MAINSTREAMING CLIMATE CHANGE INTO DEVELOPMENT POLICIES AND STRATEGIES

Puducherry Climate Change Cell
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United Nations Environnent Programme

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4 numbers that hold the fate of so many in balance

1.5° C

While there will still be climate impacts at 1.5 °C, this is the level scientists say is associated with less devastating impacts than higher levels. Every fraction of additional warming beyond 1.5 °C will result in increasingly severe and expensive impacts.

Scientists agree that to get on track to limit global temperature rise to 1.5 °C, emissions must drop rapidly to 25 gigatons by 2030

25 Giga tons

56 Giga tons

Our challenge: based on today's commitments, emissions are on track to reach 56 Gt CO2e by 2030, over twice what they should be

Our global solution: Collectively, if commitments, policies and action can deliver 7.6% emissions reduction every year between 2020 and 2030, we CAN limit global warming to 1.5 °C.

7.6%

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Why is 1.5°C important?

- The level scientists say is associated with less devastating impacts than higher levels of global warming. Every fraction of additional warming beyond 1.5°C will bring worse impacts, threatening lives, livelihoods and economies.
- At 1.5°C, over 70% of coral reefs will die; at 2°C **virtually all reefs will be lost.**
- Insects, vital for pollination of crops and plants, are **likely to lose half their habitat at 1.5°C** ; almost twice as likely at 2°C.
- The Arctic Ocean **being completely bare of sea ice** in summer would be a once per century likelihood at 1.5°C; once a decade likelihood at 2°C.
- **Over 6 million people** currently live in coastal areas vulnerable to sea level rise at 1.5°C degrees, at 2°C **10 million more** by the end of this century.
- Sea-level rise will be **100 centimeters higher** at 2°C than at 1.5°C.
- The frequency and intensity of **droughts, storms and extreme weather events** are increasingly likely above 1.5°C.

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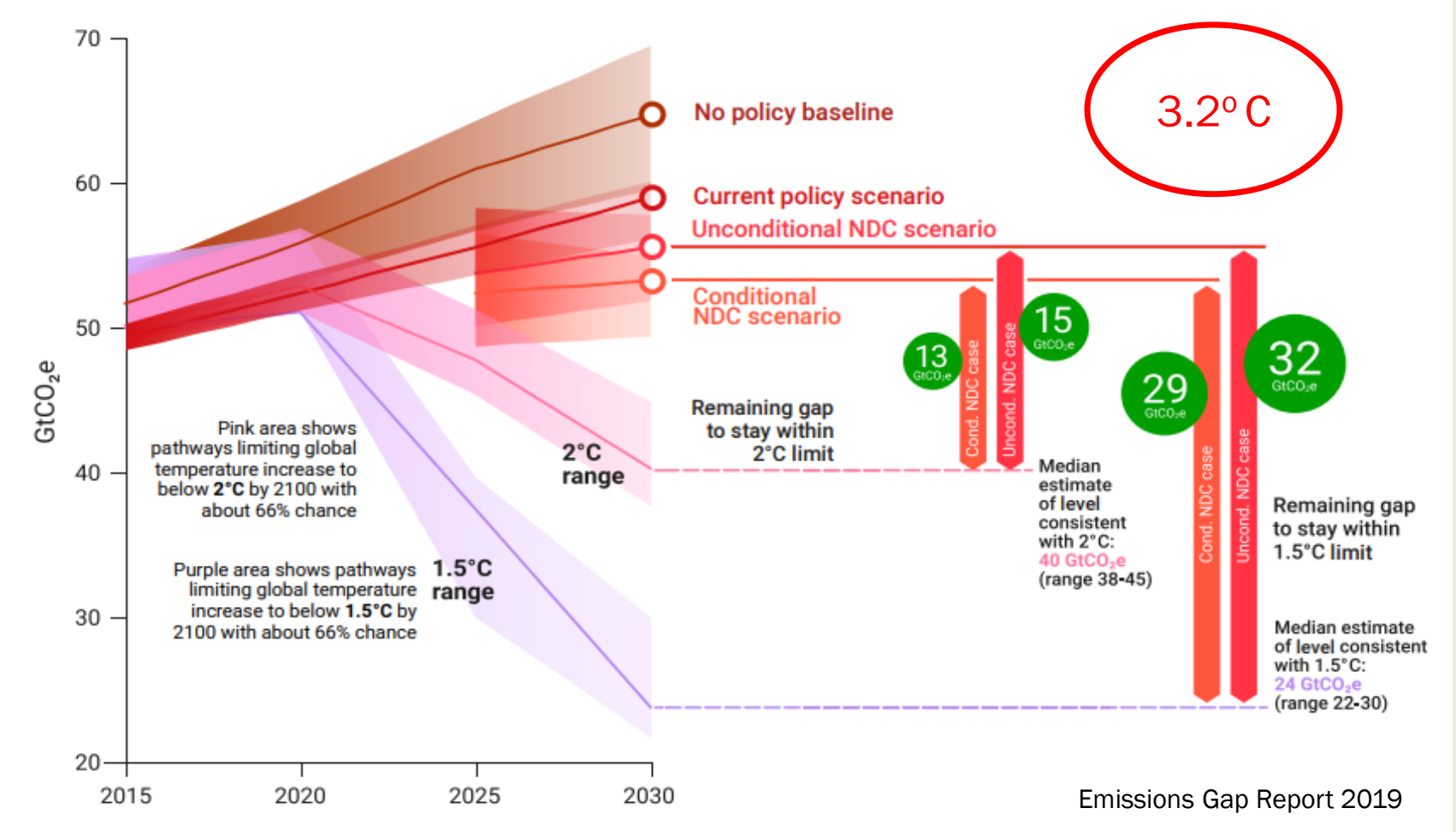
On the brink of missing the 1.5 °C opportunity

Each year, UNEP's Emissions Gap Report looks at the expected size of the gap in 2030 and progress countries are making in closing it.

- **Baseline scenario** estimates emissions in the absence of any climate policies since 2005
- **Current policy scenario** takes into all policies in place but assumes that no additional measures are undertaken.
- **Unconditional NDC scenario** assumes that countries meet climate pledges under the Paris Agreement on Climate Change that have no conditions attached.
- **Conditional NDC scenario**, assumes that countries achieve climate pledges, including those with conditions.

The GHG emissions gap remains massive



Emissions Gap Report 2019

On current unconditional commitments, temperatures can be expected to rise to 3.2 °C this century. Have already increased 1.1 °C, leaving families, homes & communities devastated.

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On the brink…

- **2010-2020- A lost decade:**
  - *No real change in global emissions pathway. The effects of climate policies too small to offset the impact of key drivers of emissions*
- **Every day we delay, the steeper and more difficult the cuts become-**
  - *10 years ago, if countries had acted on the science, governments would have needed to reduce emissions by 3.3% each year.*
  - *Today, it is by 7.6% every year; even the most ambitious national climate action plans are far short of this*
  - *We need a five-fold increase in collective commitments*
  - *By 2025, we will need cuts of 15.5% each year, making the 1.5 °C target almost impossible*
- **Delayed action increases the price tags** for sea defenses; food security; infrastructure adaptation
- **Unless new and enhanced NDCs** are agreed to by 2020 and implementation of existing actions accelerated, exceeding the 1.5 °C goal can no longer be avoided, and achieving the well-below 2 °C temperature goal becomes increasingly challenging.

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What are countries doing?

- An increasing number of countries and regions are adopting ambitious goals in line with the transformation needed, but the scale and pace is not sufficient.
- Most nations are expected to strengthen their climate commitments at COP 26. About **71 countries and 11 regions, accounting for about 15% of global GHG emissions in total**, have long-term objectives to achieve net-zero emissions, differing in scope, timing and the degree to which they are legally binding. Others, accounting 85% of global GHG emissions still to make similar commitments.
- **The G20 (a group of 19 countries, plus the EU) account for 78% of all emissions**. Theirs is the biggest opportunity to lead the world into a thriving, renewable future.

Non-State and subnational actors are increasingly important, but current mitigation impacts are poorly documented

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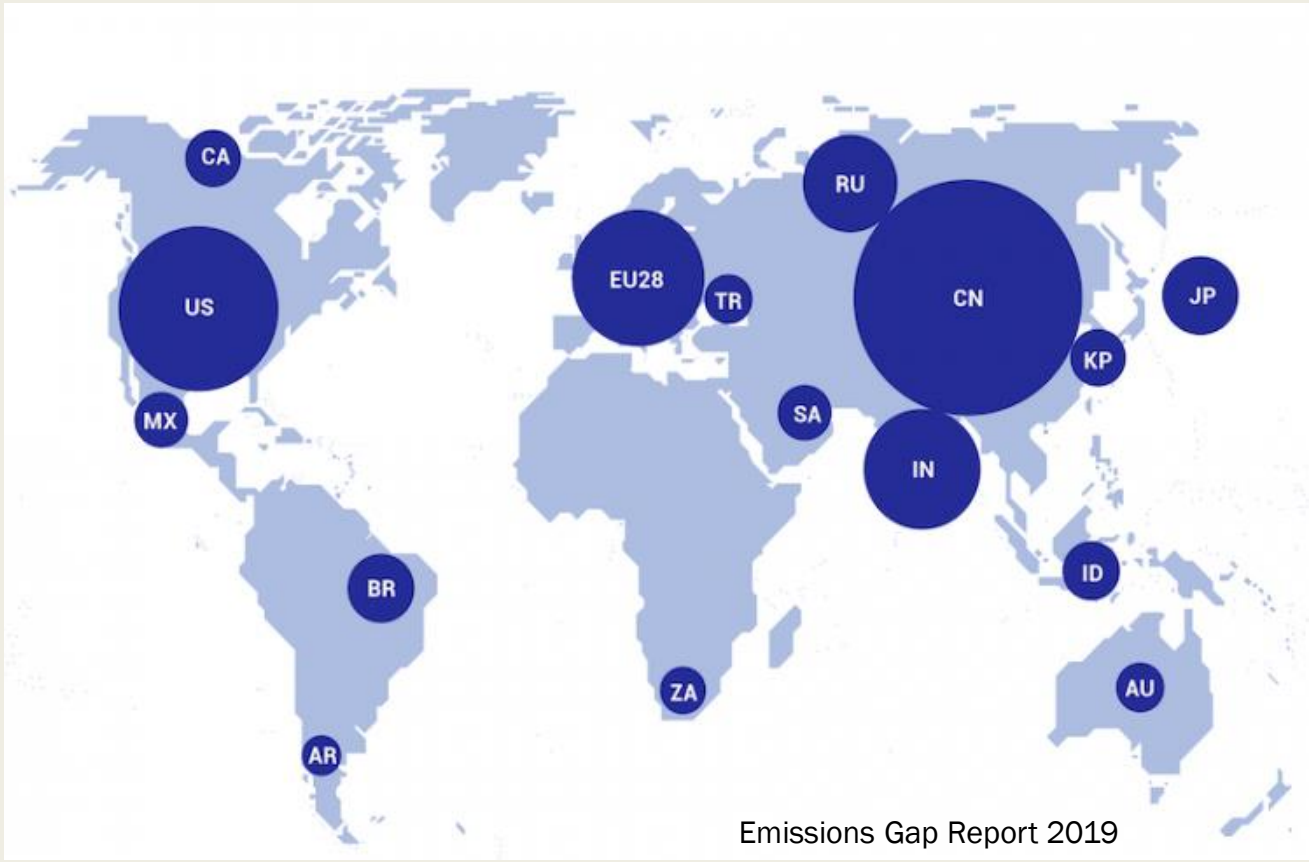
- The top four emitters (**China, USA, EU28 and India**) contributed to over 55% over the last decade, excluding emissions from land-use change

Action:

- **UK,** France have passed legislation for carbon neutrality
- Germany, Italy, and EU28 in the process of doing so
- **15** G20 members have no net-zero target legislation
- **China**: among the most ambitious RE policies and plans; exist; emissions grew 1.6% in 2018 to reach a high of 13.7 gigatons of CO_2 equivalent



Emissions Gap Report 2019

- **USA: 6 states** and territories have passed legislation setting goals for 100% clean energy by 2045/50. Over 100 cities have made 100% clean energy commitments; some positive initiatives form industry
- **EU** likely to meet its NDC (emission reductions of at least 40% below 1990 levels by 2030); Saw a decline of emissions in 2018
- **India:** On track with NDCs. Emissions per capita one of the lowest within the G20
- If land-use change emissions were included, the rankings would change, with **Brazil** likely to be the largest emitter.

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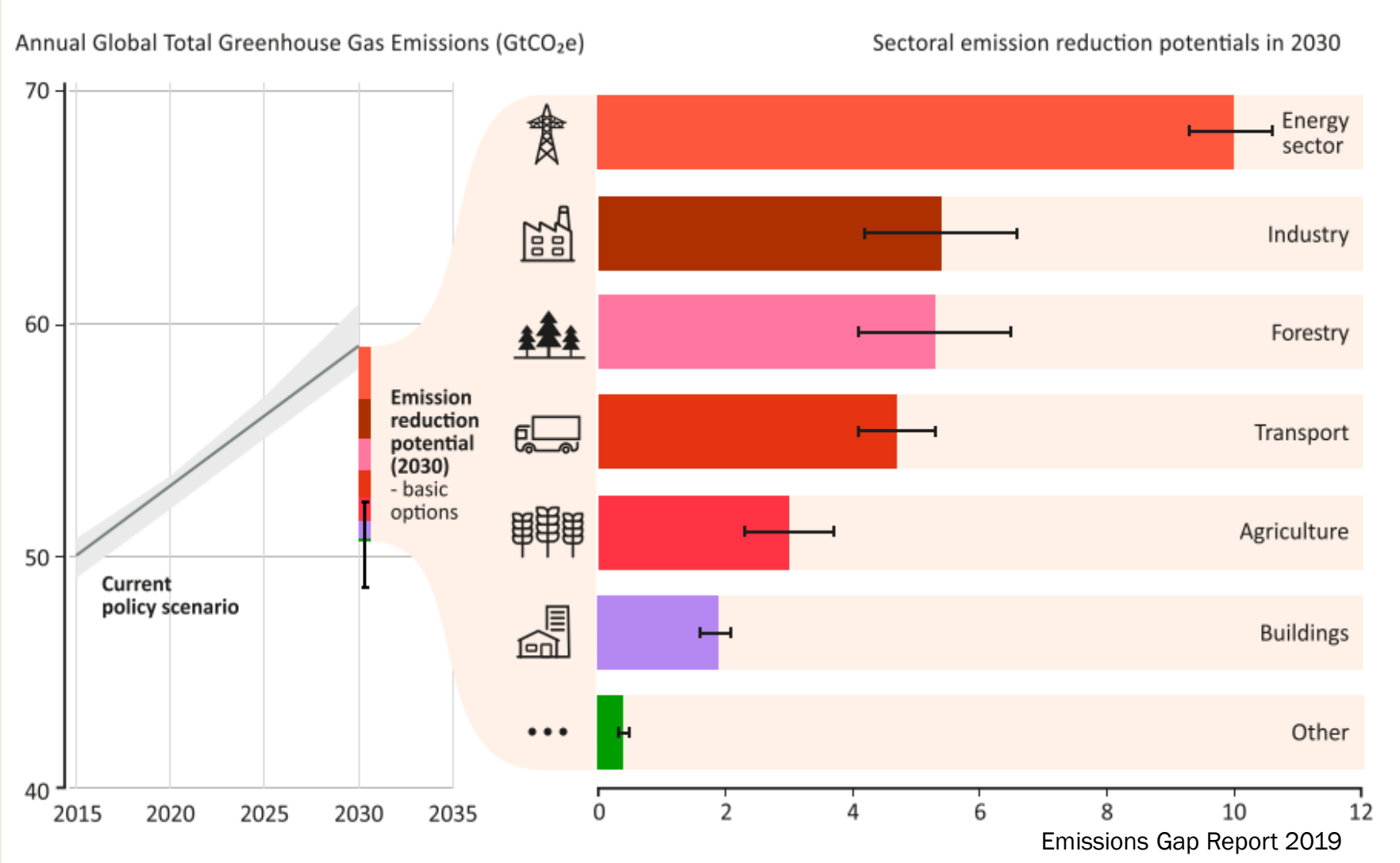
Where are the mitigation & mainstreaming opportunities? – emission reduction basic potential compared to the current policy scenario for 2030

- 6 areas: solar, wind, efficient appliances, efficient passenger cars, afforestation and stopping deforestation- present a combined potential of up to 21 $GtCO_2e$ per year by 2030, sufficient to get on a pathway to well < 2°C
- While innovation will be needed for full decarbonization, policies and technologies needed to bridge the gap are available and at reasonable costs



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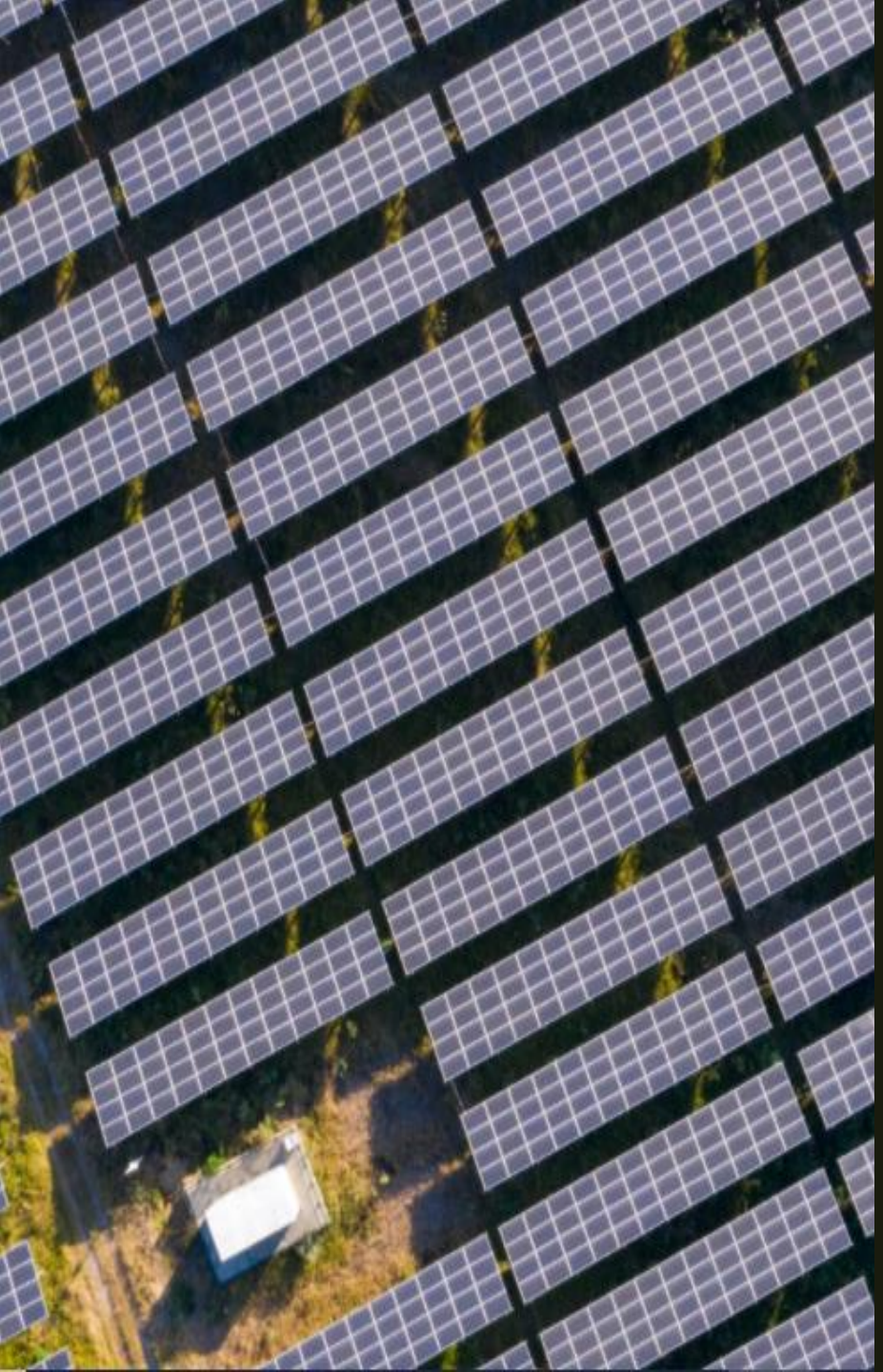

Decarbonizing energy supply and transport is key

- CO2 emissions from fossil-fuel use in the energy and industry sectors dominate total GHG emissions.
- Energy needs are projected to grow by approximately 30 per cent by 2040, due to economic growth and the accompanying urbanization, industrialization, infrastructure growth, and a growing global middle class.
- Enhanced energy efficiency will be key across the board with a strong focus on heating and cooling, appliances and lighting, industrial processes and motors, and transport.
- Rapid expansion of renewable electricity supply, establishment of smarter and more flexible electricity grids, and increase in the numbers of products and processes that run on electricity in buildings, transport and industry.
- Renewables expansion increasingly competitive
  - *For the seventh successive year, the net additional power generation capacity of renewable sources exceeded that of nonrenewable sources*
  - *Growth rates in renewable power have averaged 8–9 per cent per year since 2010.*
  - *Stable and conducive policies and regulatory frameworks will be important preconditions along with access to the necessary private sector finance*

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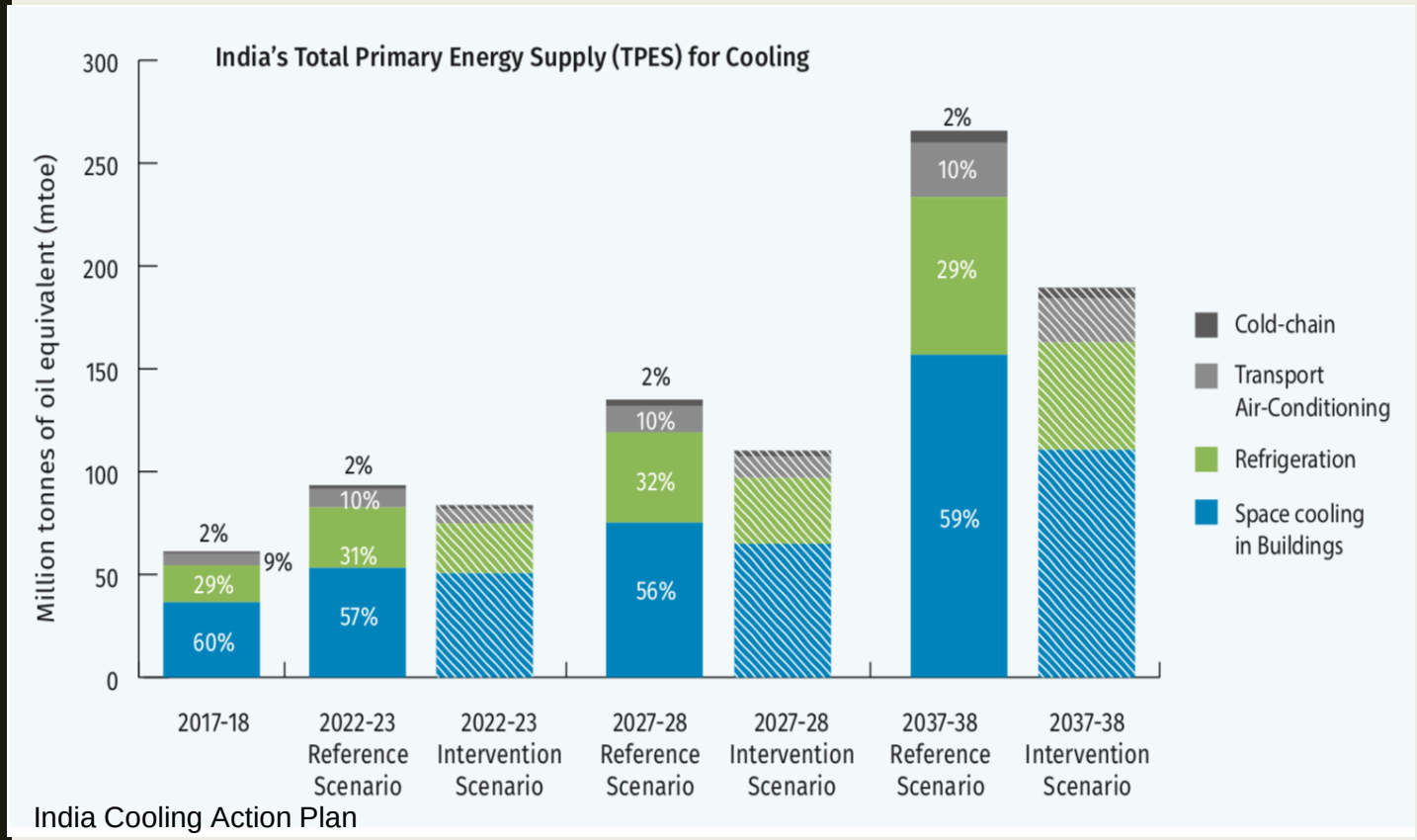
Growing and diverse demand for cooling

1.3 billion tons of food is lost or wasted globally every year – approx. 1/3

10% of new-borns were not vaccinated globally in 2018

20% of electricity globally used for cooling and refrigeration



India Cooling Action Plan

- Space cooling : by 2050 global demand will triple– & this segment alone will consume as much electricity as China & India today.
- The global carbon footprint of food loss and waste alone is estimated to be 3.3 GtCO2e, approximately equal to India's total emissions; impacts on water use, land degradation, and biodiversity loss.
- Data centres and industrial cooling.
- Vaccines: In India, with the largest immunization programme in the world, up to 25% vaccines are wasted before they are used

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Phase-down of HFCs by 2100 under Kigali Amendment to the Montreal Protocol can achieve 0.4 degrees of avoided warming; Integrating energy efficiency could double climate benefits- equivalent to roughly 4-8 years of global greenhouse gas emissions, based on 2018 levels

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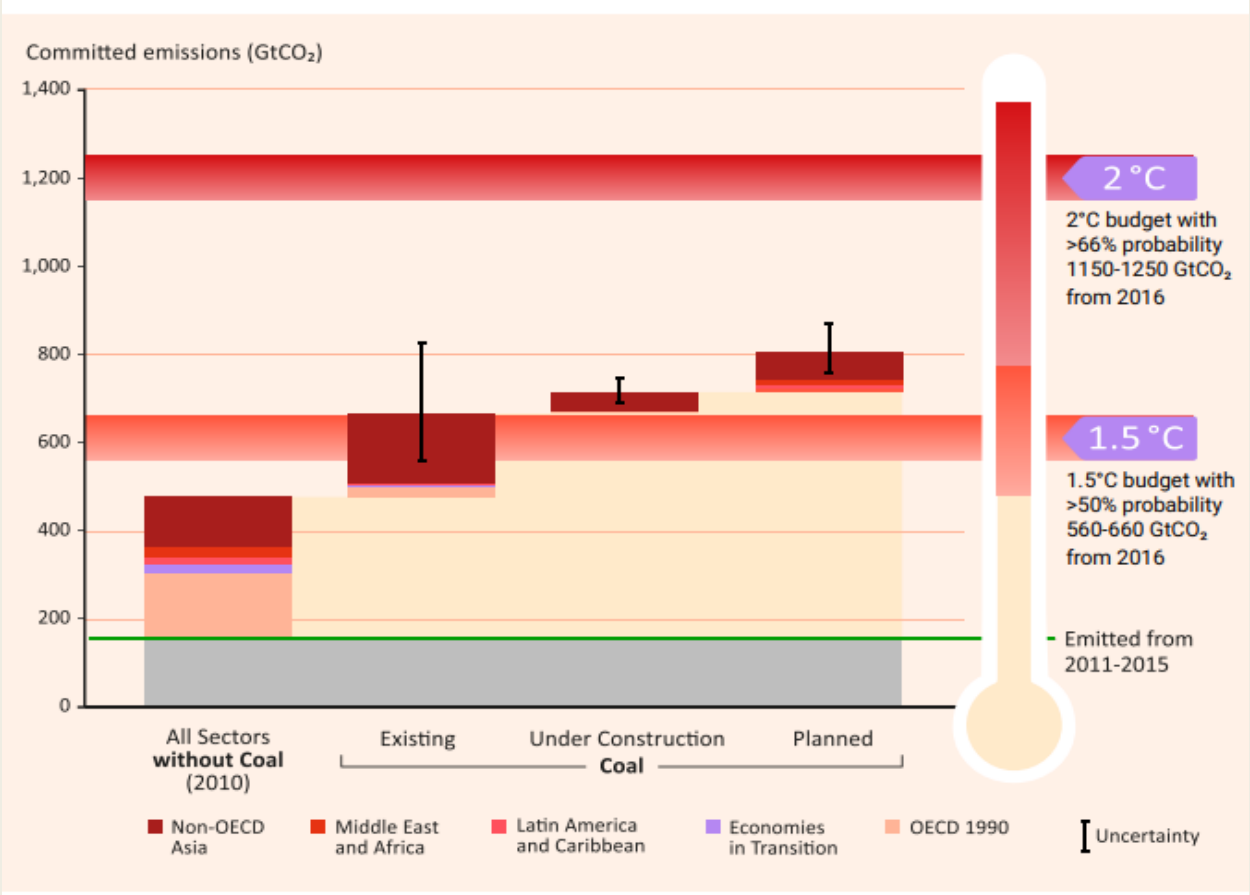
Phasing out coal is indispensable, but requires a balanced transition

- At the global scale, the stock of coal-fired power plants is still increasing, as are emissions from coal.
- Existing stocks, along with those being planned or built account for a significant share of the available carbon budget for a 2 °C target, & would plausibly make a 1.5 °C target infeasible
- Avoiding further lock-in through new coal-fired power plants is important, followed by a gradual phasing out of existing coal plants
- The transition is a political and economic challenge that will take time, in order to balance impacts on the livelihoods and energy prices

Emissions committed to the atmosphere from coal-fired power plants (existing, under construction and planned) and other economic sectors, by region



Emissions Gap Report 2019

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Nature-based solutions can make a large contribution and are currently the main option for CO_2 removal

Curbing deforestation have economic potential to mitigate around 5 GtCO2e annually by 2030 (2017 EGR):

- Establishing new protected areas
- Using command-and-control measures (enacting, enforcing and monitoring of regulations on forest conversion etc.
- Using economic instruments (taxes, subsidies, payments for ecosystem services)
- Creating policies affecting drivers and contexts that currently promote deforestation (sectoral policies, institutional frameworks, governance structures and agricultural subsidy reform

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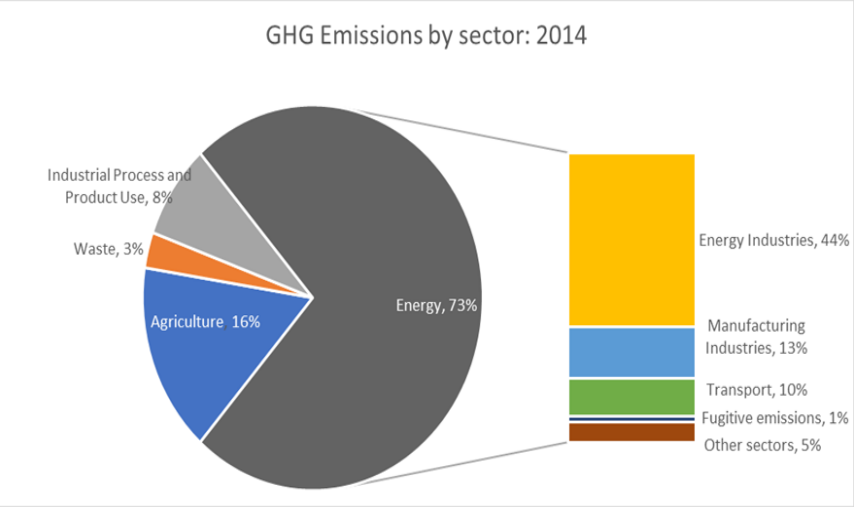
GHG emissions by sector: India



Based on data reported in Second Biennial Update Report submitted by the Government of India

- India's total annual GHG emissions increased from 2.14 billion tonnes (Bt) of CO2e in 2010 to 2.61 Bt in 2014
- Energy sector accounted for 73% of the total, followed by agriculture 16%, IPPU (industrial processes & product use) 8%, & waste sector 3%
- About 12% of emissions were offset by carbon sink action of forestland, cropland and settlements.
- Energy sector emissions were predominated by fossil fuel combustion activities, comprising energy/power industries, manufacturing industries, transport and other sectors.
  - Within energy industries, 95% of emissions were from electricity production, about 4% from refinery and 1% from manufacturing of solid fuels. Thus, electricity production accounted for about 42% of the entire GHG emissions from all the sectors in 2014.
  - The manufacturing industries and construction together emitted about 18% of total emissions from the energy sector. The sub-categories that stand out in terms of contribution to emissions are: Iron & steel (43.9%) and Cement (13.4%).

Decarbonize electricity
Move as many as possible energy applications, esp transport, to electricity

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THANK YOU

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Emissions Gap Report 2019
https://www.unenvironment.org/resources/emissions-gap-report-2019

Emissions Gap Report 10-year summary
https://www.unenvironment.org/resources/emissions-gap-report-10-year-summary