

International climate change agreements

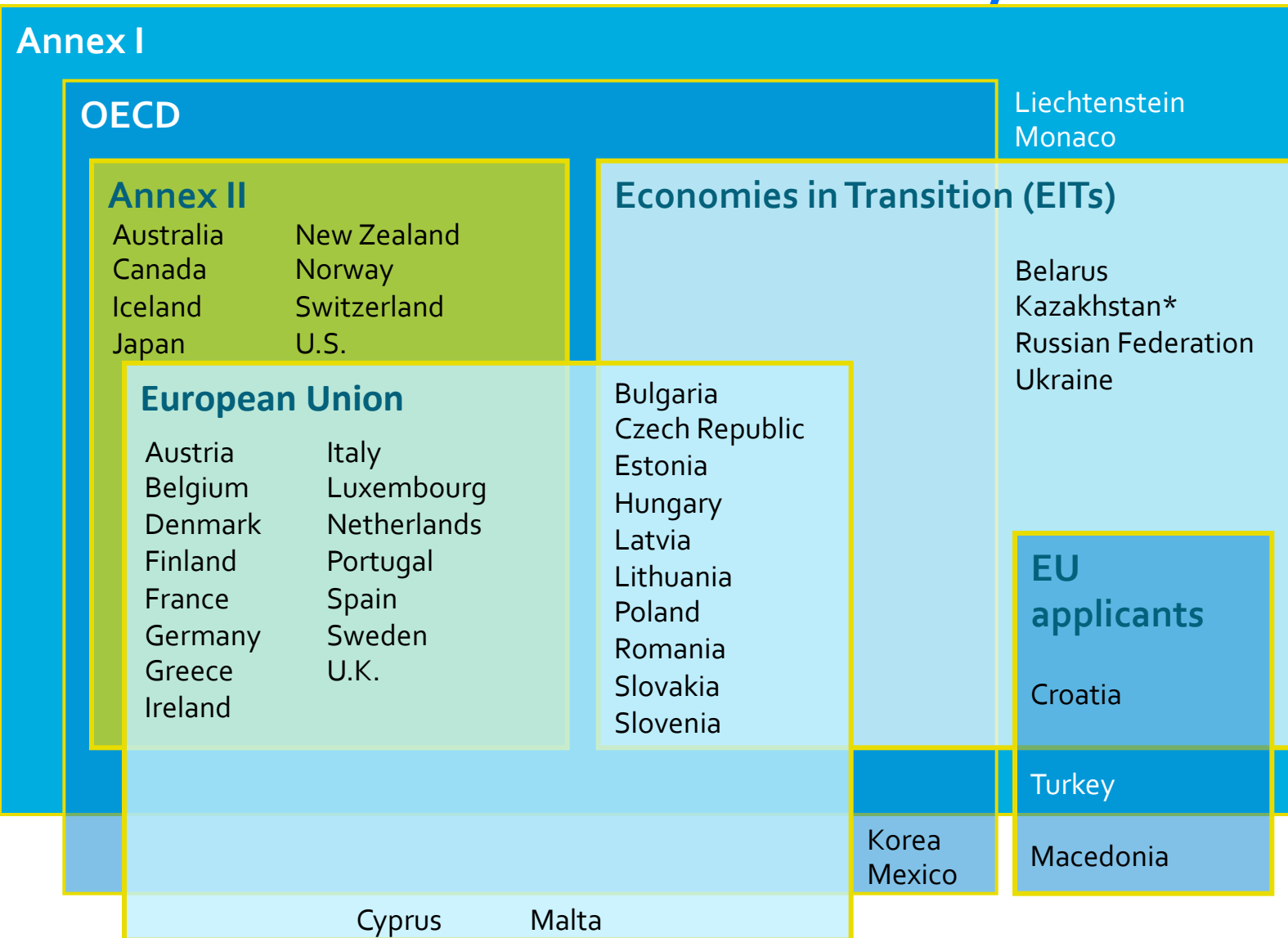
A quick look at the international climate change policy regime

1992	UN Framework Convention on Climate Change signed	Rio de Janeiro
1994	UN Framework Convention on Climate Change in force	
1995	COP-1: Decision to strengthen Convention via Protocol	Berlijn
1997	COP-3: Protocol signed	Kyoto
2001	COP-6 bis/ COP7: agreement on KP implementation	Bonn/ Marrakech
2005	Kyoto protocol in force/ COP/MOP-1	

UN Framework Convention on Climate Change

- Ultimate objective: stabilising greenhouse gas concentrations in the atmosphere at a 'safe' level
- Precautionary principle
- Principle of 'common but differentiated responsibility'
 - Industrialised countries (Annex-I) first: emissions in 2000 back at 1990 level
 - Annex-II countries assist developing countries with financing and technology (GEF)
 - Developing countries try to minimise emissions, but poverty eradication has priority
- Reporting mechanism
- Universal membership

Countries in Annex-I/ Annex-II



Kyoto Protocol

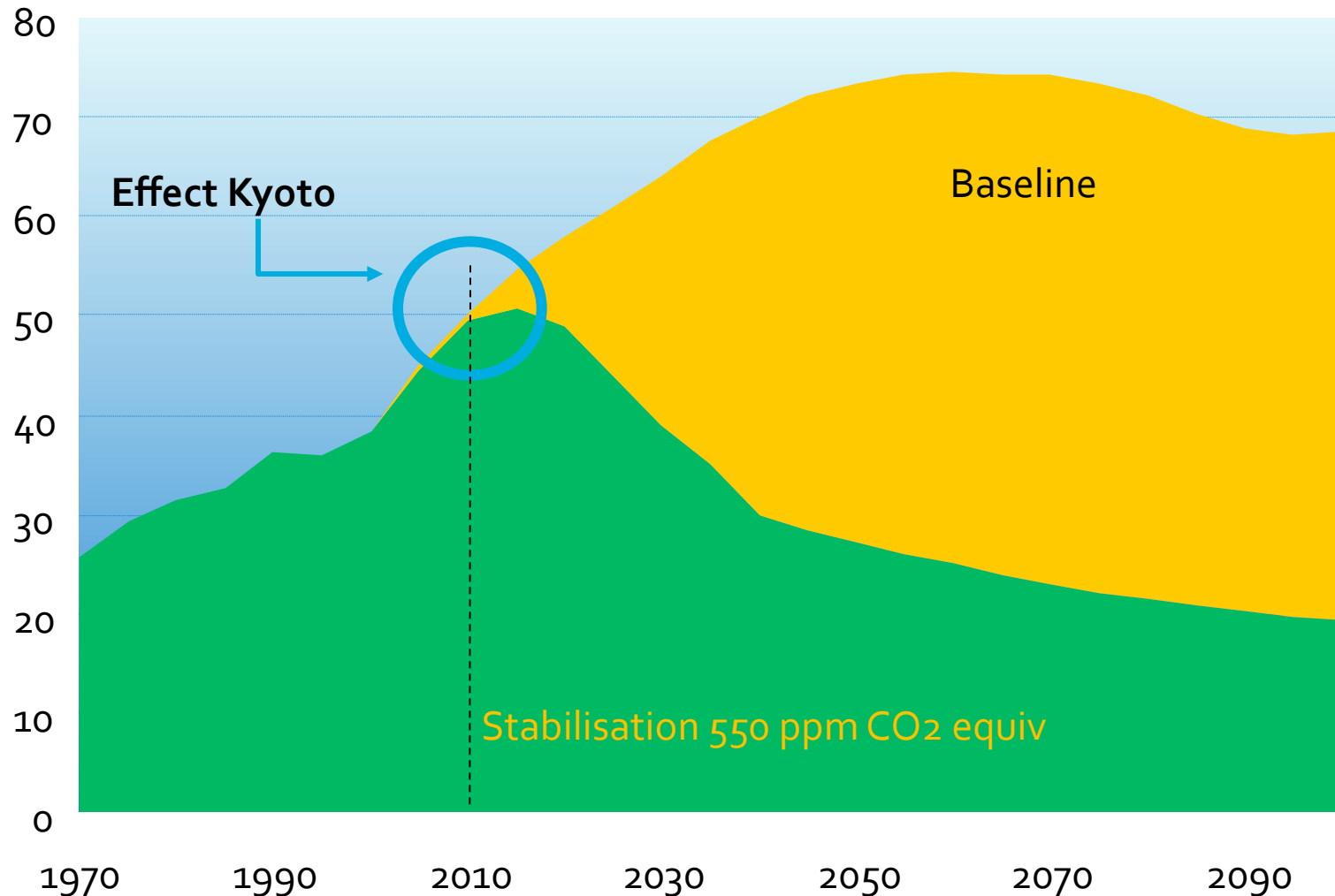
- Industrialised countries (Annex-I) reduce emissions in 2008-2012 (on average) with 5% wrt 1990/1995 for 6 gases + some 'sinks'
- Differentiation of targets: EU:-8%, [US:-7%], Japan:-6%, Canada:-6%; Russia:0% (surplus!), Australia:+8%
- Flexibility Mechanisms : Emission trading, Joint Implementation, Clean Development Mechanism (developing country action through co-funded projects)
- Minimise economic effects on developing countries
- 55% of 1990 Annex-I CO₂ emissions for entry into force
- Compliance: compensation + 30% penalty
- Additional funds for developing countries (Adaptation Fund, Special Climate Change Fund)

Kyoto Protocol in operation

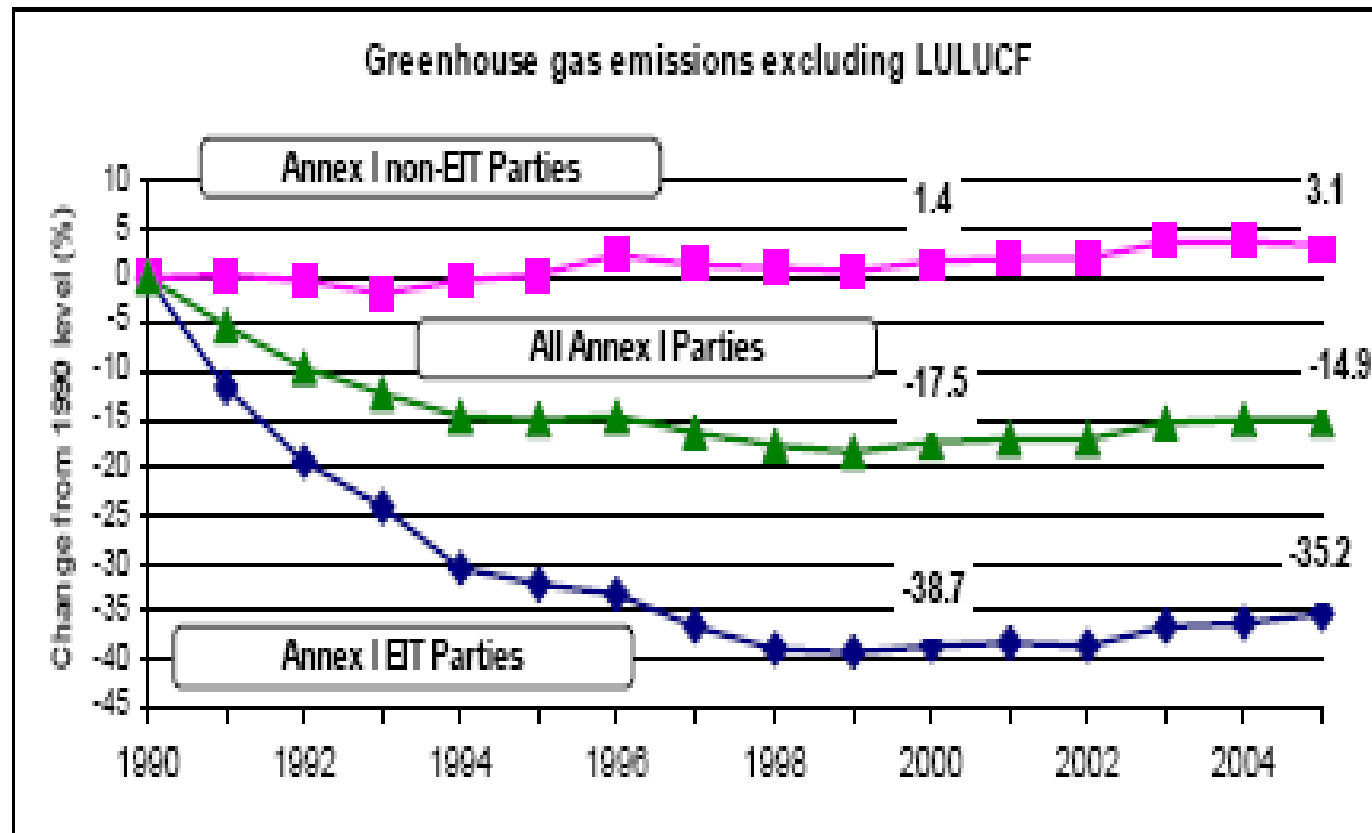
- 181 Parties
- Annex-I (collectively) on track to meet obligations
 - Energy efficiency
 - Shift To low carbon energy
 - Reducing industrial/ agricultural emissions
 - Planting forests
- CDM market:
 - Strong growth of volume (~6000 projects; >200 MtCO₂eq/yr till 2012, 600 MtCO₂eq/yr after 2012)),
 - But questions about additionality

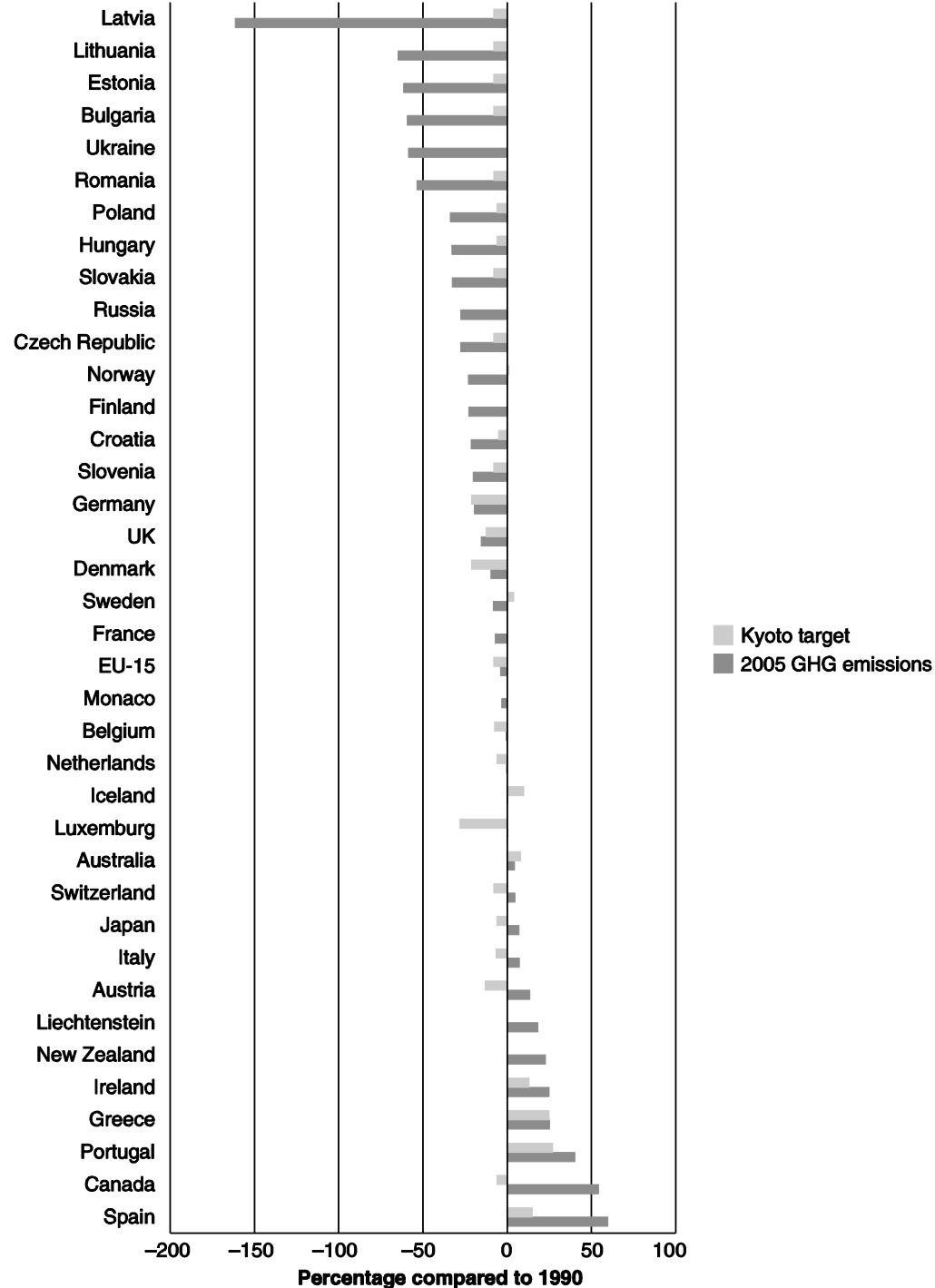
Many more Kyoto's needed

Global GHG emissions (GtCO₂ equivalent)

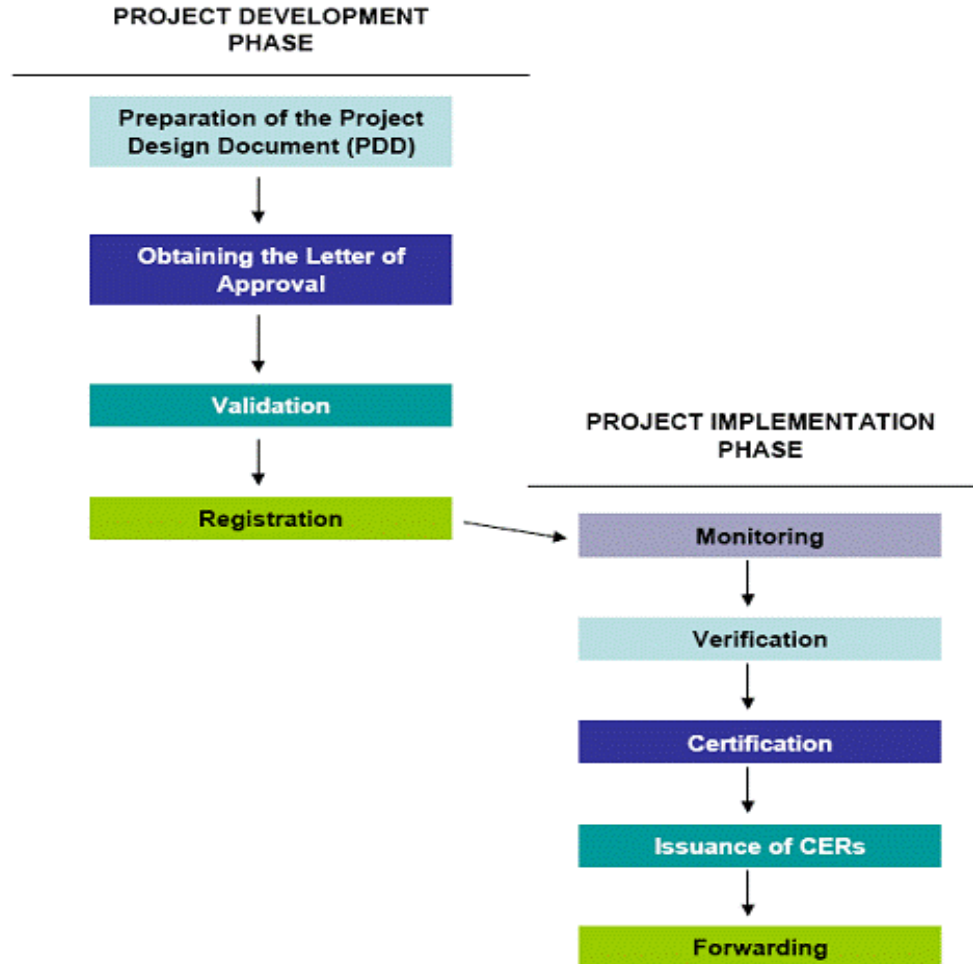


Annex-I GHG emissions 1990-2005 (excluding land-use change)

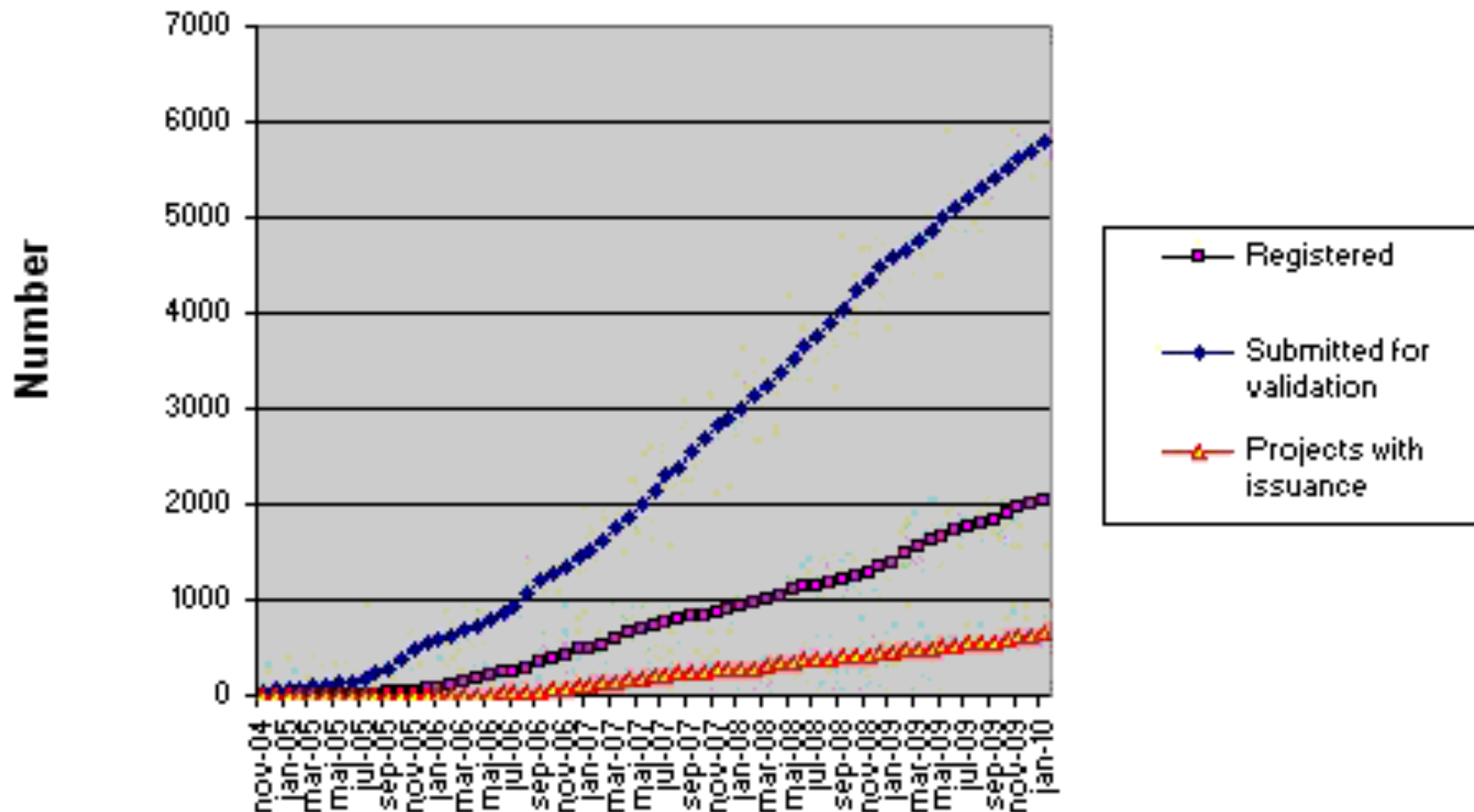




CDM process



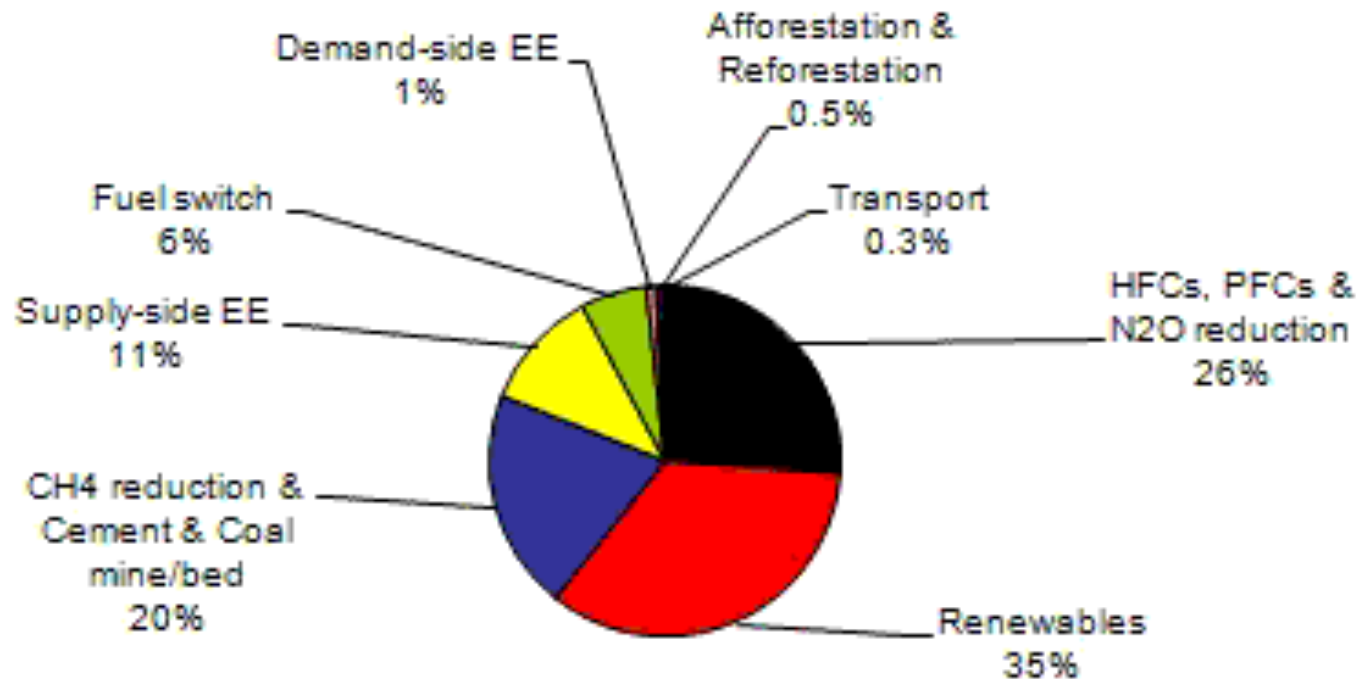
Number of CDM projects



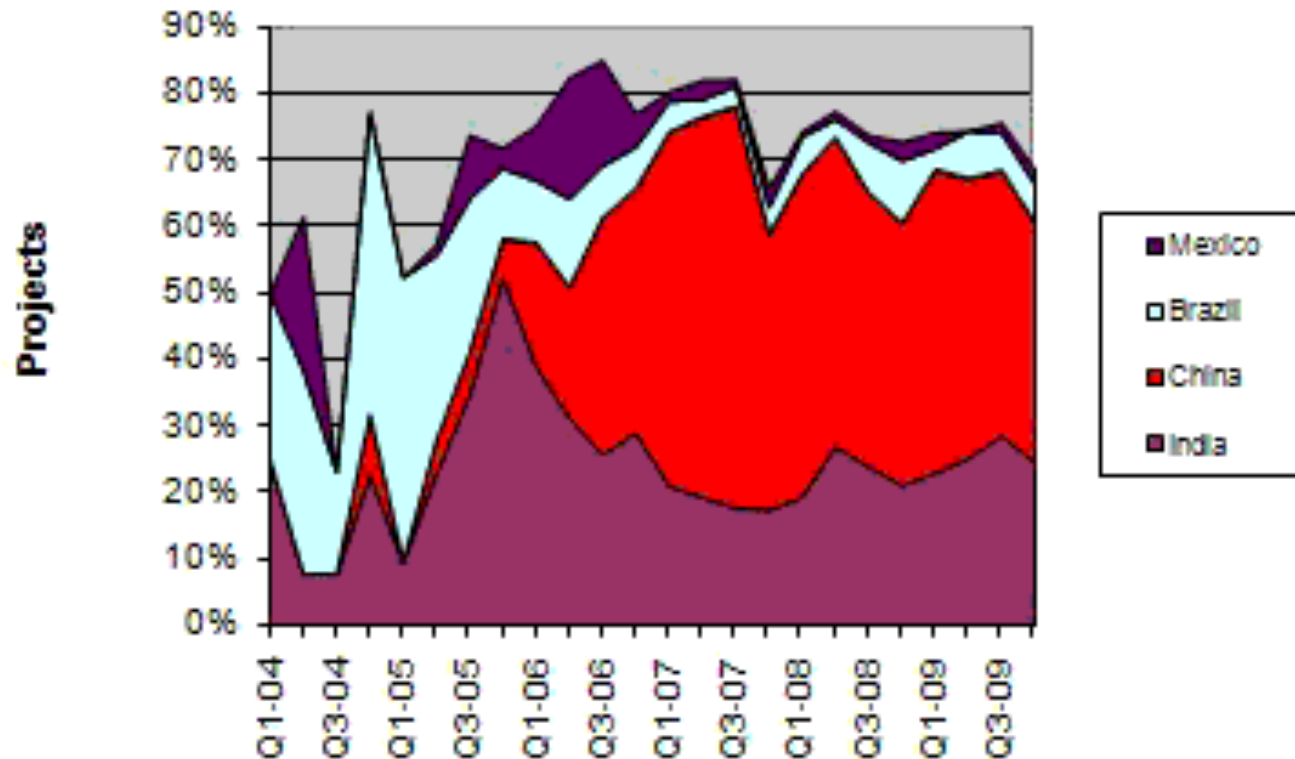
Expected amount of CERs

- 0.2 Gt CO₂eq/yr on average 2008-2012 (KP countries are supposed to reduce ~0.6 GtCO₂eq/yr)
- 0.6 GtCO₂eq/yr on average 2013-2020

CERs expected until 2012 (Feb, 2010'



Distribution of CDM projects 2004-2009



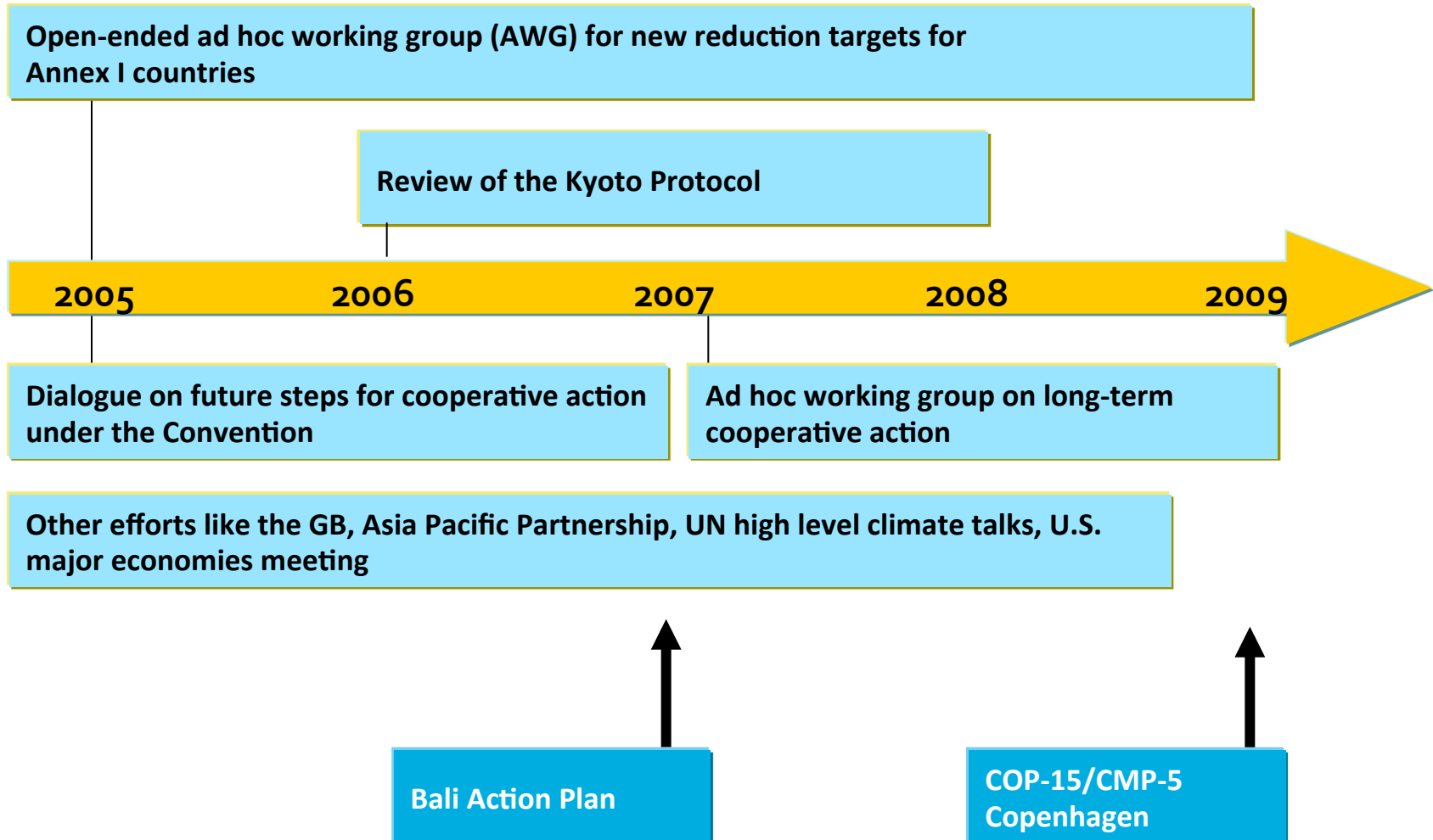
Additionality of CDM reductions

- BaU ambiguity
- Low cost/ no cost measures
- Strategic use of CDM funding
- Political influence on rule setting

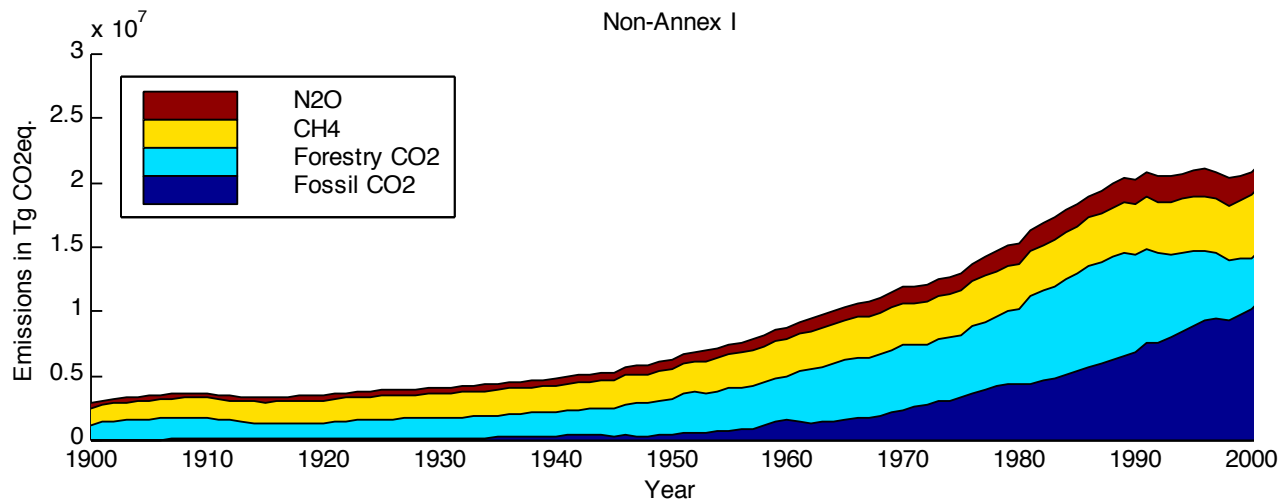
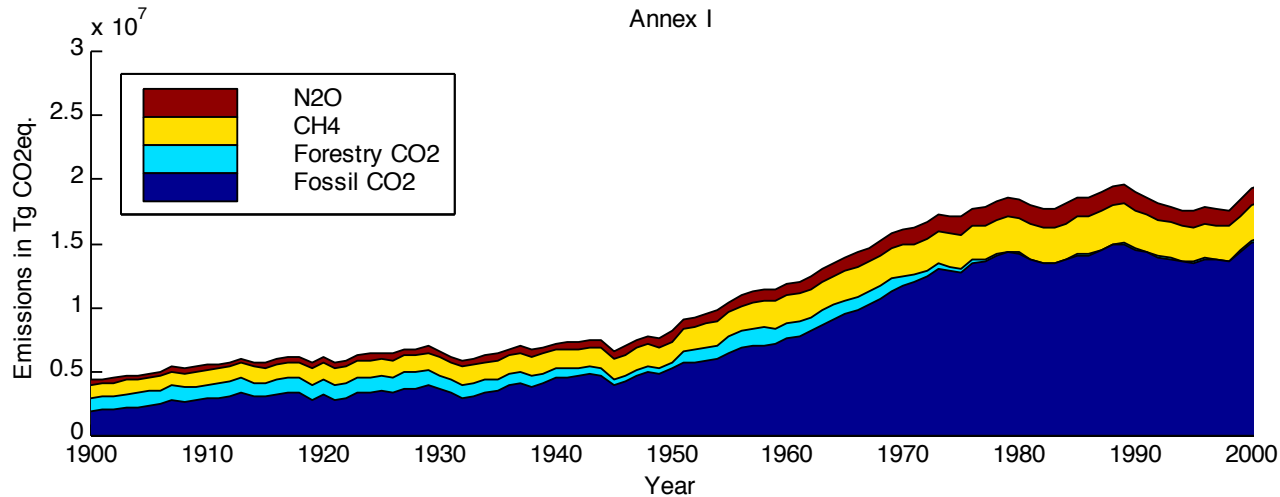
Institutional infrastructure

- Emission inventories/ National communications
- Carbon market
- Public private partnerships
- Private initiatives

A complex negotiation process

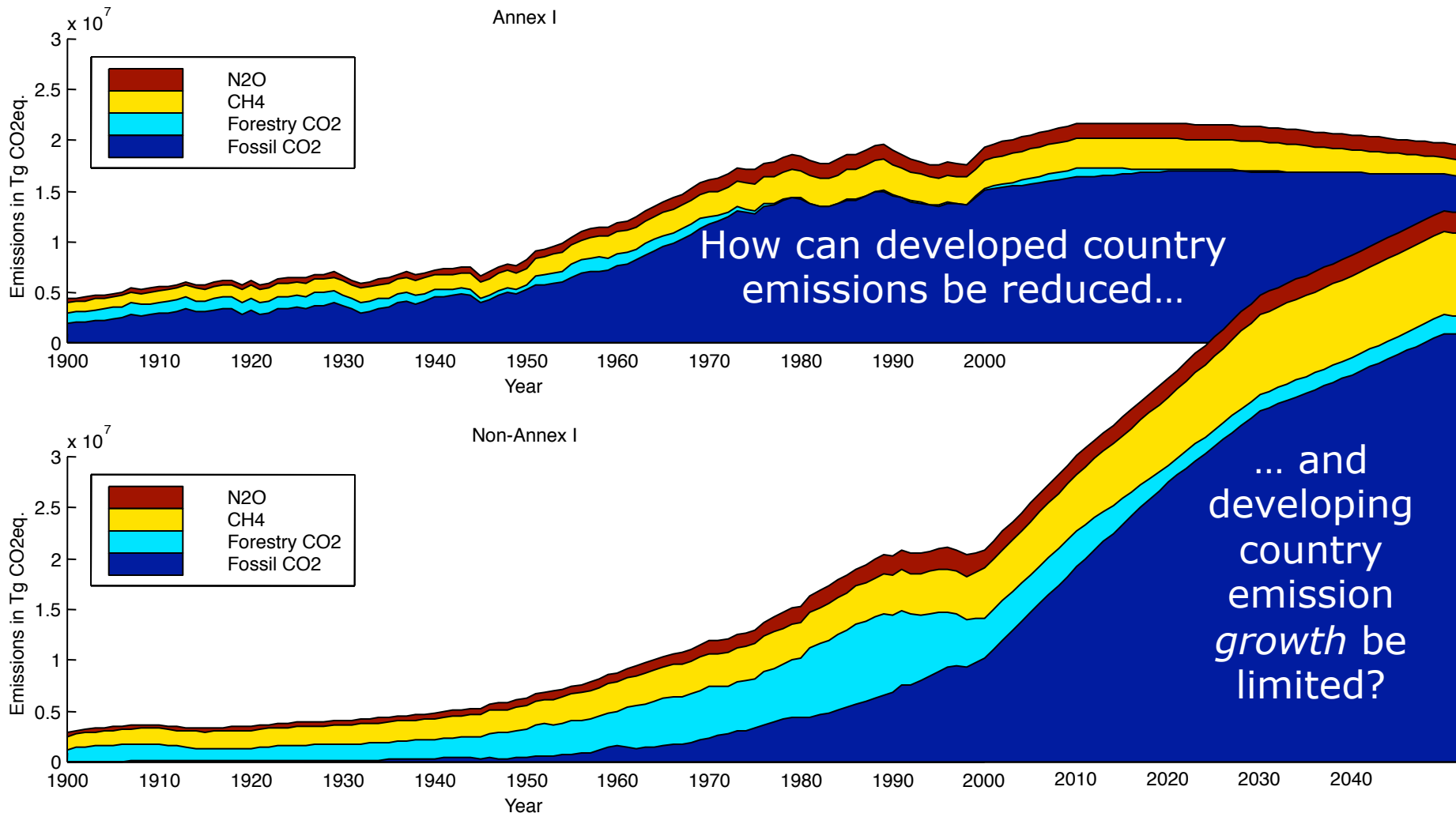


Historic emissions



Source: Ecofys/ Marland et al. / Houghton et al. / EDGAR 3.2

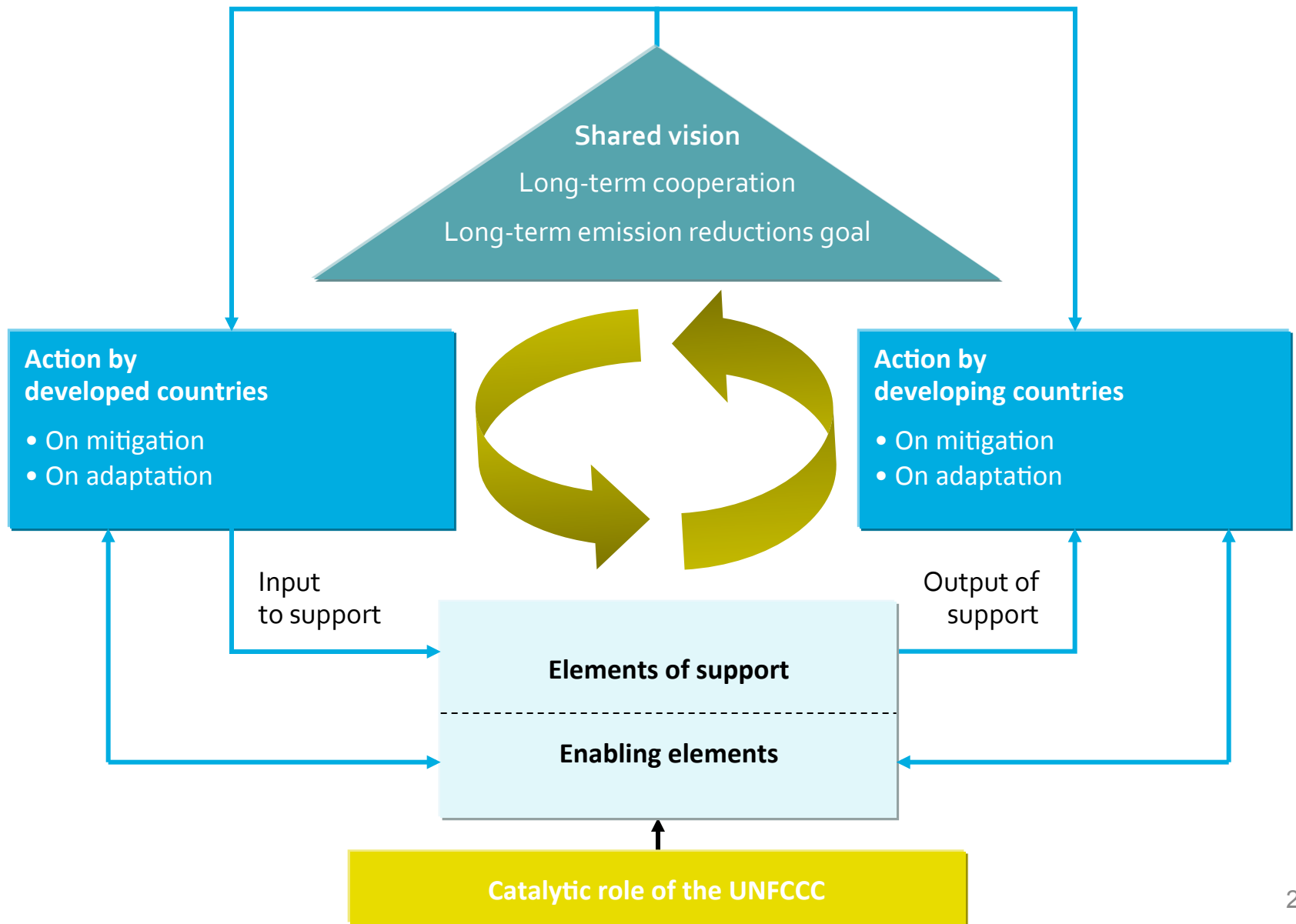
Future emissions



Source: Ecofys/ IPCC SRES A1B scenario

Key considerations of the Bali Action Plan

- Economic growth and poverty eradication are global priorities
- Deep cuts in global emissions are urgently required
- Step up action towards ultimate objective
- Reaffirm Convention principles



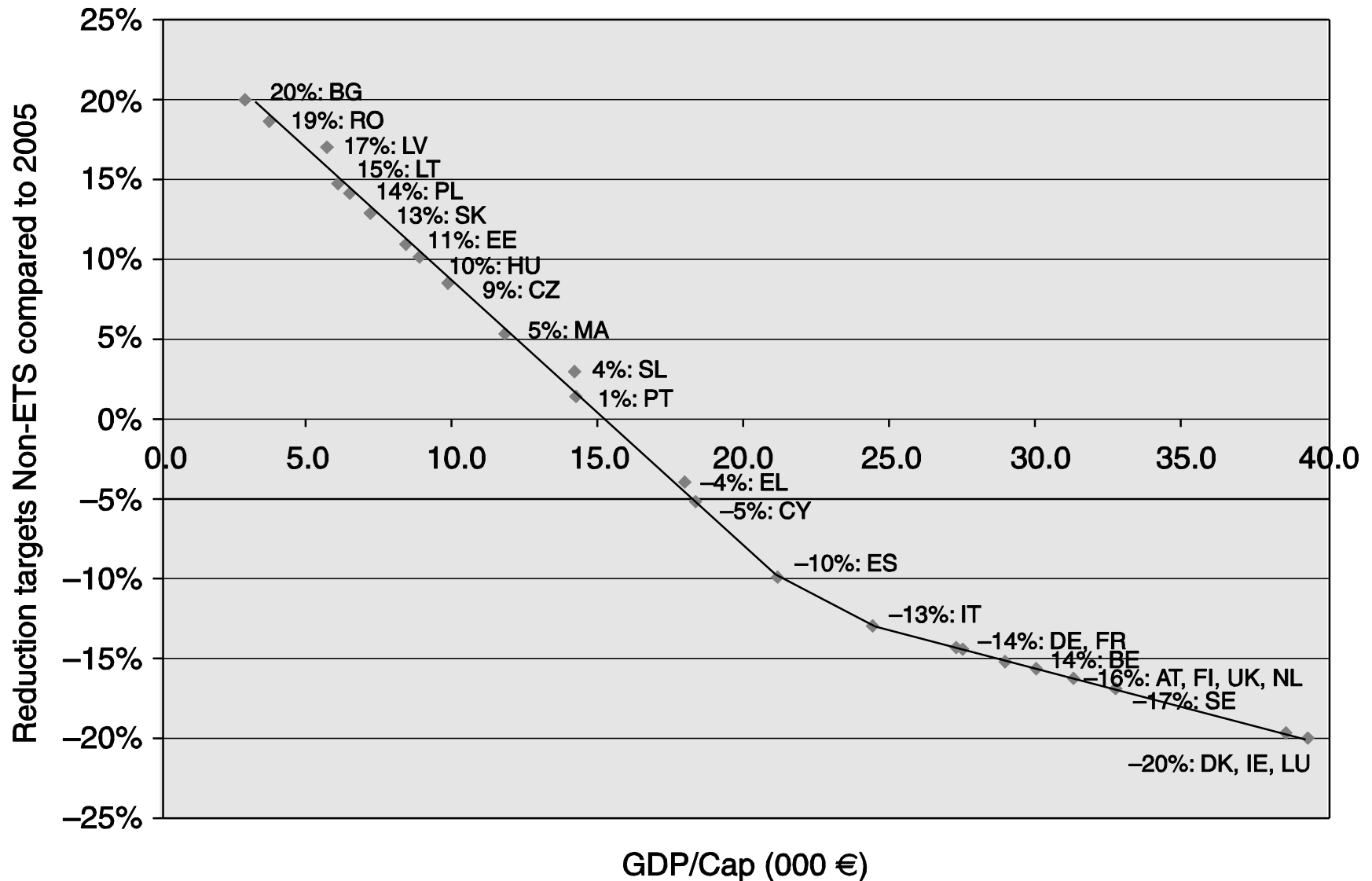
Implications for contributions by countries

Scenario category	Region	2020	2050
A-450 ppm CO ₂ -eq ²⁾	Annex I	-25% to -40%	-80% to -95%
	Non-Annex I	15-30% deviation from baseline in Latin America, Middle East, East Asia	Substantial deviation from baseline in all regions
B-550 ppm CO ₂ -eq	Annex I	-10% to -30%	-40% to -90%
	Non-Annex I	Deviation from baseline in Latin America and Middle East, East Asia	Deviation from baseline in most regions, especially in Latin America and Middle East
C-650 ppm CO ₂ -eq	Annex I	0% to -25%	-30% to -80%
	Non-Annex I	Baseline	Deviation from baseline in Latin America and Middle East, East Asia

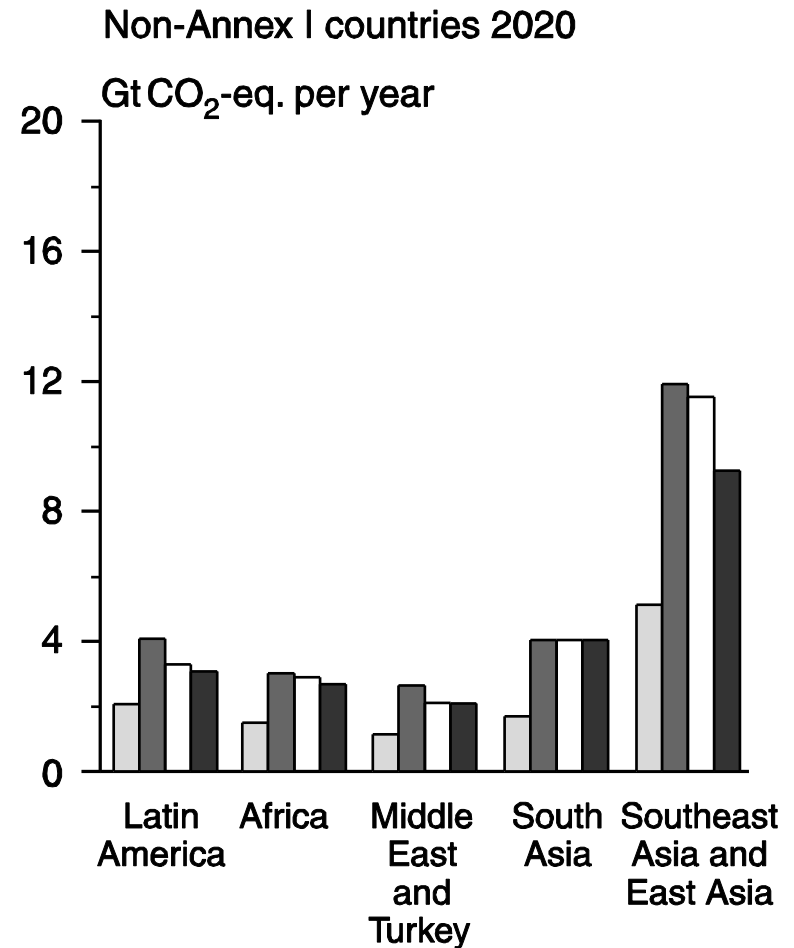
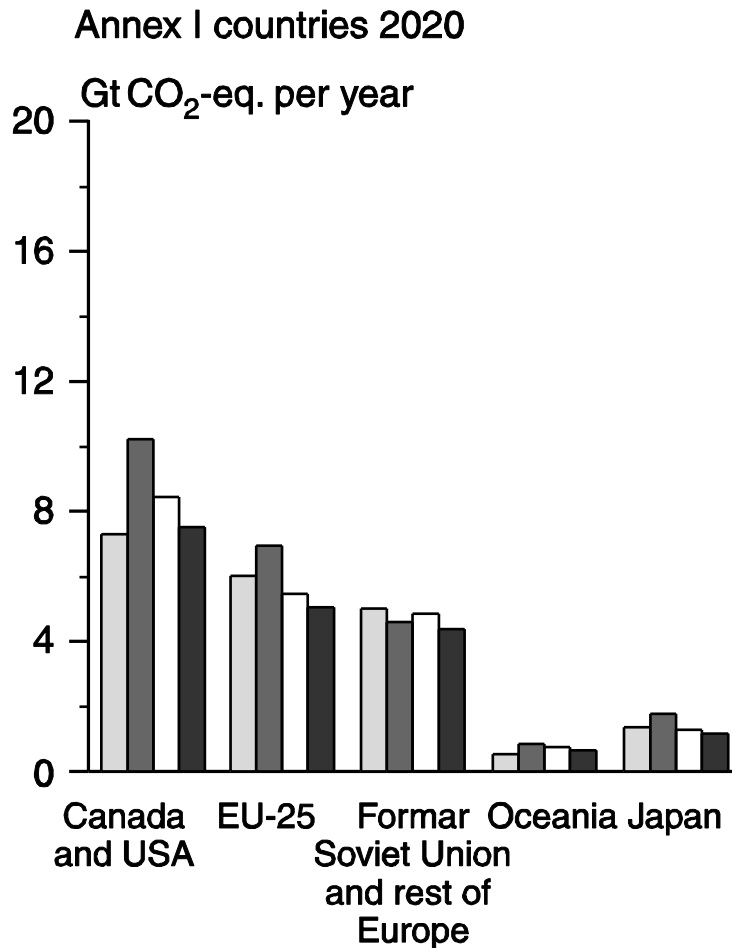
Who does what?

- Common but differentiated responsibility
- Post-Kyoto: all countries to contribute to emissions reductions
- “Formula” approaches
- Differentiation through action
- Financial support of developing country actions

EU27 effort sharing non-ETS sectors



Multistage approach



Emissions

1990

Baseline

Emission ceilings

550 ppm - multi-stage approach

450 ppm - multi-stage approach

Type of action

- Absolute emission ceilings (national, regional, sectoral)
- Relative emission ceilings
 - Per unit of product
 - Per unit of GDP (national, regional, sectoral)
- Best available technology approach
- Policies and measures

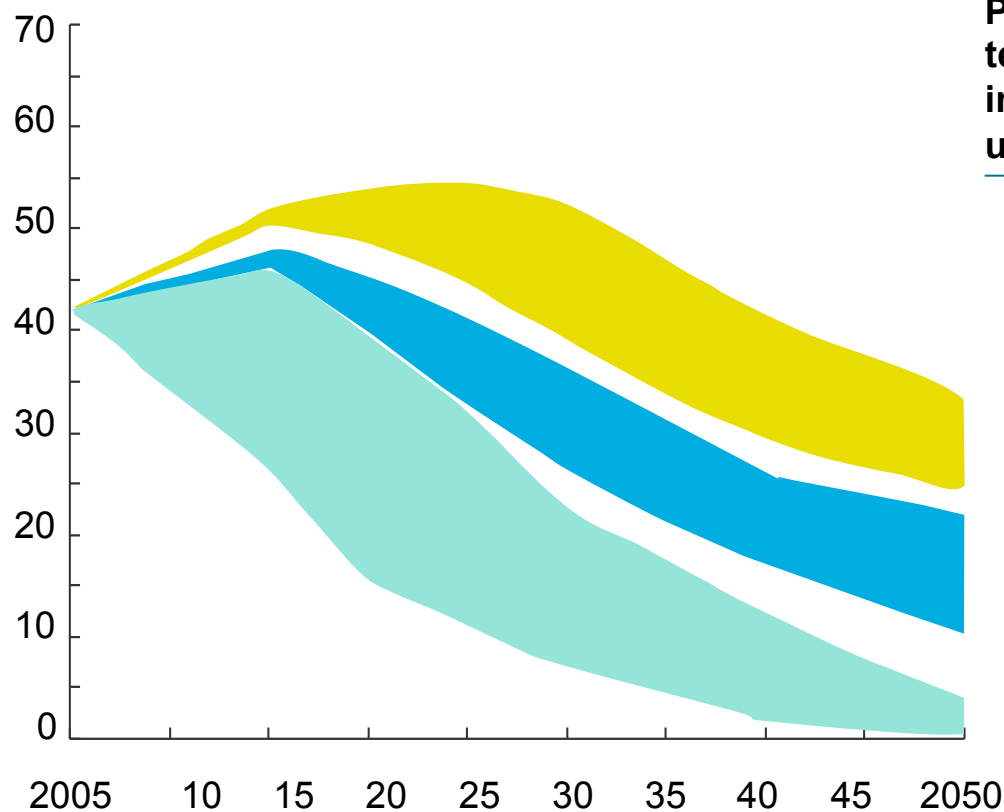
Finance

- Mitigation and adaptation in developing countries
- “New and additional”
- Investment vs incremental costs

Scientific evidence suggests that a 450 ppm CO₂e pathway gives a 40–60% probability to limit global warming to 2°C

Global GHG emissions and pathways for GHG stability

Gt CO₂e per year



- Peak at 550 ppm, long-term stabilization 550 ppm
- Peak at 510 ppm, long-term stabilization 450 ppm
- Peak at 480 ppm, long-term stabilization 400 ppm

Probability of
temperature
increase
under 2°C

Expected
temperature
increase

15-30%

3.0°C

40-60%

2.0°C

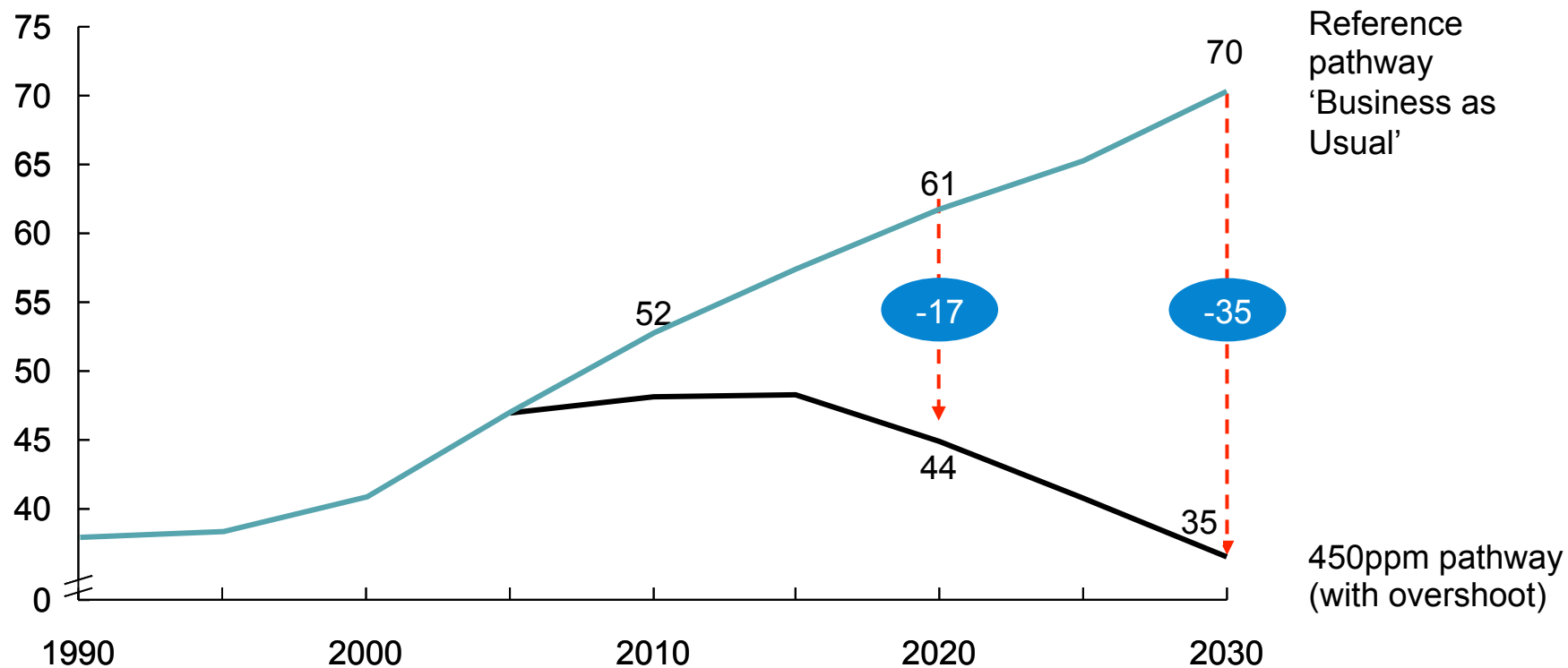
70-85%

1.8°C

- 450 ppm is minimum – it has a 40–60% probability of warming exceeding 2°C
- Even 2°C will require significant investment in adaptation

17 Gt of reductions below “Business as Usual” in 2020 are required for a 450ppm, 2°C pathway

Global GHG emissions, Gt CO₂e per year



Change relative to 1990 for 450ppm pathway
Percent

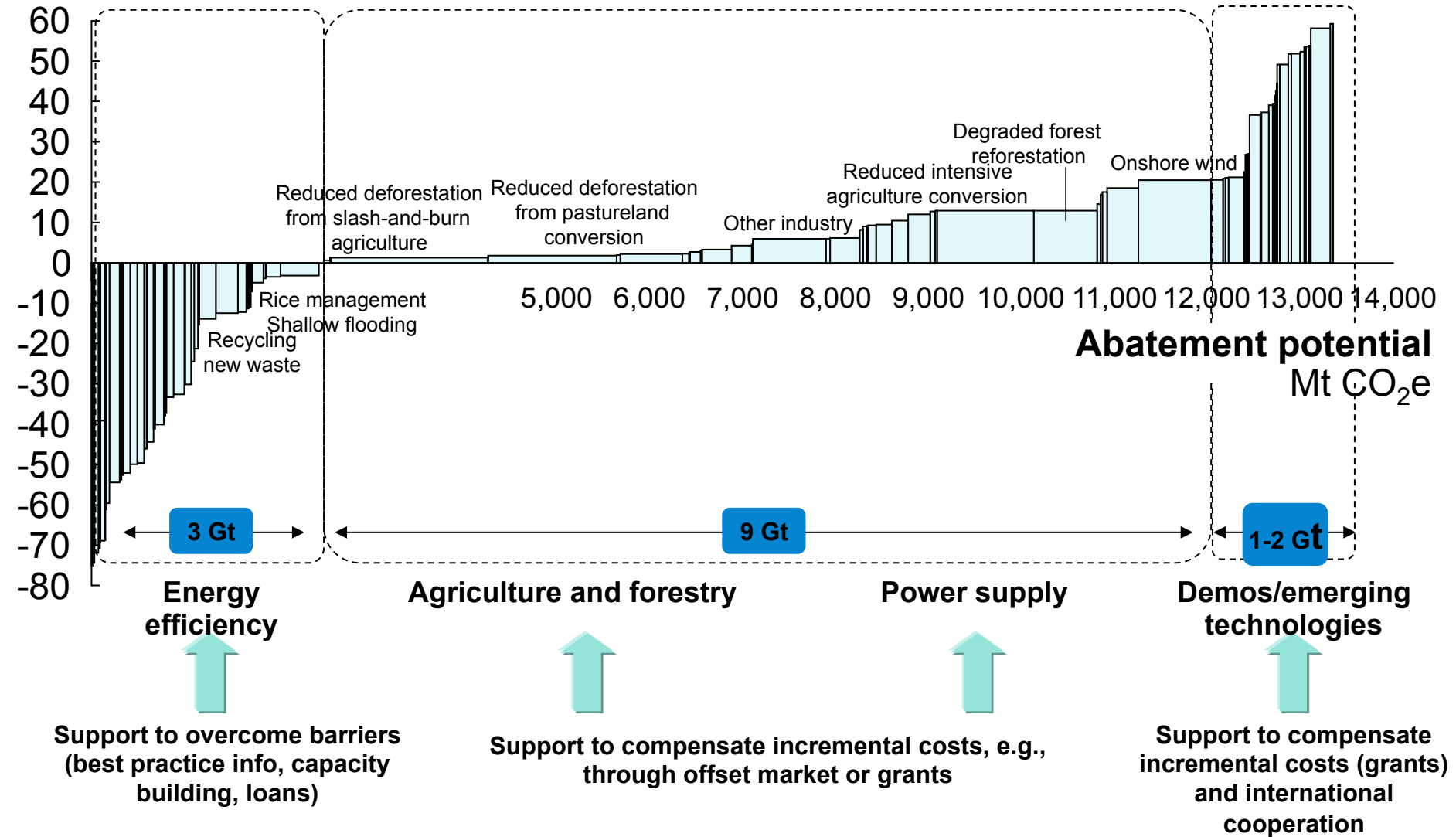
+17%

-7%

Developing countries require different types of financial support for mitigation activities

Developing country cost curve, 2020 (up to €60/tonne, 10% discount rate)

Abatement cost, €/tonne CO₂e

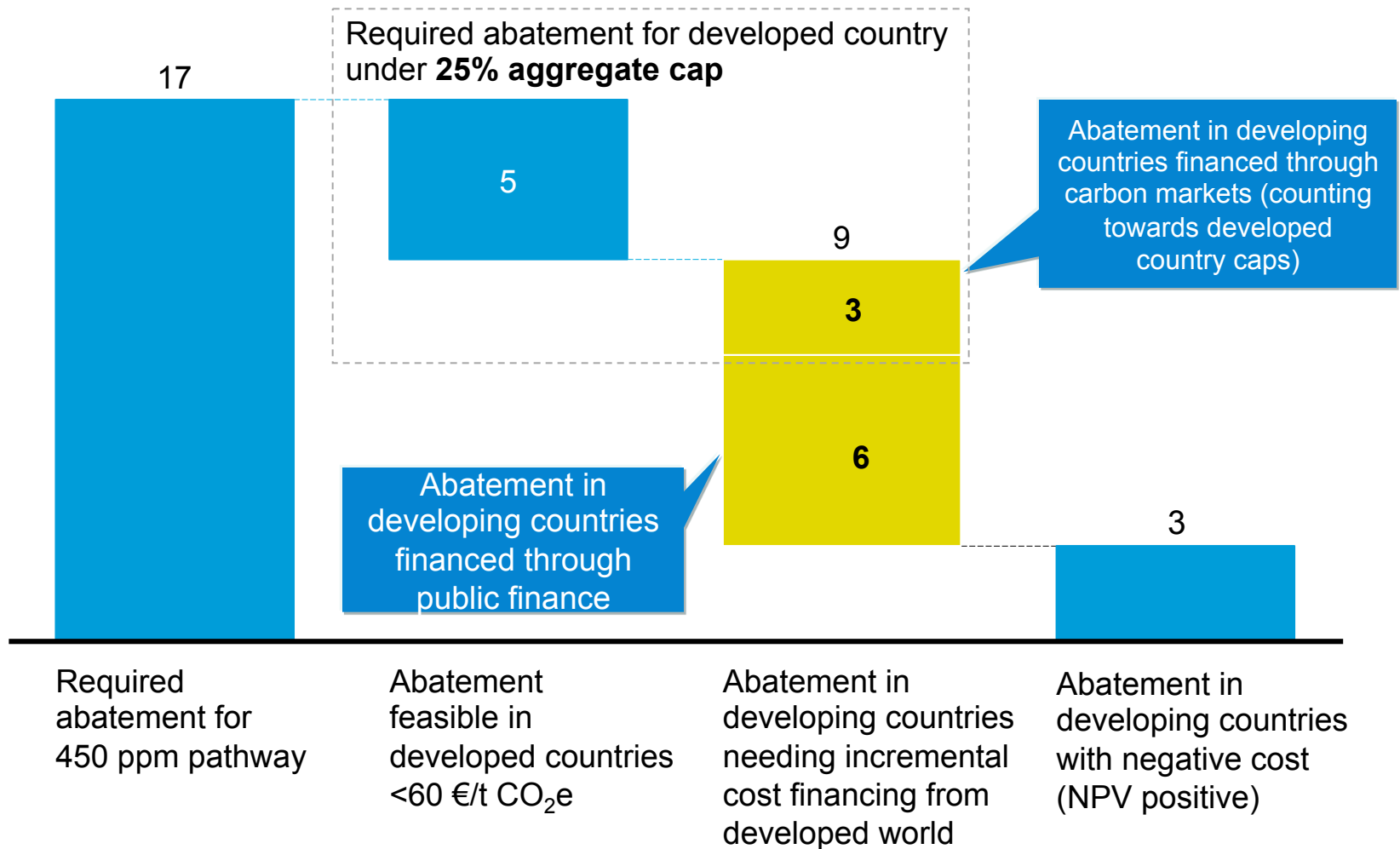


IPCC: for 2 degrees scenario emissions 25-40% below 1990 for developed countries collectively

The split of the required abatement in 2020

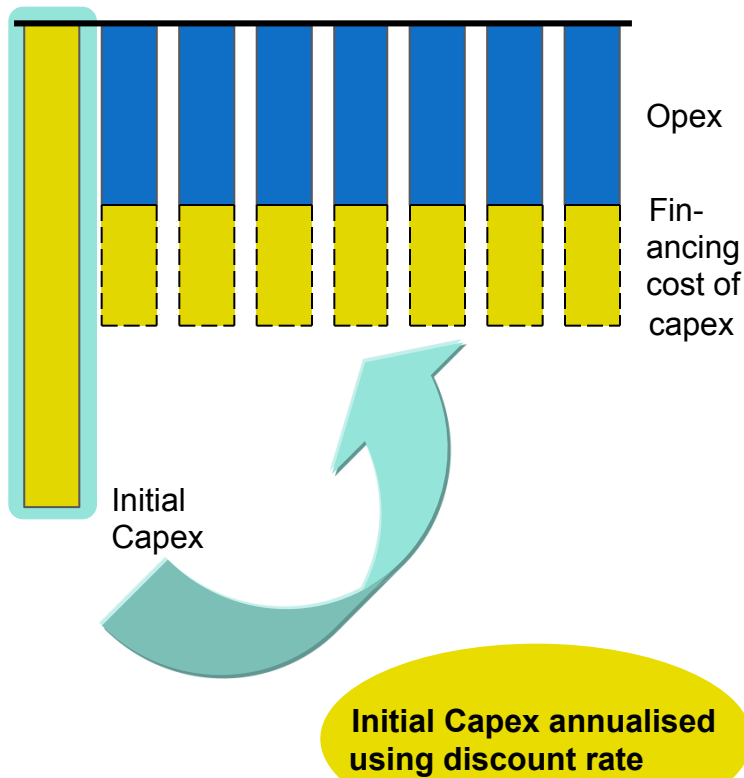
Gt CO₂e, 2020

Abatement needing additional financing (to meet incremental costs) from developed world

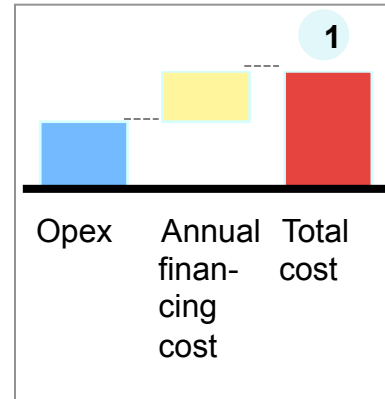


Investment versus incremental cost

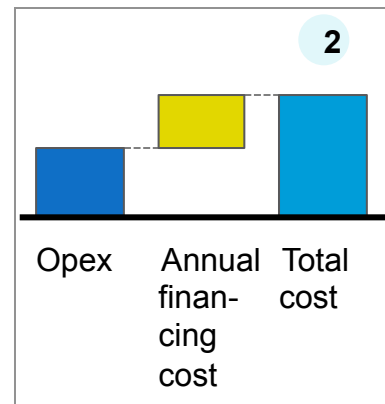
Cash flow profile of abatement project



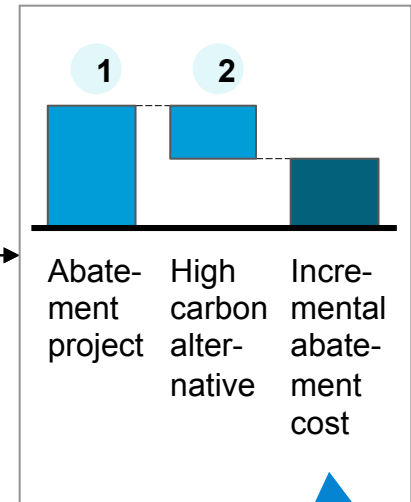
Abatement project



High carbon alternative



Annual incremental cost



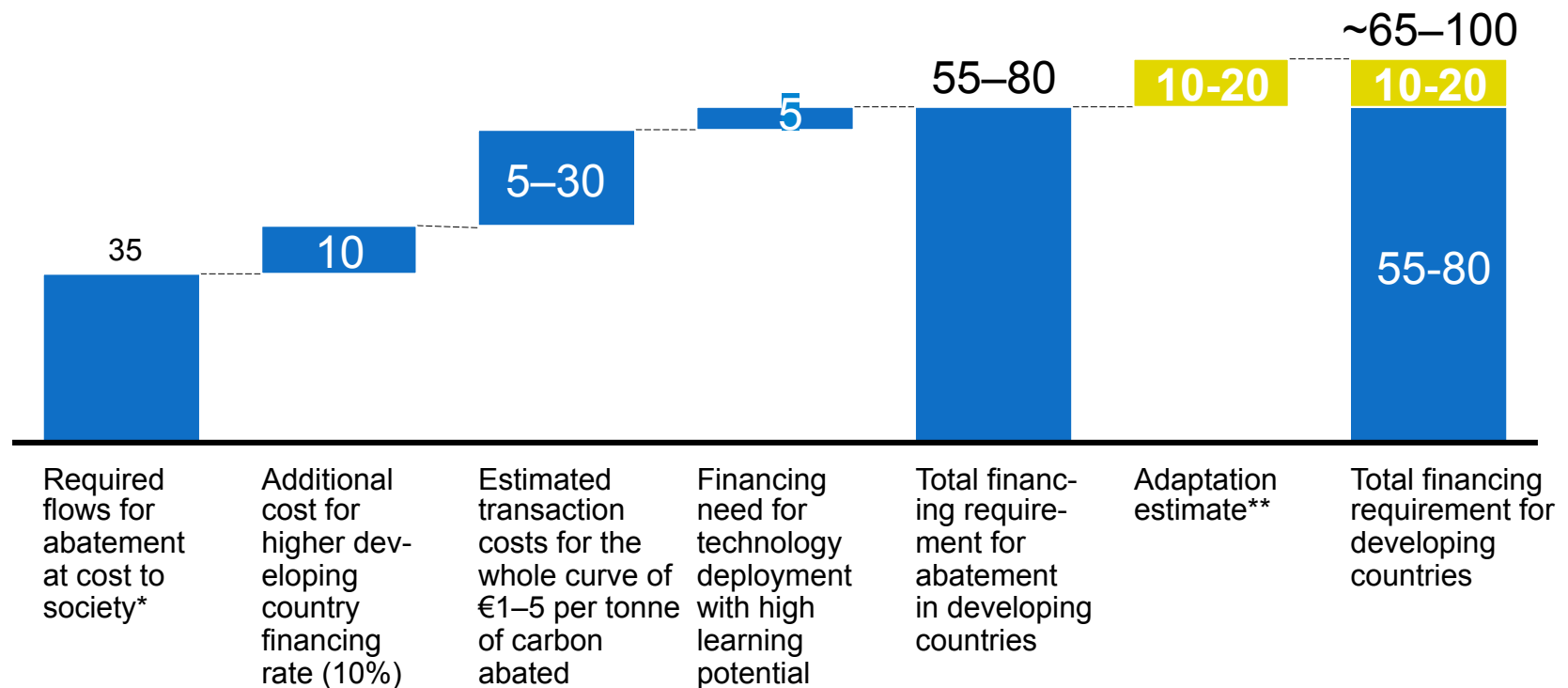
Financing flows are the annual income support required to cover incremental cost relative to high carbon alternative

Annual funding flows of €65-100 billion are required in developing countries, following the principles of the UN Framework Convention

Developing country financial requirements

€ billion on average p.a. 2010–20 (excluding self-financing)

■ Costs of 12 Gt of abatement in developing countries
■ Adaptation cost



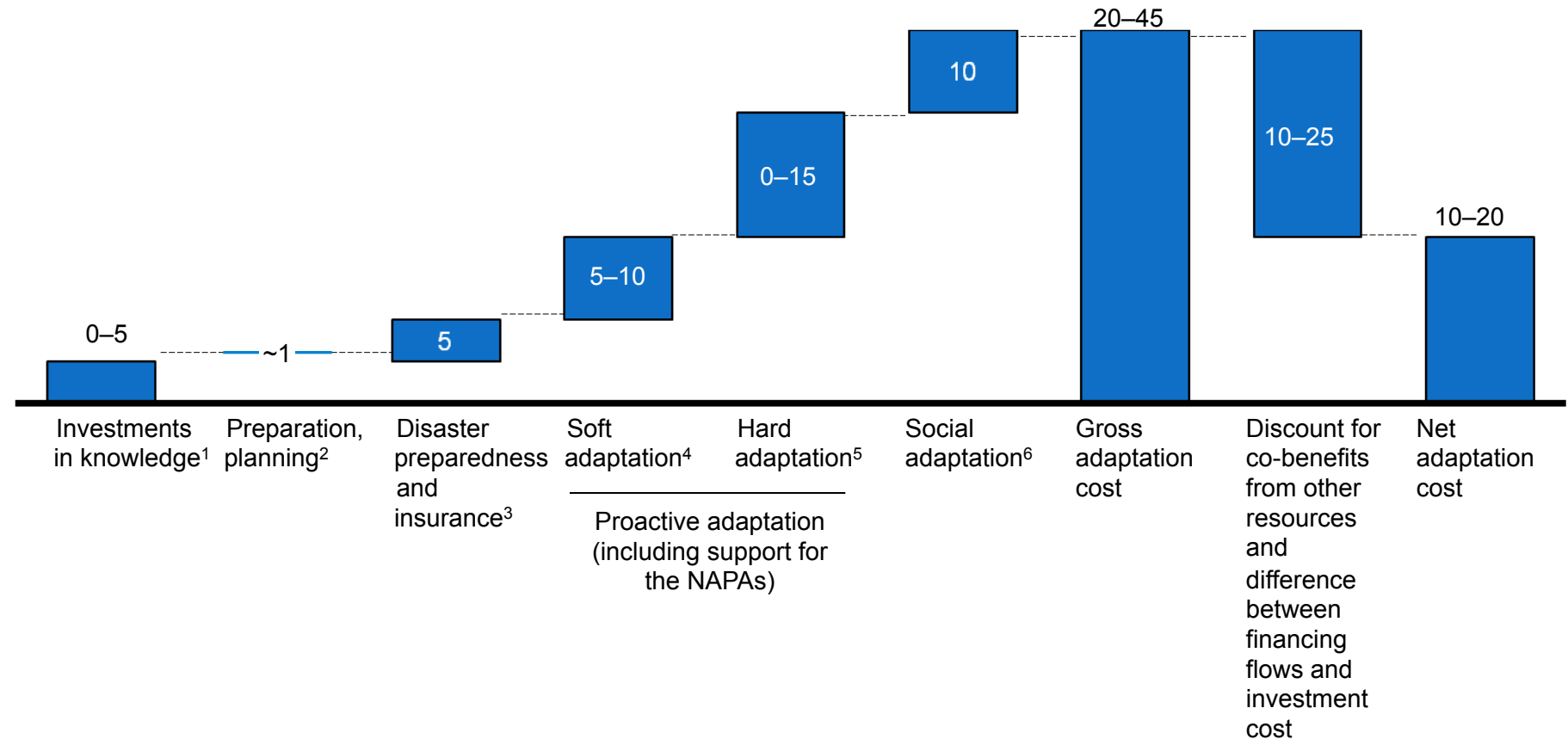
* Assumes all abatement delivered at average cost; 4% discount rate

** Based on increased financing for global public goods (incl. research), expected funding required for priority investments for vulnerable countries (based on NAPA cost estimates), and provision of improved disaster support instruments (based on MCII work)

Source: McKinsey Global GHG Abatement Cost Curve v2.0; Bosetti; Carraro; Massetti; Tavoni; UNFCCC; Project Catalyst analysis

Project Catalyst estimates between €10-20b per annum are required through 2010-20

Average annual adaptation cost 2010–2020, € billion



1 Based on benchmarking of existing leading institutions (e.g., NOAA, NASA, Met Office, CGIAR)

2 Calculated on the basis of costs of Pilot Programme for Climate Resilience in ten countries, scaled to all developing countries

3 Based on Munich Climate Insurance Initiative proposal

4 Based on annualised NAPA cost estimates – using median NAPA cost to scale to all developing countries

5 Derived from UNDP cost estimates for "climate proofing investment"

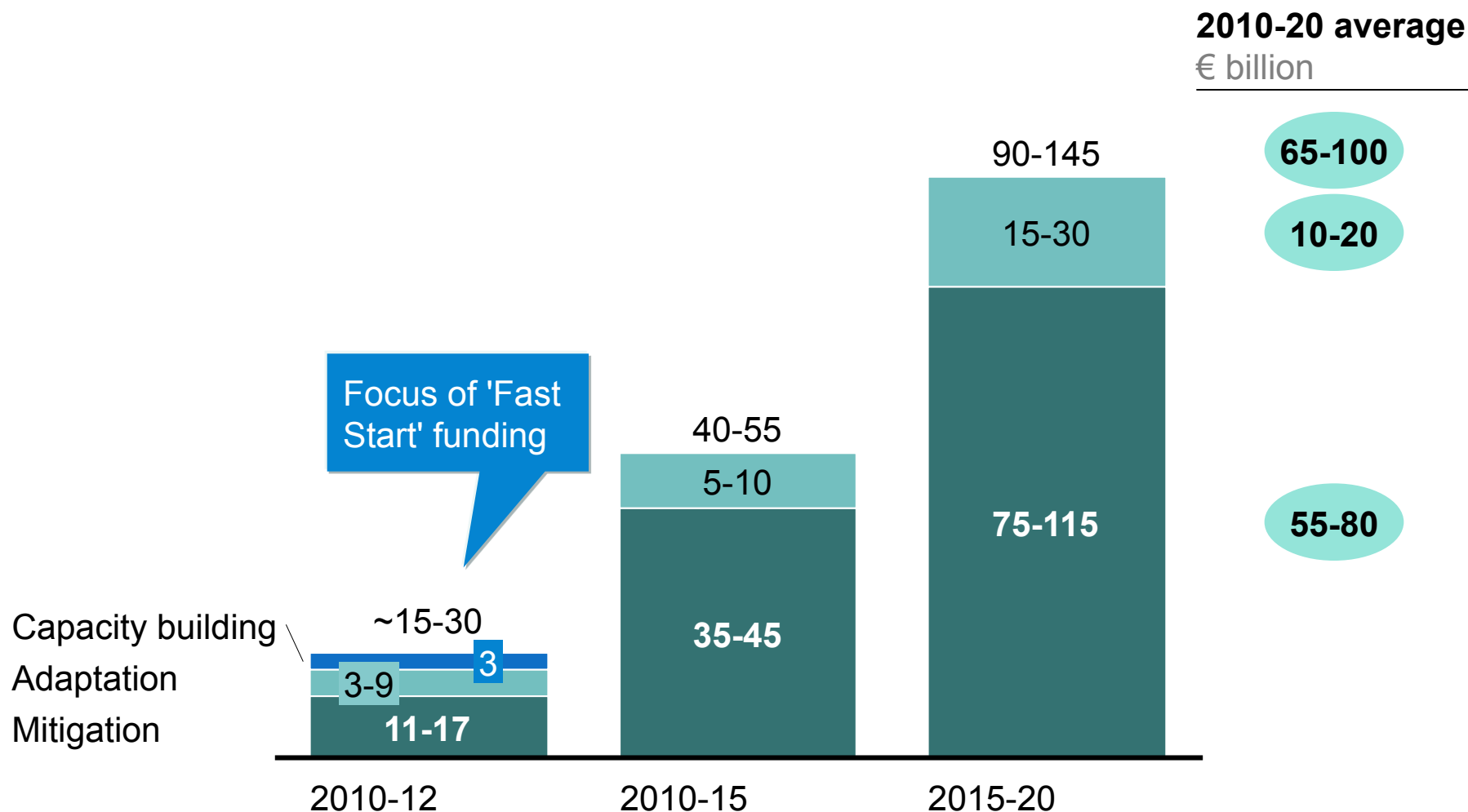
6 Derived from UNDP cost estimates for social adaptation

Source: NASA; UK Met Office; NOAA; CGIAR; UNFCCC; NAPAs; Munich Climate Insurance Initiative; EM-DAT International Disaster database; Project Catalyst

Project Catalyst estimates the financing needs will ramp up from
€15-30 bn per year to €90-145 bn during the 2010-2020 period

Developing country financing needs

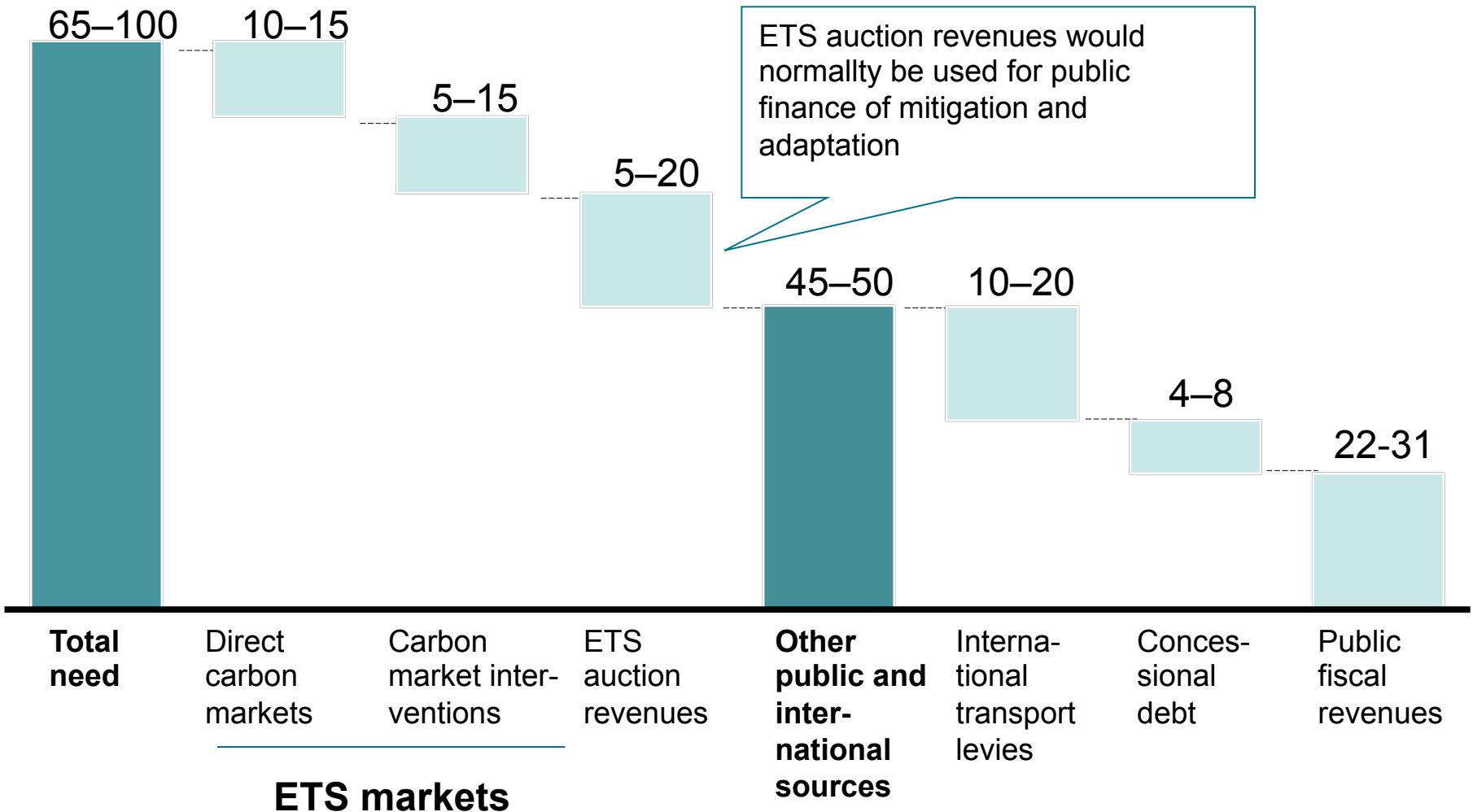
€ billion (annual averages)



The developing country financing need can be met by a combination of direct and indirect carbon market financing and public finance

UNDER 25% CAP

Financing needs and sources assuming 25% caps in developed countries € billion, annual average 2010–20 rounded to nearest € 5 billion



How can international agreements promote the development and diffusion of low carbon technology?

- Development:
 - Increase R&D
 - Finance big demonstration programmes
 - Create centres of excellence for R&D in developing countries
- Diffusion
 - Generate incremental cost finance
 - Create Innovation Centres in developing countries
 - Facilitate licensing of patented technologies

Copenhagen

- Inability to conclude 2 year negotiation process
- Acrimoneous process
- Political declaration (not unanimous) >> Copenhagen Accord
- Not on track to limiting warming to 2 degrees
- Decisions to continue negotiations, aiming at completion at COP 16/ Mexico (Nov/Dec 2010)

Copenhagen Accord(1/3)

In	But	Consequence
Recognising 2 degree limit	<ul style="list-style-type: none"> •No reduction commitments to get there; • Targets/actions likely to get in far below top end 	We are on track to 3-4 degrees; chances of staying below 2 degrees virtually zero
Review in 2015 with option to tighten global limit to 1.5 degrees	No strengthening of 2020 reduction commitments	This is lip service to vulnerable countries; has no practical impact; does not increase chance to stay below 2 degrees
Annex I countries to list their 2020 targets and non-Annex-I PART of their actions by Feb 1, 2010	<ul style="list-style-type: none"> •Terms “developed” and “developing”(as in Bali Action Plan) disappeared; •Accounting rules NOT uniform; nothing about surplus AAU; •No benchmark on how much they do 	<ul style="list-style-type: none"> •Including “new developed countries” impossible; •Big loopholes on value of targets; •No pressure on maximizing reductions

Copenhagen Accord (2/3)

In	But	Consequence
Stressing importance of adaptation and provide about half of \$30 billion in support 2010-2012	Money likely to be at least partly relabelled ODA	Vulnerable countries are getting financial support, while climate change impacts are getting much worse
“we support the goal to mobilise \$100 billion by 2020 “; public and private money	<ul style="list-style-type: none">•No commitment to deliver this money;•No mechanisms to generate funding;•No governance structure to manage effective disbursement	Unclear if there ever will be significant money
Copenhagen Climate Fund established	<ul style="list-style-type: none">•Nothing how to fill the fund•Nothing on governance (only Panel to study resources)	Unclear if fund will ever be operational

Copenhagen Accord (3/3)

In	But	Consequence
Establish a REDD + mechanism”	Nothing established and no process to establish it; no rules	Fast start money will partly flow to countries to avoid deforestation; rest unclear
Establish a technology mechanism	No details Negotiations aiming at administrative approach	No effective mechanism to promote technology transfer
Develop market approaches	Nothing about reforming carbon market No hard caps> no market?	No agreement on CDM reform International carbon market uncertain
“provide incentives to developing countries to continue on a low emissions path”	Nothing about Low Carbon Growth Plans	No impact on producing low carbon development plans

CopenhagenDecisions

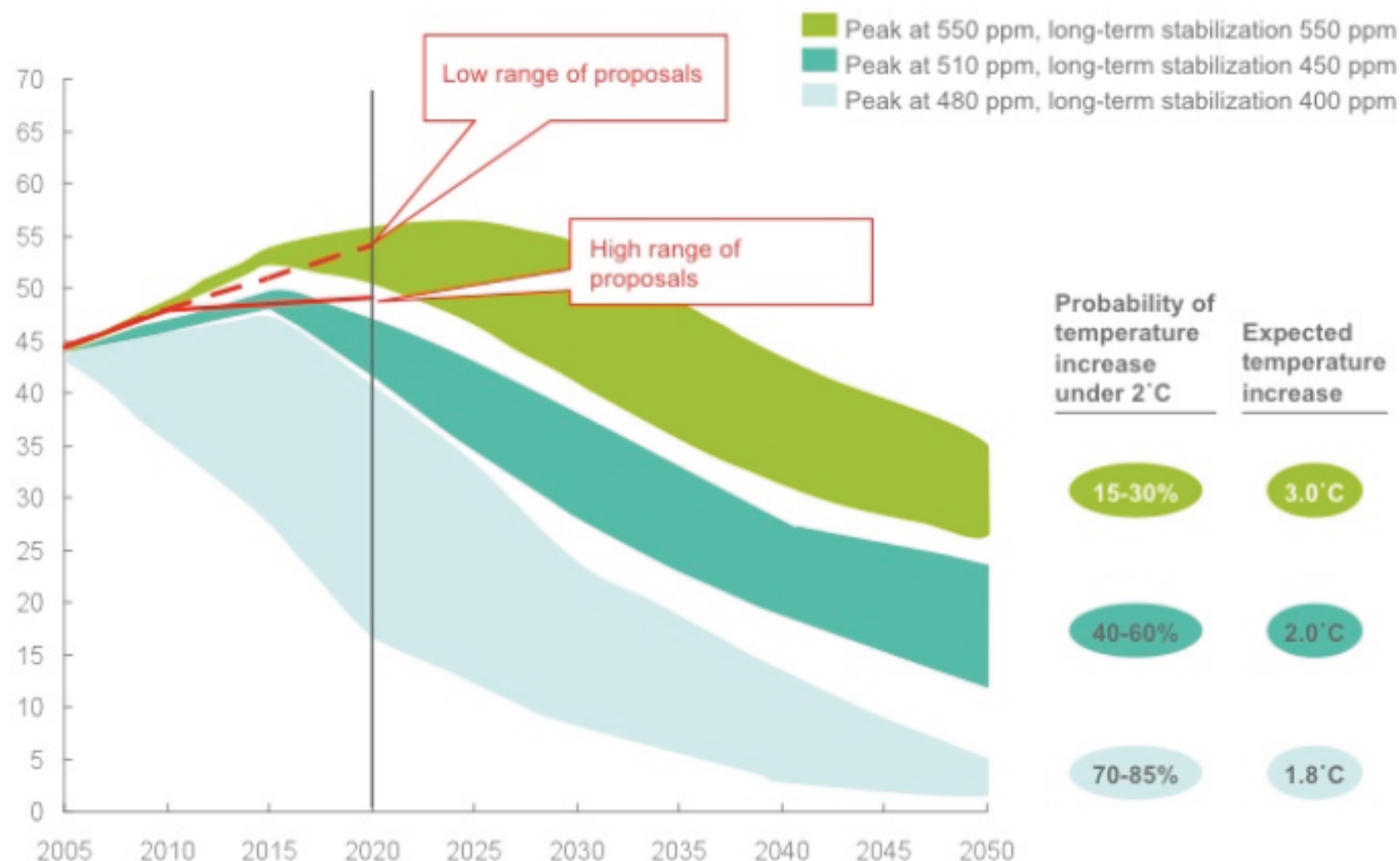
In	But	Consequence
Decision to continue AWG-LCA and request to deliver outcome by COP16	No statement on legally binding outcome; no process decisions; vague paragapah on Mexico mandate	Totally unclear if there will be serious negotiating process (also in light of acrymoneous debates in CPH)
Decision to continue AWG-KP and request to deliver outcome at COP16	Demands of EU, Japan, Russia , Australia to have legally binding outcome (=Protocol) from LCA ignored; vague paragapah on Mexico mandate	Kyoto Annex B countries may never agree with KP amendment or never ratify

Status of Copenhagen Accord

- Developed countries:
 - 42 presented (conditional) reduction targets
 - implement CA as freestanding agreement (formally associated themselves with it)
- Developing countries:
 - 44 presented information on their intended actions
 - absolutely no implementation of CA; is just an input into UNFCCC negotiations (most did not associate themselves with it)

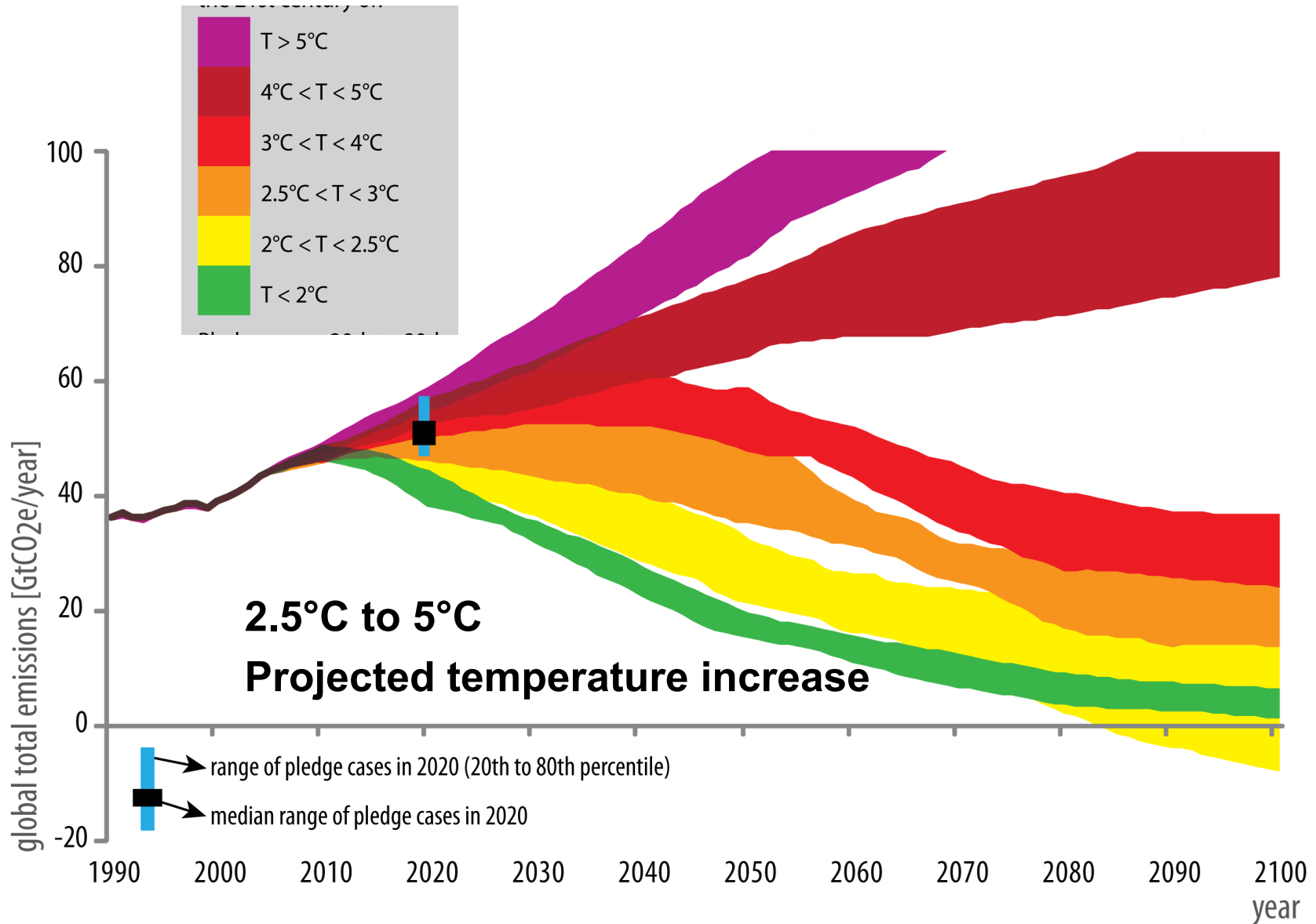
Exhibit 2 – Potential emission paths

Global GHG emissions and pathways for GHG stability, Gt CO₂e, 2020



Source: IPCC WG3 AR4; den Elzen, van Vuuren; Meinshausen; McKinsey Global GHG Abatement Cost Curve v2.0; Project Catalyst analysis

Current pledges: aiming for 2.5-5 °C above pre-industrial by the end of the century



What are the reasons for the Copenhagen failure?

Power has shifted

- US, China (plus India, Brazil, South Africa, =BASIC) now the real powers
- Their current interest is not to have binding deep GHG reductions
- China client states using process to counter developed country positions

UNFCCC process ineffective

- G77 interpretation of Bali Action Plan prevents effective outcome (blocks one new Protocol)
- Top down role of AWG Chairs (and COP presidency) blocked over entire 2 year process; chairs did not force a clash earlier
- Vulnerable countries support China and Saudi Arabia in exchange for money
- Blocked majority voting (by OPEC) paralyses process

US domestic politics

- Hypocrisy on binding others and demanding total freedom for US
- Fixation on China and necessity to have trade sanctions in domestic climate law forces China into defensive attitude (no commitments, no verification)

EU lacked vision

- Zigzagging on legal outcome
- Strategy too dependent on others (only -30% if others comparable, keeping long-term finance till concessions of G77)
- Not prepared for power play

Implications of Copenhagen

- Unclear how UNFCCC process can deliver ambitious legally binding treaty by COP16 (Cancun)
- MEF/G20 not effective if delinked from UNFCCC
- Focus shifts to like-minded country actions (REDD, Fast-Start Finance for adaptation and mitigation, policy coordination)
- National actions become more important, and trade measures more likely (self interest)
- Moving towards “low carbon prosperity” paradigm could unlock the situation

Results of Cancun COP 16

- CA embedded in formal UNFCCC decisions
- Many new administrative institutions and process arrangements
- 2 degrees max warming (preferably 1.5 degrees) included
- Low Carbon development paradigm acknowledged
- Legal issues not solved
- Negotiations continue

Prospects for COP 17 South Africa

- ***Find enough common ground*** to produce an effective outcome in South Africa ?
 - “pledge and review” system?
 - Make progress on different items
- ***No progress on global agreement:***
 - ***Rely on “like-minded country” initiatives*** on topics such as REDD, Fast Start Funding, Technology and Policy Coordination; room for independent monitoring of pledges and implementation
 - ***Promote national action on “low carbon/ climate resilient growth”***