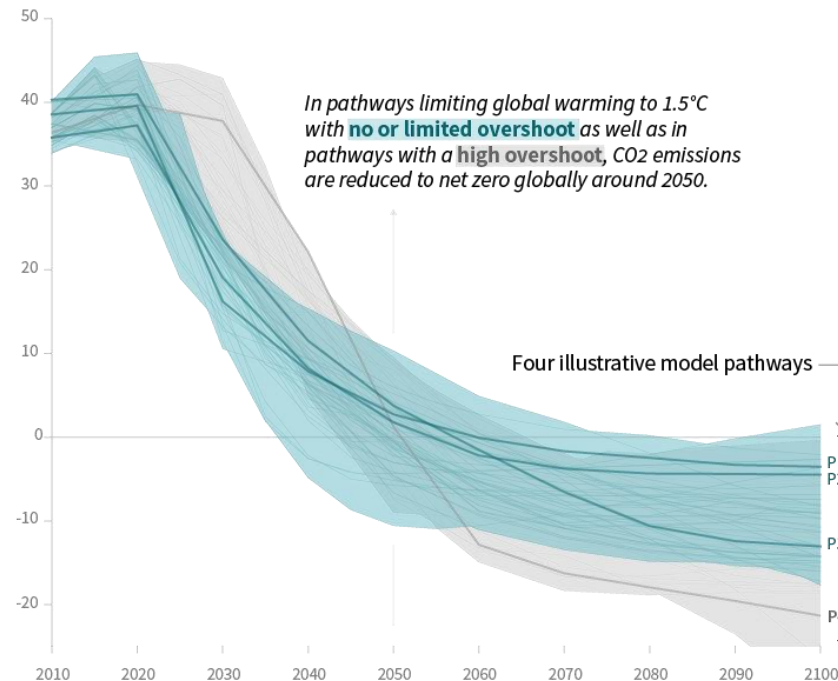
- Less extreme weather where people live, including extreme heat and rainfall
- By 2100, global mean sea level rise will be around 10 cm lower but may continue to rise for centuries
- 10 million fewer people exposed to risk of rising seas
- Lower impact on biodiversity and species
- Smaller reductions in yields of maize, rice, wheat
- Global population exposed to increased water shortages is up to 50% less
- Lower risk to fisheries and the livelihoods that depend on them
- Up to several hundred million fewer people exposed to climate-related risk and susceptible to poverty by 2050

Tropical Southeast Asia: projected to experience the largest impacts on economic growth

SPM3a | Global emissions pathway characteristics

Global total net CO₂ emissions

Billion tonnes of CO₂/yr



Timing of net zero CO₂
Line widths depict the 5-95th percentile and the 25-75th percentile of scenarios

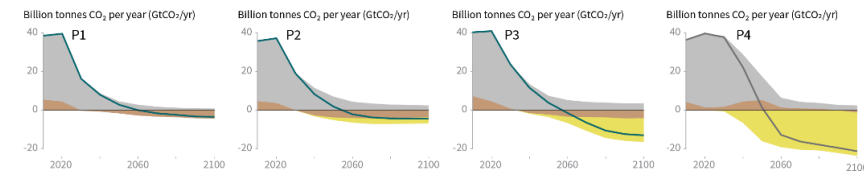
Pathways limiting global warming to 1.5°C with no or low overshoot

Pathways with high overshoot

Pathways limiting global warming below 2°C
(Not shown above)

Breakdown of contributions to global net CO₂ emissions in four illustrative model pathways

● Fossil fuel and industry ● AFOLU ● BECCS



P1: A scenario in which social, business and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the global South. A downsized energy system enables rapid decarbonization of energy supply. Afforestation is the only CDR option considered; neither fossil fuels with CCS nor BECCS are used.

P2: A scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for BECCS.

P3: A middle-of-the-road scenario in which societal as well as technological development follows historical patterns. Emissions reductions are mainly achieved by changing the way in which energy and products are produced, and to a lesser degree by reductions in demand.

P4: A resource- and energy-intensive scenario in which economic growth and globalization lead to widespread adoption of greenhouse-gas-intensive lifestyles, including high demand for transportation fuels and livestock products. Emissions reductions are mainly achieved through technological means, making strong use of CDR through the deployment of BECCS.

Indicator	
CO ₂ emissions in 2050 (% change)	-93
Renewable share of electricity (%)	77
Primary energy from coal (% change)	-97
Primary energy from oil (% change)	-87
Primary energy from gas (% change)	-74
Cumulative CCS/BECCS to 2100 (GtCO ₂)	0
Land for bio-energy (Mha)	22
Agricultural methane (% change)	-33

Indicator	
CO ₂ emissions in 2050 (% change)	-97
Renewable share of electricity (%)	70
Primary energy from coal (% change)	-97
Primary energy from oil (% change)	-32
Primary energy from gas (% change)	-48
Cumulative CCS/BECCS to 2100 (GtCO ₂)	1216
Land for bio-energy (Mha)	724
Agricultural methane (% change)	2



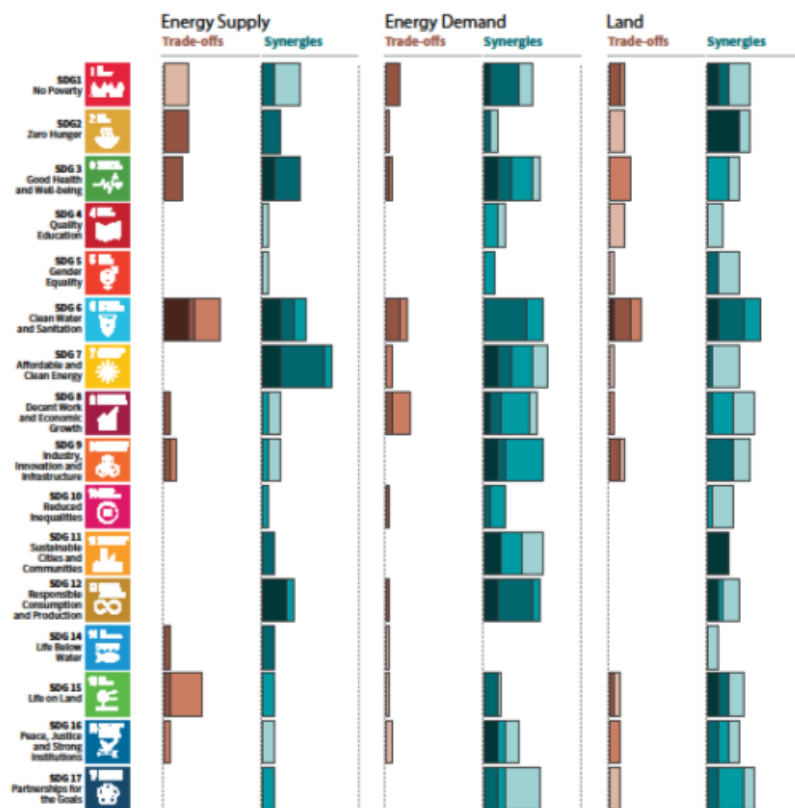
Neil Emmerson / Aurora Photos

Greenhouse gas emissions pathways

- Global carbon **emissions peak before 2030** in all pathways compatible with 1.5°C warming
- Emissions of **carbon dioxide fall by 45% by 2030**, reaching **net zero around 2050**, with deep cuts in methane and other emissions
- **Ethical and fair transitions**
- Limiting global warming to 1.5°C is not impossible, but **political and societal will** to accelerate transitions is key
- Limiting warming to 1.5°C would require changes on an unprecedented scale
 - Deep emissions cuts in all sectors
 - A range of technologies
 - Behavioural changes
 - Increased investment in low carbon options

SPM4 | Indicative linkages between mitigation and sustainable development using SDGs

Length shows strength of connection



The overall **size of the coloured bars** depict the **relative potential** for synergies and trade-offs between the sectoral mitigation options and the SDGs.

Shades show level of confidence



The shades depict the level of confidence of the assessed potential for **Trade-offs/Synergies**

Very high

Low

• Every bit of warming matters •

• Every year matters •

• Every choice matters •