Climate Change 2022: Mitigation of Climate Change

…un anno dopo…

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RFF CMCC European Institute on Economics and the Environment

2D4D Disruptive Digitalization For Decarbonization

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Climate Change 2022

Mitigation of Climate Change

[Matt Bridgestock, Director and Architect at John Gilbert Architects]

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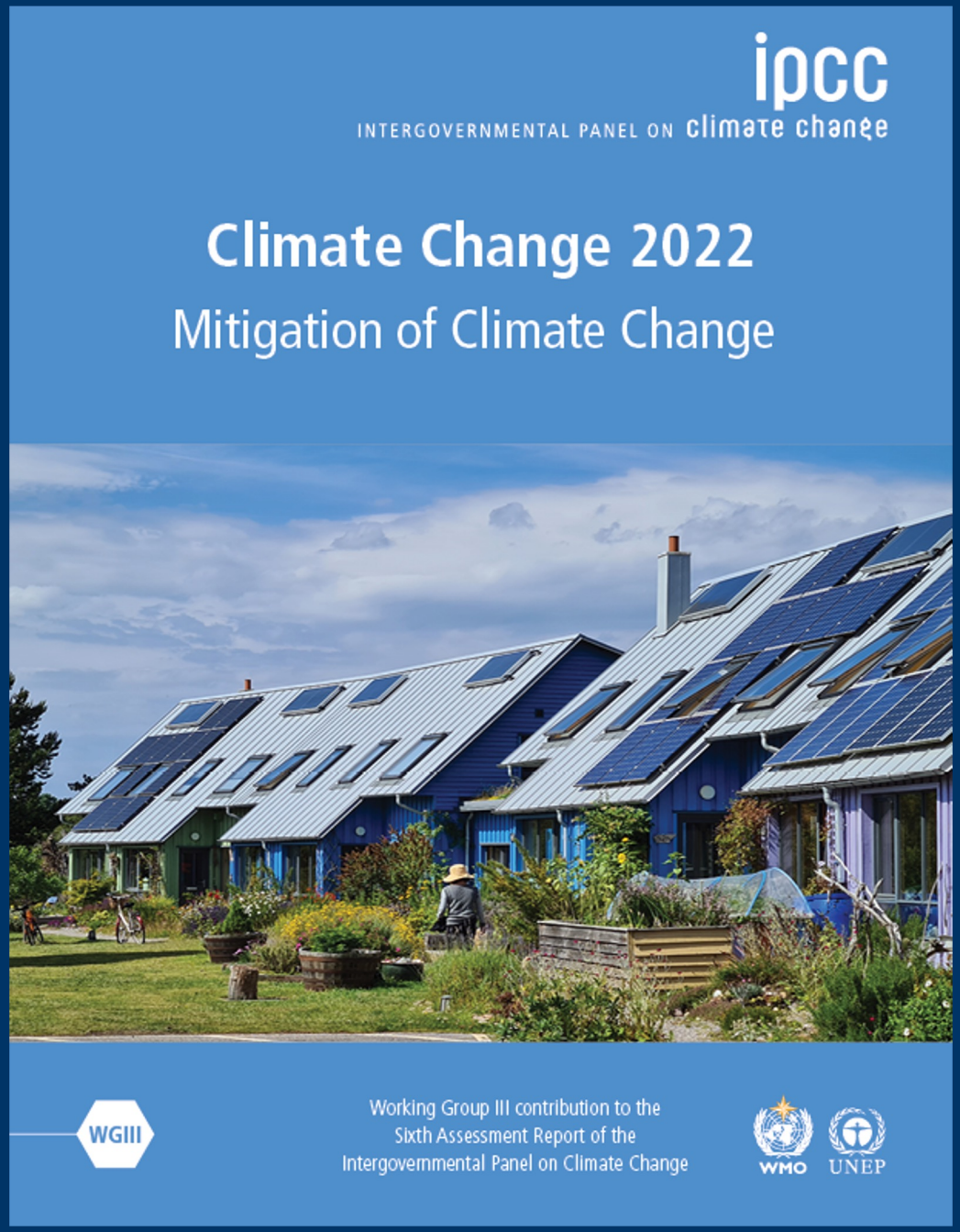
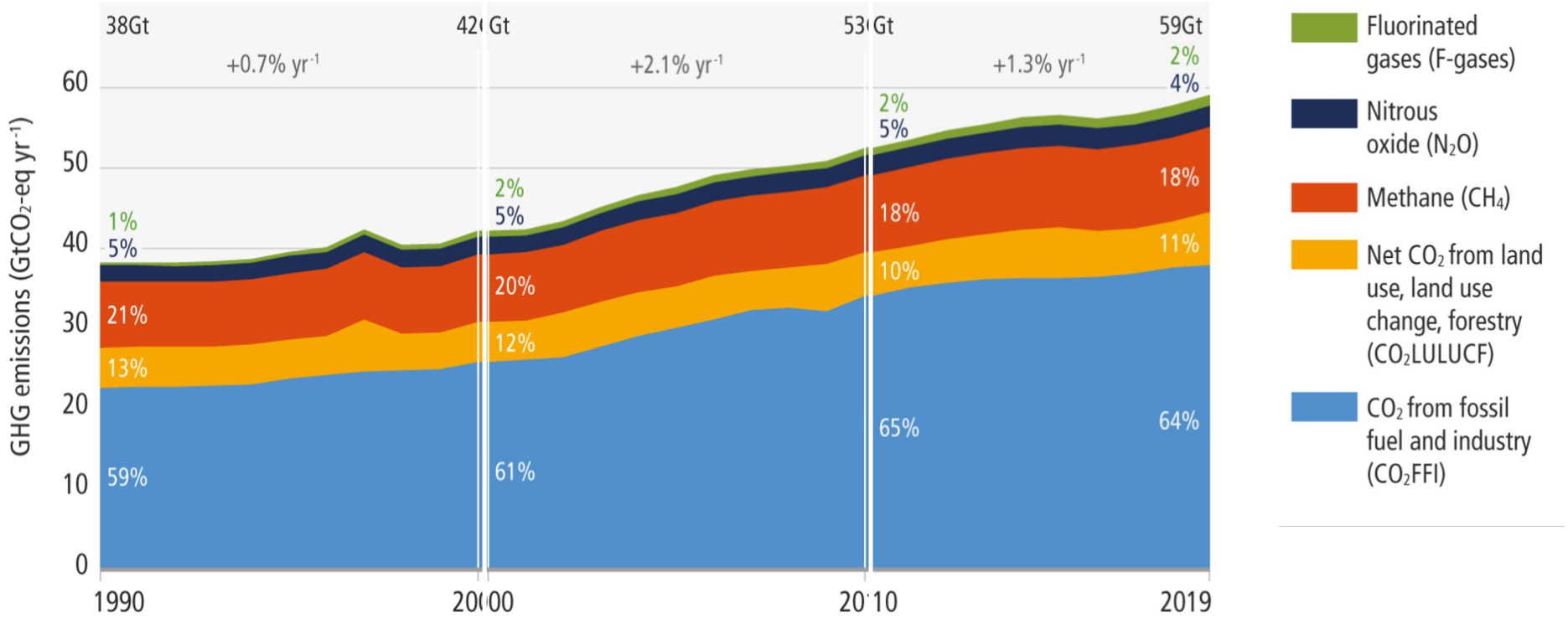


[Matt Bridgestock, Director and Architect at John Gilbert Architects]

Reperto 1a: Le emissioni

Non siamo sulla strada giusta per limitare l'aumento della temperatura a 1.5 °C

Le emissioni sono aumentate in tutti i settori, ma in maniera non uniforme



Reperto 1b: MA ….. le azioni per il clima aumentano

Alcuni paesi hanno ridotto le emissioni pur continuando a crescere

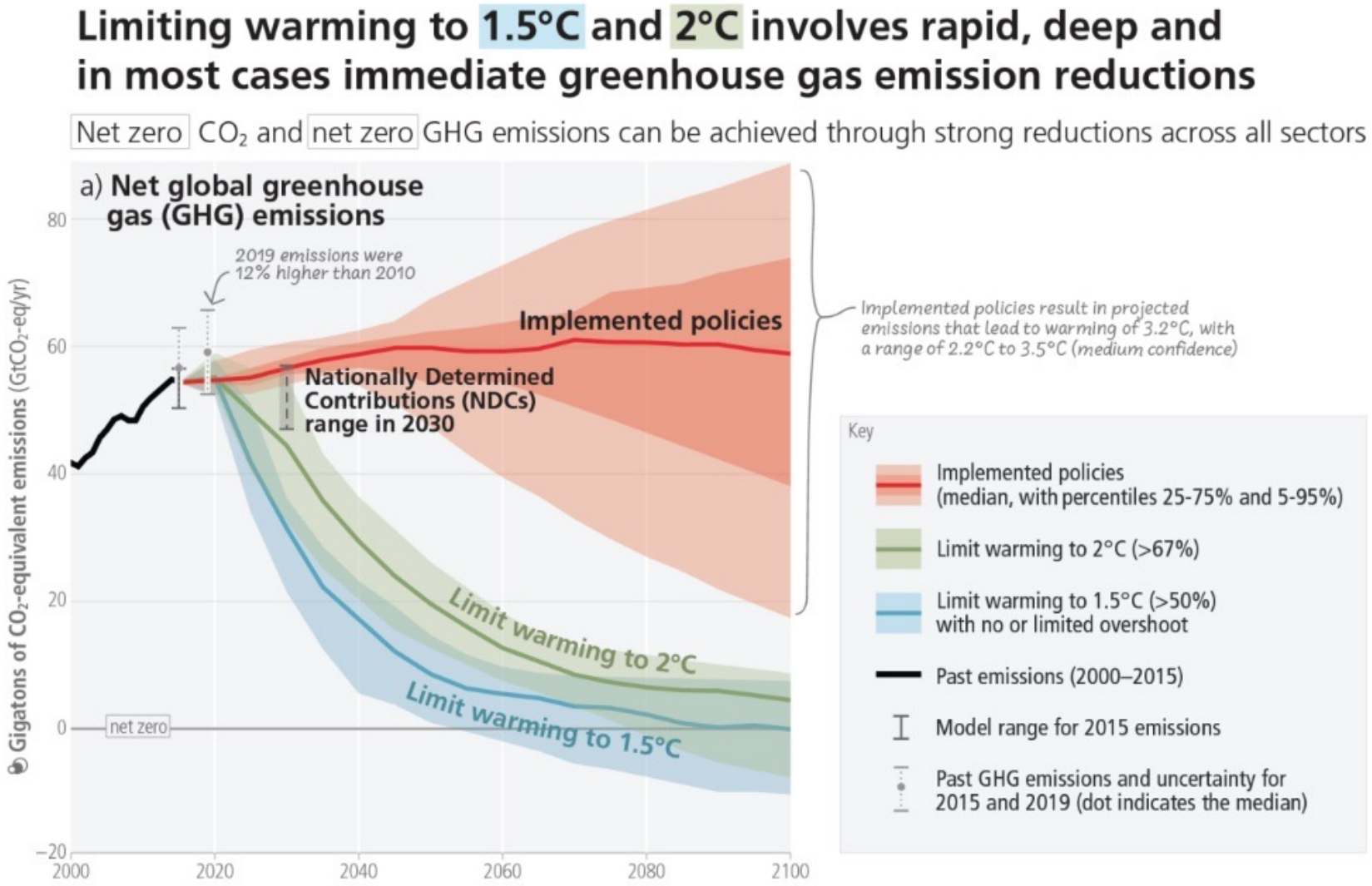
Obiettivi di zero emissionsi sono stati adottati dal almeno **826 città e 103 regioni**

Reperto 2a: tecnologie e soluzioni

Abbiamo ORA molte tecnologie e soluzioni disponibili in tutti i settori per ridurre le emissioni in modo significativo *(la loro rilevanza varia nei diversi settori)*

Politiche ed investimenti mirati sono stati in grado di promuovere innovazione (tecnological e sociale), riduzione dei costi, e diffusione. I paesi in via di sviluppo, particolarmente quelli più poveri, rimangono (notevolmente) indietro.

Reperto 2b: EPPURE ….. i contributi promessi non sono abbstanza

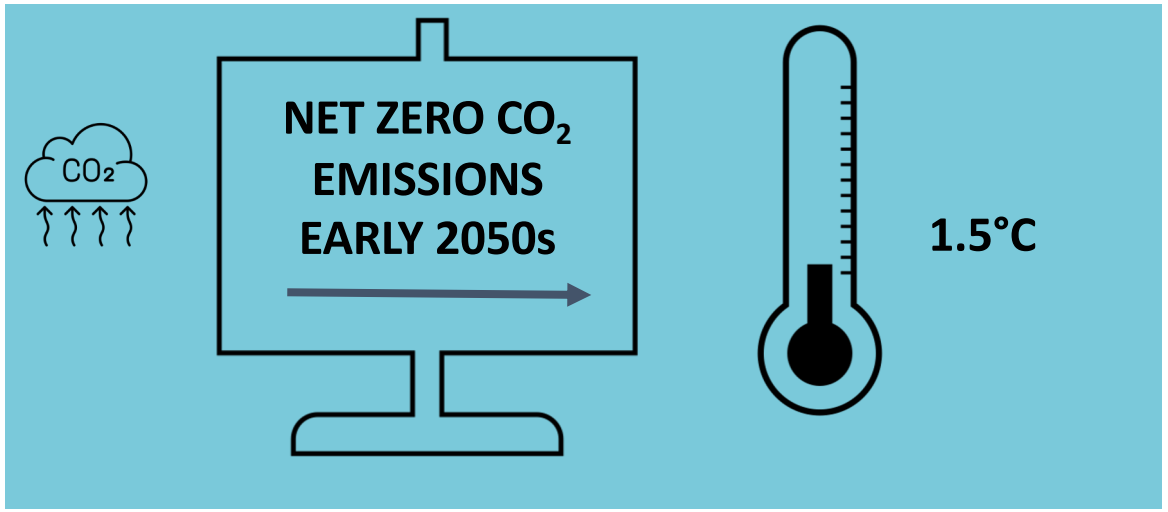


IPCC AR6 SYR
Figura 5.

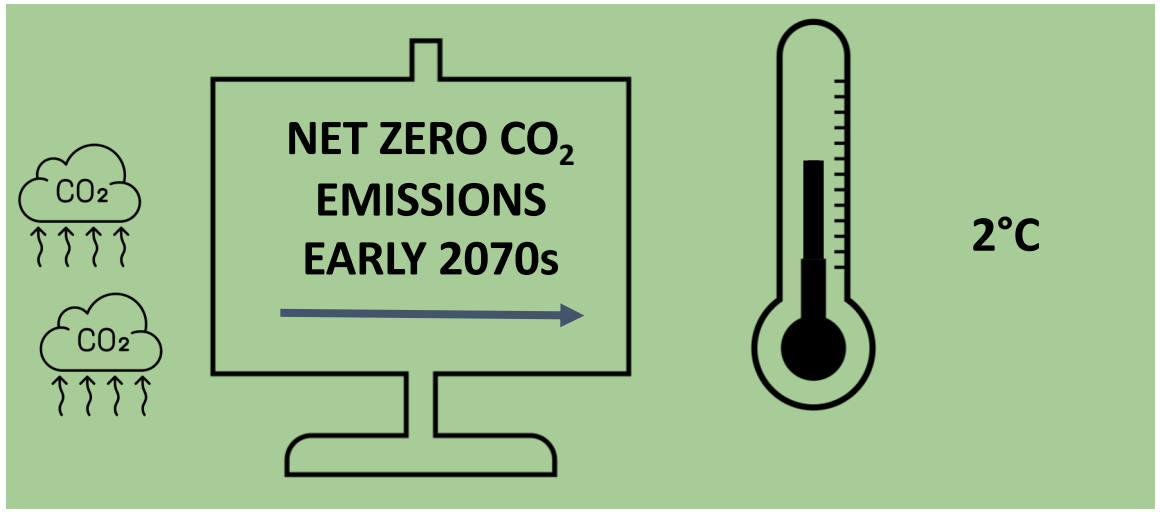
Reperto 3: L'importanza dello zero netto

La temperatura **si stabilizzerà** quando si raggiungerà allo "zero netto"

(based on IPCC-assessed scenarios)



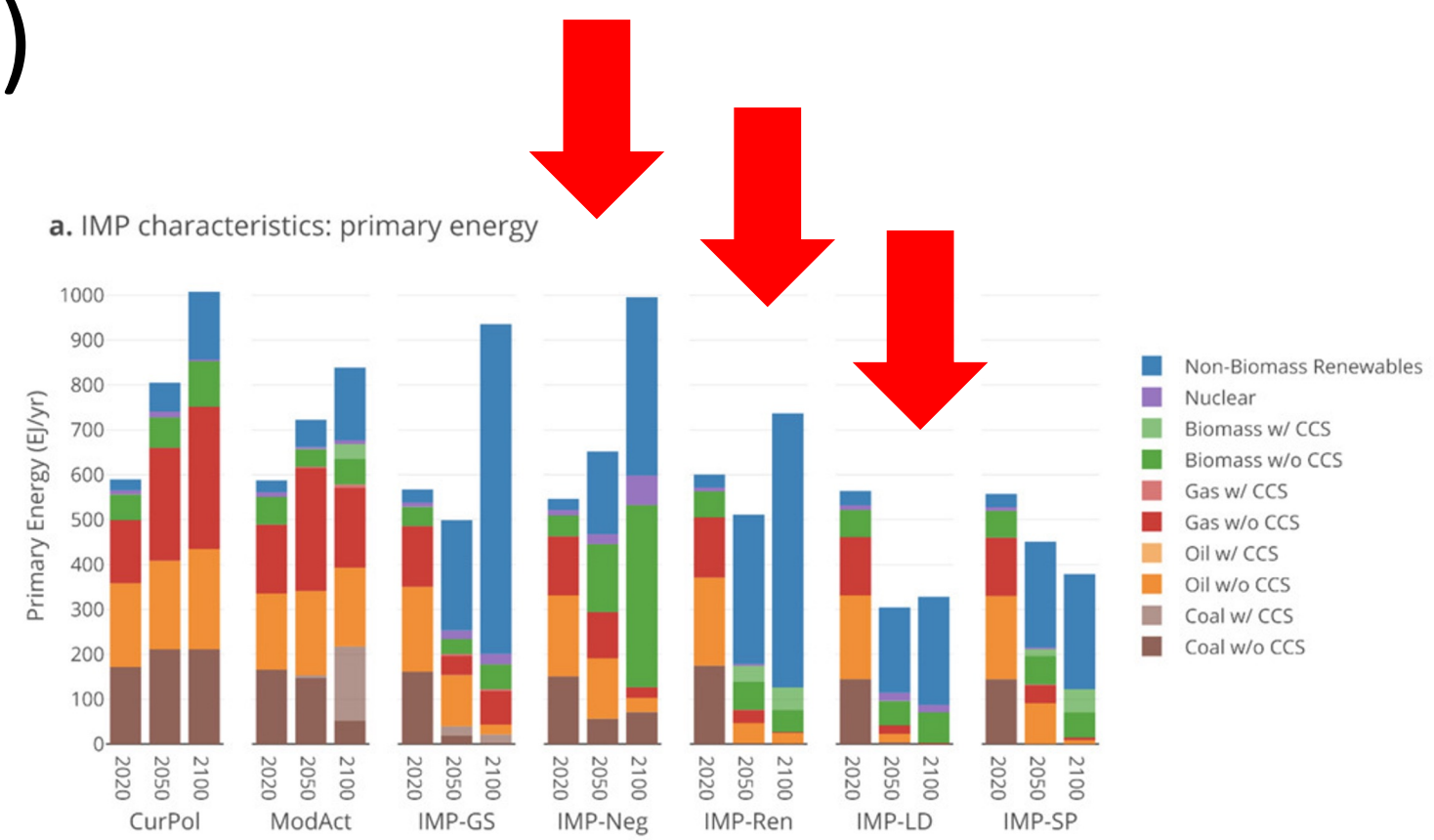
Global GHG emissions peak before 2025, reduced by 43% by 2030; Methane reduced by 34% by 2030



Global GHG emissions peak before 2025, reduced by 27% by 2030.

Reperto 4: IMPs (scenari illustrativi)

Ci sono diversi modi per organizzare i sistemi energetici con lo scopo di raggiungere gli obiettivi del Trattato di Parigi



Reperto 5: le politiche

Politiche di regolazione e strumenti di prezzo si sono dimostrati efficaci nel ridurre emissions

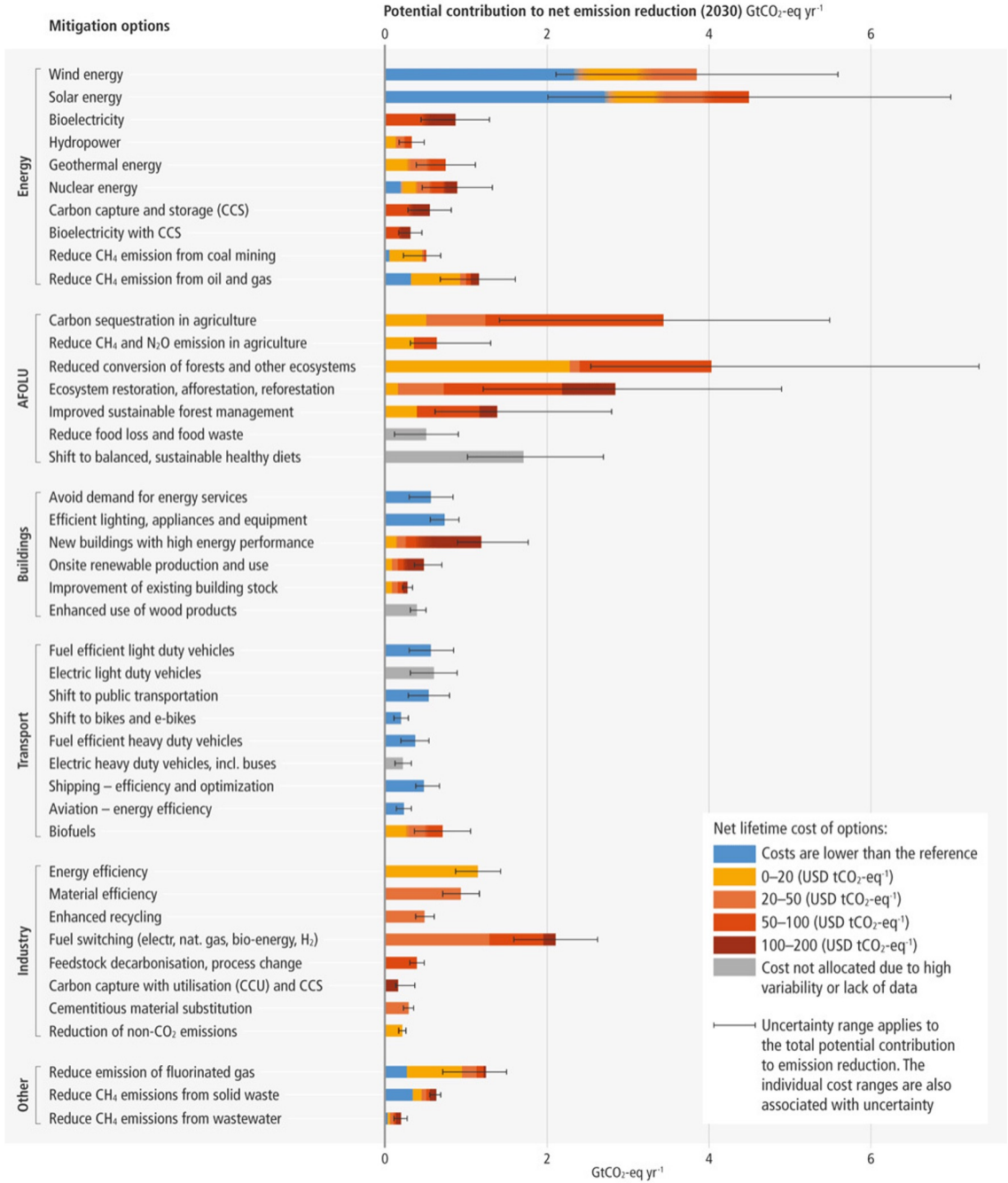
I portafogli di politiche a supporto della riduzione delle emissioni, possono promuovore il cambiamento sistemico se coordinate con tutte le altre politiche economiche

Obiettivi di mitigazione ambiziosi richiedono un forte coordinamento tra governi e società

Reperto 6:
I costi della mitigazione

I costi delle diverse opzioni variano

Metà della riduzione delle emissioni al 2030 può essere raggiunta a costi inferiori a 100$/tCO2



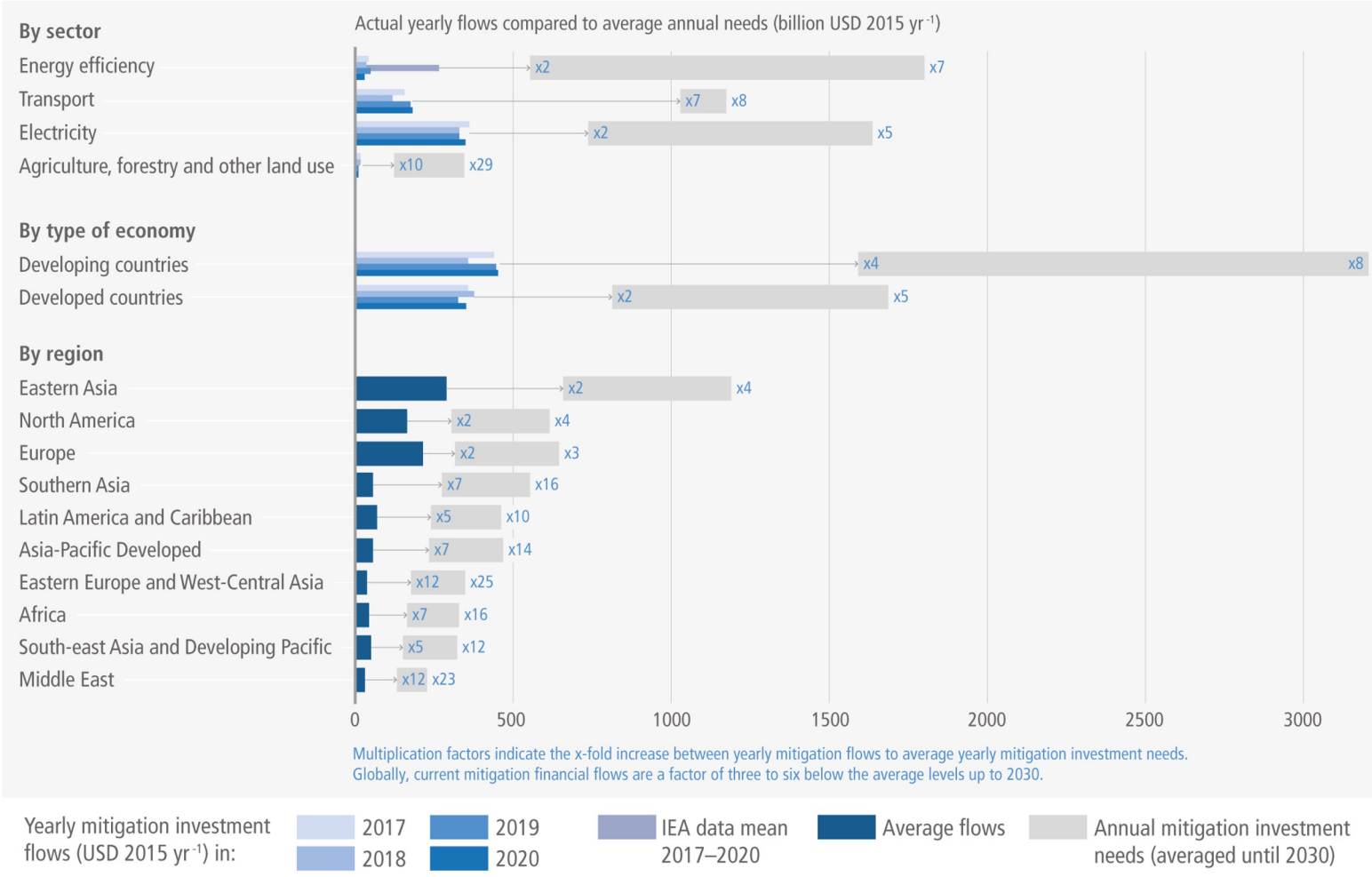
Reperto 7: I finanziamenti

La carenza di investimenti in tecnologie verdi deve essere colmata

I flussi finanziari attuali sono **3-6x più bassi** rispetto ai livelli necessari al 2030 per mantenere l'aumento di temperatura 1.5°C/2°C

A livello globale ci sono capitali e liquidità disponibili

Le sfide riguardano **l'abbandono degli investimenti in fossili** (*divestment*), e la **concentrazione in paesi sviluppati**



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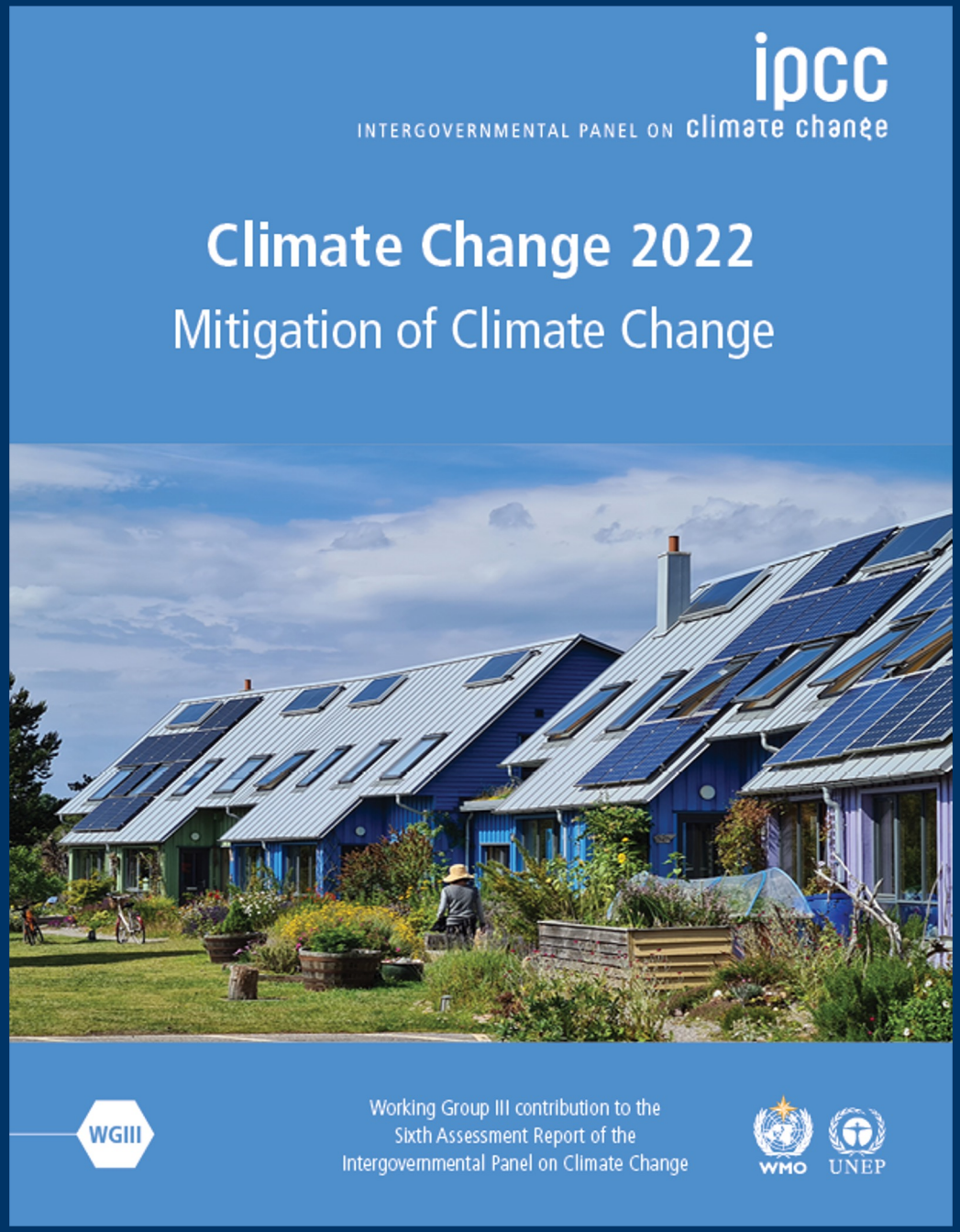

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Backup slides

Energy

Great progress is the last two decades

Energy

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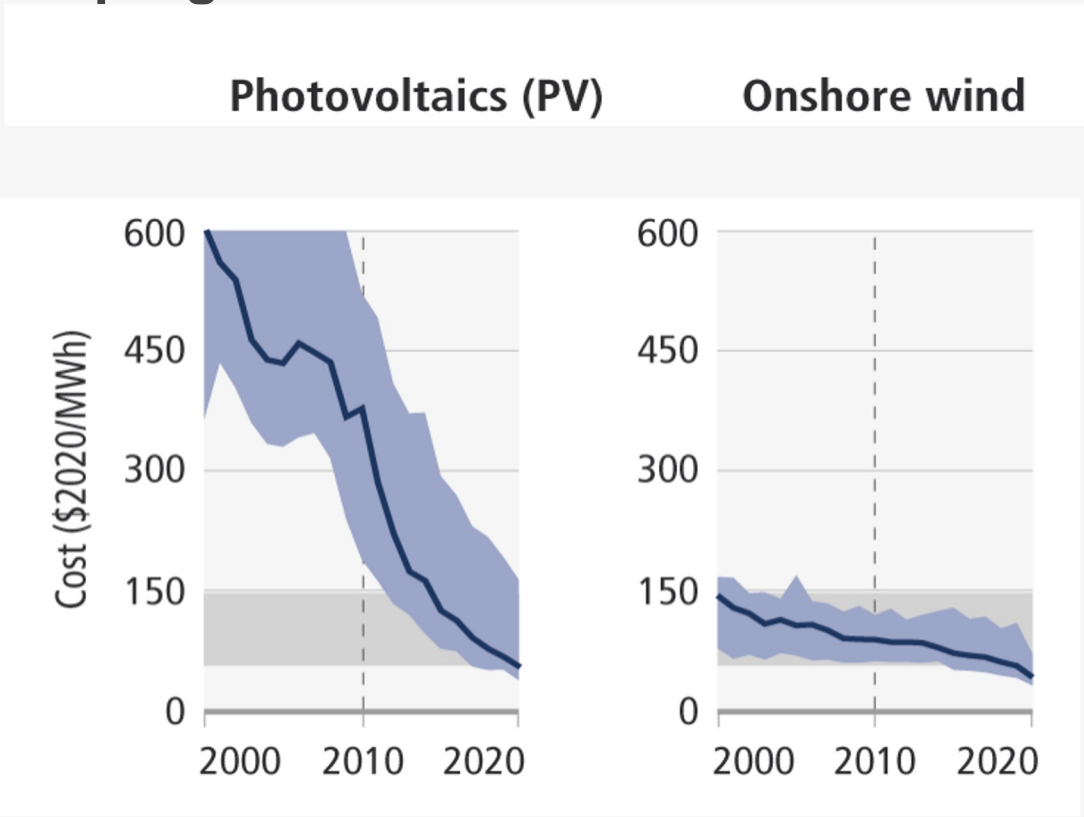

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Energy

Great progress is the last two decades

No regret options (a.k.a. “No brainers”)

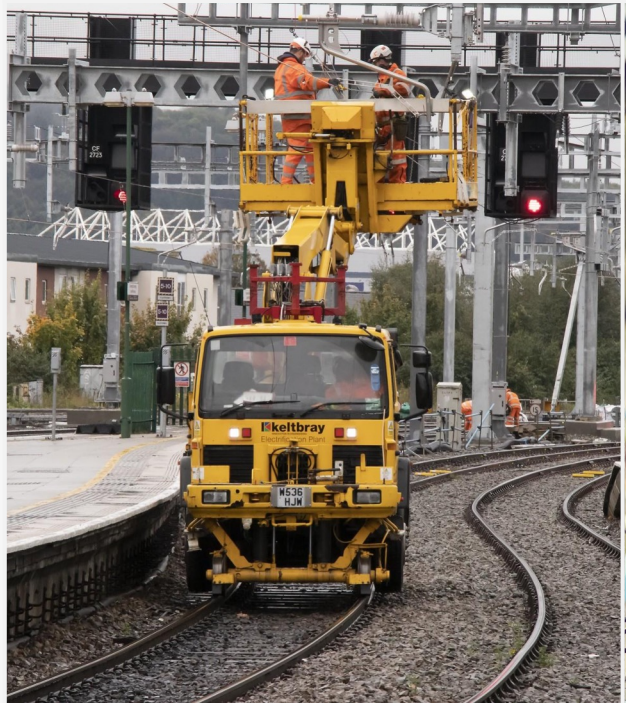
- **Electrification**
- **Energy efficiency**

The challenges:

- **Alternative fuels**, e.g. hydrogen and sustainable biofuels

Transport

- **reducing demand** and **low-carbon** technologies are key to reducing emissions
- **electric vehicles**: greatest potential
- **battery technology**: advances could assist electric rail, trucks
- **aviation** and **shipping**: alternative fuels (low-emission **hydrogen** and **biofuels**) needed
- Overall, substantial potential but depends on **decarbonising the power sector**.



[United Airlines, Jeremy Segrott CC BY 2.0, Andreas160578/Pixabay]

Industry

- using materials more **efficiently**, **reusing**, **recycling**, **minimising waste**; currently **under-used** in policies and practice
- **basic materials**: low- to zero-greenhouse gas production processes at **pilot** to **near-commercial** stage
- achieving **net zero** is challenging





[Ahsanization/Unsplash, IMF Focus | Industry and Manufacturing CC BY-NC-ND 2.0, Rwanda Green Fund CC BY-ND 2.0, ILO/M. Fossat CC BY-NC-ND 2.0, Stephen Cornwell Pxhere.com]

Buildings, Cities and urban areas

- buildings: possible to reach net zero emissions in 2050: action in this decade is critical to fully capture this potential
- retrofitting existing buildings and effective mitigation techniques in new buildings
- sustainable production and consumption of goods and services
- enhancing **carbon uptake and storage** (e.g. green spaces, ponds, trees)

Demand and services

- potential to **significantly bring down** global **emissions** by 2050
- walking and cycling, electrified transport, reducing air travel, and adapting houses make large contributions
- **lifestyle changes** require **systemic changes** across all of society
- **some** people require additional **capacity**, **energy** and **resources** for human wellbeing

[Bosch, Unsplash/Yoav Aziz, Adam Bartoszewicz, Victor Hernandez]

Technology and Innovation

- investment and policies **push forward low emissions** technological **innovation**
- **effective decision making** requires assessing potential benefits, barriers and risks
- **some options** are technically **viable**, rapidly becoming **cost-effective**, and have relatively **high public support**. Other options face barriers

Adoption of low-emission technologies is slower in most developing countries, particularly the least developed ones.

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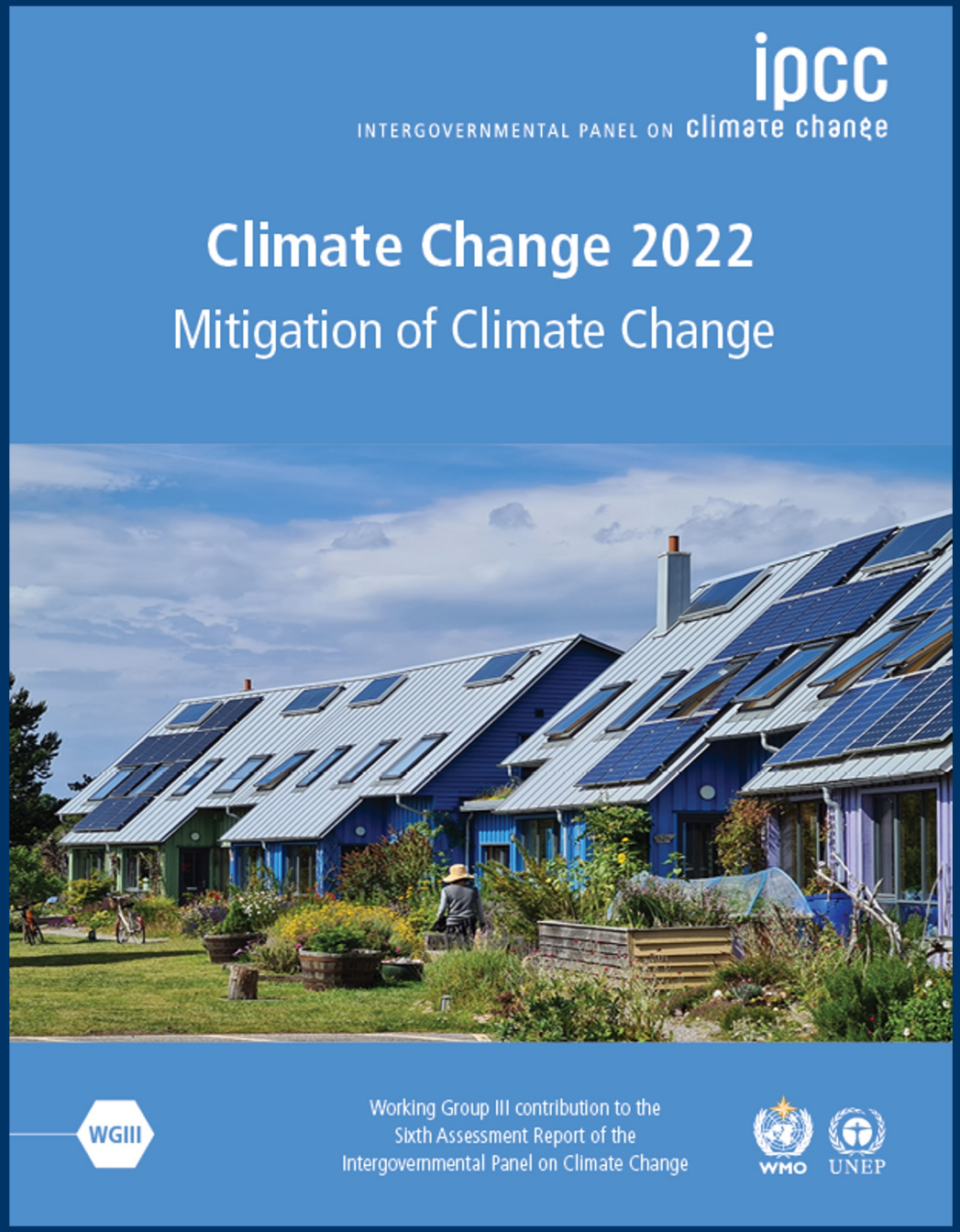

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Grazie

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