
The Emissions Gap Report 2012

Where do we need to be in 2020 and beyond?
What do countries need to do to make it happen?

CO P 18 Doha 2012

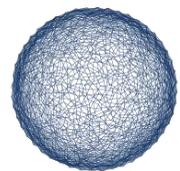
John Christensen
UNEP



UNEP

United Nations Environment Programme

Moving forward on global climate policy



COP15
COPENHAGEN
UN CLIMATE CHANGE CONFERENCE 2009



COP16
CMP6 México2010
United Nations Climate Change Conference



COP17/CMP7
UNITED NATIONS
CLIMATE CHANGE CONFERENCE 2011
DURBAN, SOUTH AFRICA



Three policy developments ...

✓ **A target (or limit) ...**

Staying below an increase of 2 degrees Celsius (1.5⁰ C)

✓ **A means to get there ...**

Country pledges to control emissions (pegged to 2020)

✓ **Durban: A plan for a climate treaty ...** Agreed to by 2015; into effect by 2020

Three questions ...

✓ **Is there a gap between ...**

What we are aiming for ... and where we are heading ?

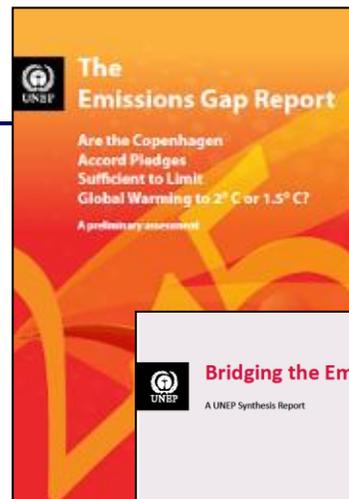
✓ **Can the gap be bridged – and what will it take?**

✓ **Can we wait until 2020** to start stringent emission reductions?

The Emissions Gap reports

2010 Cancun Climate Summit UNEP “Emissions Gap” report

United Nations Environment Programme with the European Climate Foundation & National Institute of Ecology, Mexico



2011 Durban Climate Summit UNEP “Bridging the Emissions Gap” report

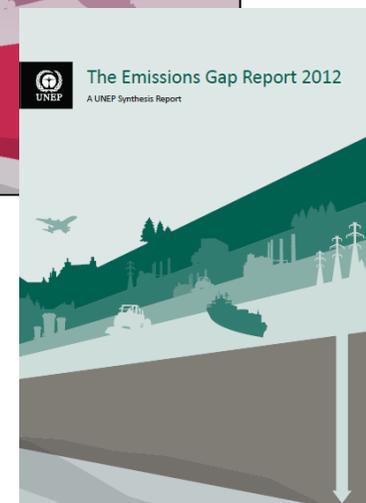
United Nations Environment Programme with the European Climate Foundation & Ministry of Environment, South Africa



2012 Doha Climate Summit UNEP “Emissions Gap 2012” report

United Nations Environment Programme with the European Climate Foundation

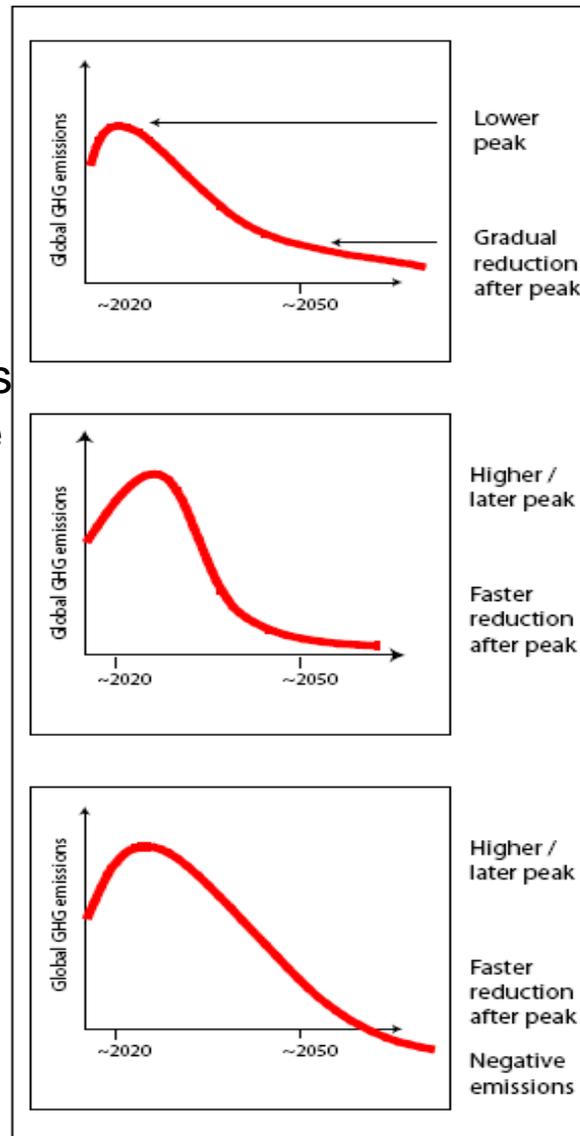
55 scientists, 43 institutions, 22 countries



What are we aiming for?

Pathways to stay within the 2°C target

1. Meeting a temperature target depends largely on *cumulative* emissions
2. Different pathways of emissions correspond to same cumulative emissions



What are we aiming for?

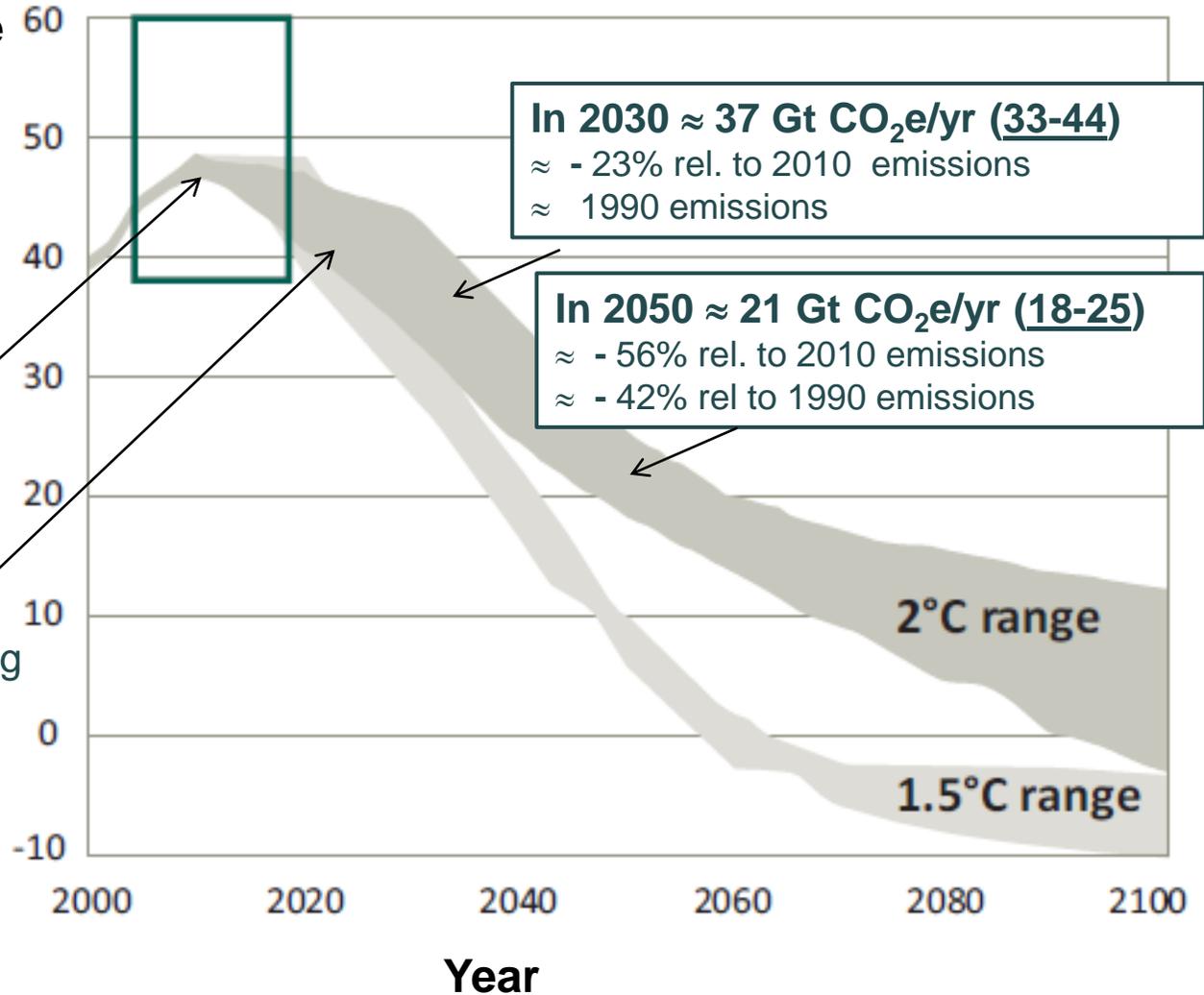
Post-2020 goals for staying within 2°C target

Global Greenhouse Gas Emissions

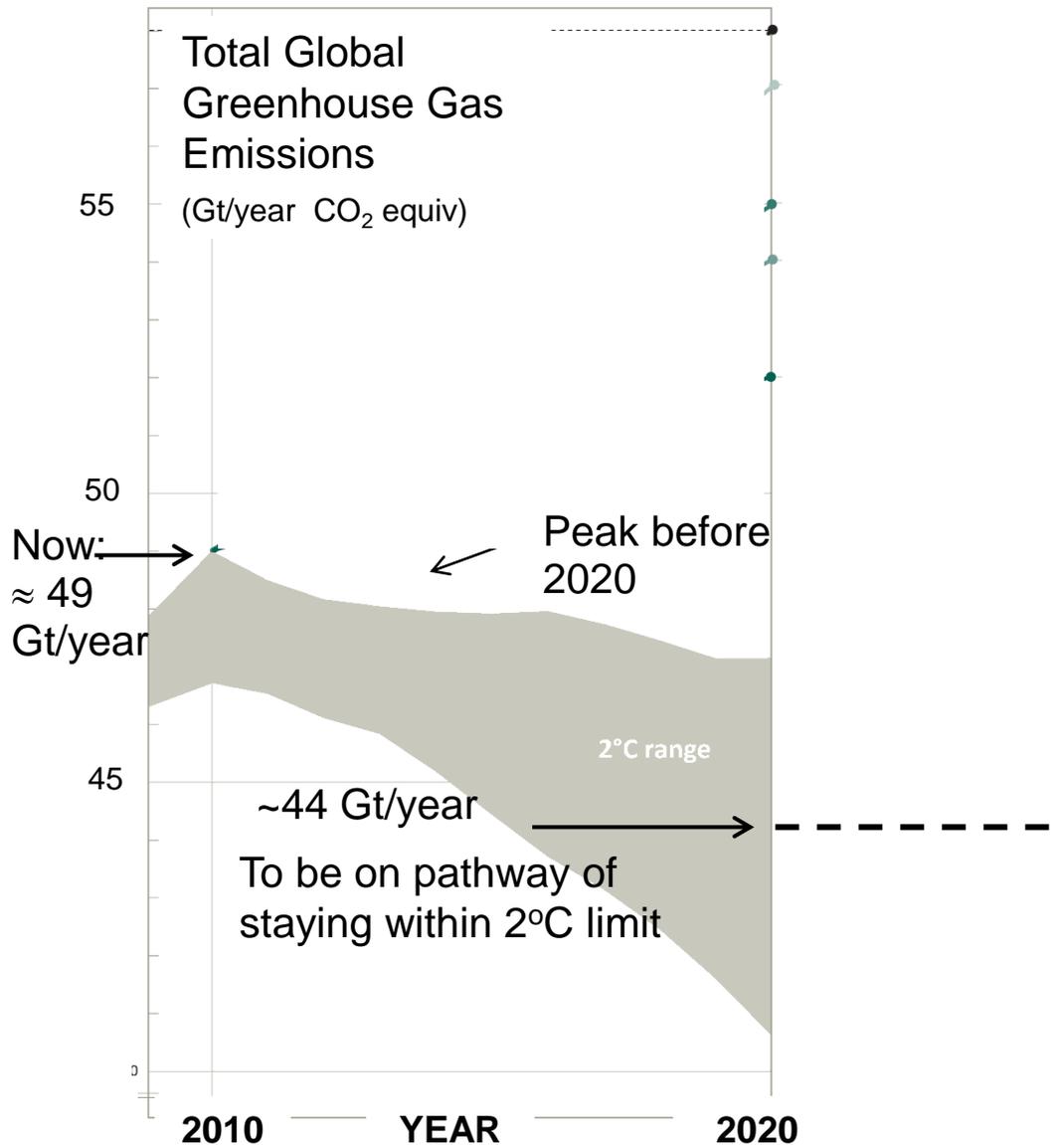
Gt/year CO₂-equiv.

Now (2010) ≈ 49 GtCO₂e/yr

39 emissions pathways
Likely chance of complying with 2°C target:



Is there a gap -- between what we are aiming for and where we are headed in 2020?



Under Business-as-Usual
Gap = 14 GtCO₂e/yr

Under different cases of
country pledges:
Gap = 8 – 13 GtCO₂e/yr

Under the most ambitious
case:
Gap = 8 GtCO₂e/yr

Pledges not enough to meet
the 2°C climate target

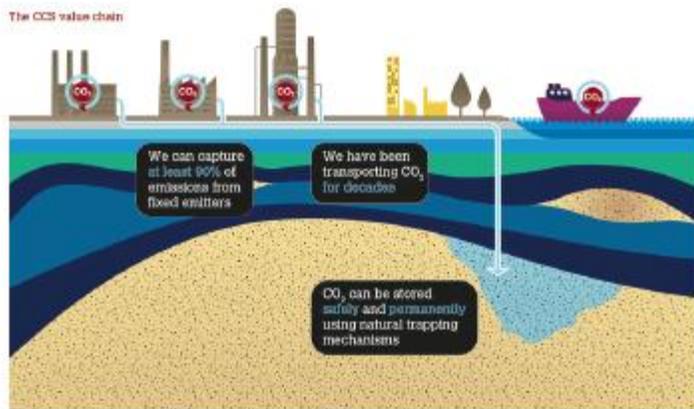
We cannot wait
until 2020 to begin stringent
emission reductions.

What happens if we don't close the gap in 2020?

- ✓ If ambition of pledges not increased: trajectory to $\approx + 3.0$ to 5.0°C
- ✓ What if we start later to meet the 2.0°C target?
“Later action scenarios”: Higher emissions over near term, require sharper reductions afterwards \rightarrow Lower short-term costs, but ...

A bigger gamble ...

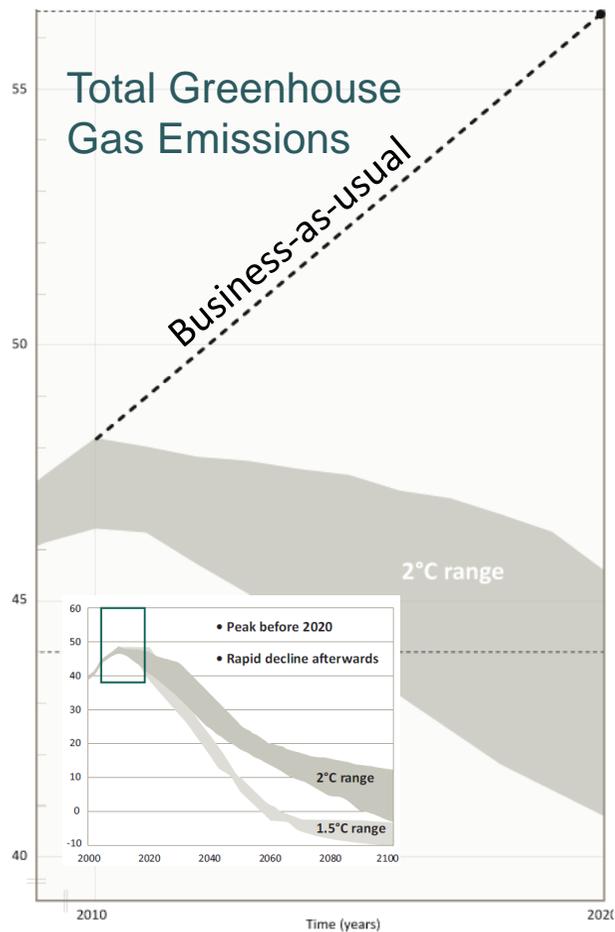
- Higher costs of mitigation
- Greater climate impacts
- Reliance on non-proven technology \rightarrow *Negative emissions*



Negative emissions through Bioenergy + Carbon Capture and Storage

How can the 2020 gap be bridged?

Bottom-up sectoral studies



2010

Year

2020

Emission reduction potential (Gt/year equivalent CO₂)

	Power	2.2 – 3.9
	Industry	1.5 – 4.6
	Transport	1.7 – 2.5
	Buildings	1.4 – 2.9
	Waste	≈ 0.8
	Forestry	1.3 – 4.2
	Agriculture	1.1 – 4.3

Total Emission = 17 ± 3 Gt/year CO₂e
Reduction Potential

The Gap in 2020 = 14 Gt/year CO₂e
 (relative to business-as-usual)

Potential in sectors big enough to bridge the gap.

How can the 2020 gap be bridged?

Some action on the ground



Transportation

Potential: - 1.7 to - 2.5 Gt CO₂e in 2020

Reduce energy use, increase energy security, reduce traffic congestion, security, reduce air pollution

Example policies:

Vehicle Performance Standards

- Japan, EU, USA, Canada, China, Australia and South Korea:
- Light-duty fleets: > 50% reduction in GHG emissions by 2025 rel to 2000.

Bus Rapid Transit

- 16 countries
- GHG emissions in Mexico City: 143 kt CO₂e/yr avoided due BRT (Metrobus) system



How can the 2020 gap be bridged?

Some action on the ground



Buildings

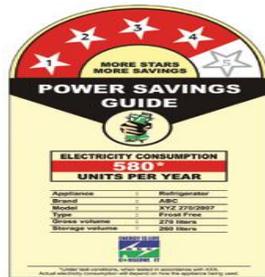
Potential: -1.4 to - 2.9 Gt CO₂e in 2020

Reduce energy use and costs, energy security, safety

Example policy:

e.g. Appliance Standards and Labels

- > 75 countries
- Avoided GHG emissions \approx 125 MtCO₂e/yr (2020) from SEAD* 17 states
- Potential global reductions GHG emissions: 0.7 Gt CO₂e (2020)



* Super Efficient Equipment and Appliance Deployment Initiative

How can the 2020 gap be bridged?

Some action on the ground



Forestry – Reducing deforestation

Potential: - 1.3 to - 4.2 Gt CO₂e in 2020

Many countries, including Brazil and Costa Rica

Preservation of culture, ecotourism, biodiversity, watershed protection



Example policies:

- **Protected areas** Brazil: 46% of Amazon, Costa Rica: 24% of land area.
- **Satellite-based monitoring** Brazil: enforcement of deforestation policies
- **Economic instruments:** Costa Rica: Payments for ecosystem services



Brazil: Avoided GHG emissions: ~ 0.6 Gt CO₂e (2005-2009);
~ 2.8 Gt CO₂e (2006-2011)

Costa Rica: Currently: Near zero deforestation & related emissions

Losing opportunities ...

“Lock in” of high emission technologies, structures and processes

- Currently produced energy-inefficient vehicles will still be on the road in 2020
- Energy-wasteful buildings now under construction will last 100 years
- Power plants are being constructed with fuel efficiency below what is technically feasible, and will have lifetime of >25 years

Conclusions

New in this report

- Looking beyond 2020, current global emissions, consequences of not closing the gap

For a climate agreement that begins in 2020 ...

To meet the two degree target:

- Global emissions in 2030 must return to around their 1990s level
- Global emissions in 2050, > 40% below 1990 levels, > 50% below 2010 levels

But cannot wait until 2020 for stringent emission reductions to begin.

To meet the two degree target:

- Global emissions already more than 10% above emissions level in 2020 consistent with 2°C target, and growing
- Global emissions must peak before 2020
- Pledges not enough, still gap in 2020 → 8 - 13 Gt CO₂e

Conclusions

The Gap can be narrowed ... with action in the negotiations

- Minimizing use of surplus emission credits & land use related credits
- Pursuing more ambitious (“conditional”) pledges

The Gap can be bridged ... by realizing large potential in each sector

- Technical potential for reductions in 2020 (17 Gt CO₂e /yr) big enough to close the gap (14 Gt CO₂e /yr)
- Emission reductions by scaling up policies that fulfil local and national self-interest: Saving energy, saving costs, reducing traffic congestion, reducing air pollution ...

But “lock in” of high emission technologies, structures and processes → losing time + opportunities to close the gap.

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