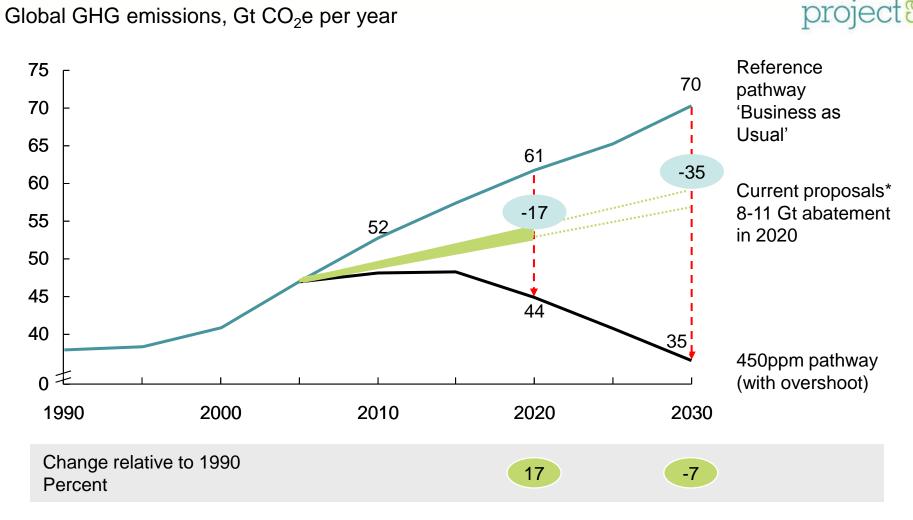


Project Catalyst: Carbon Finance after Copenhagen

- catalyst
- **Initiative** of the ClimateWorks Foundation, a global, non-profit philanthropic foundation headquartered in San Francisco, California with a network of affiliated foundations in China, India, the U.S., and the European Union
- Launched in May 2008 to provide analytical and policy support for the United Nations Framework Convention on Climate Change (UNFCCC) negotiations on a post-Kyoto international climate agreement
- **Provide** a forum where key participants in the global discussions can informally interact, conduct analyses, jointly problem solve, and contribute ideas and proposals to the formal UNFCCC process
- Organized in working groups: mitigation, adaptation, technology, forestry, climate-compatible growth plans, and finance with a total of about 150 climate negotiators, senior government officials, representatives of multilateral institutions, business executives, and leading experts from over 30 countries. Analytical support from the international consulting firm, McKinsey & Company
- <u>www.project-catalyst.info</u> for latest papers, news and background

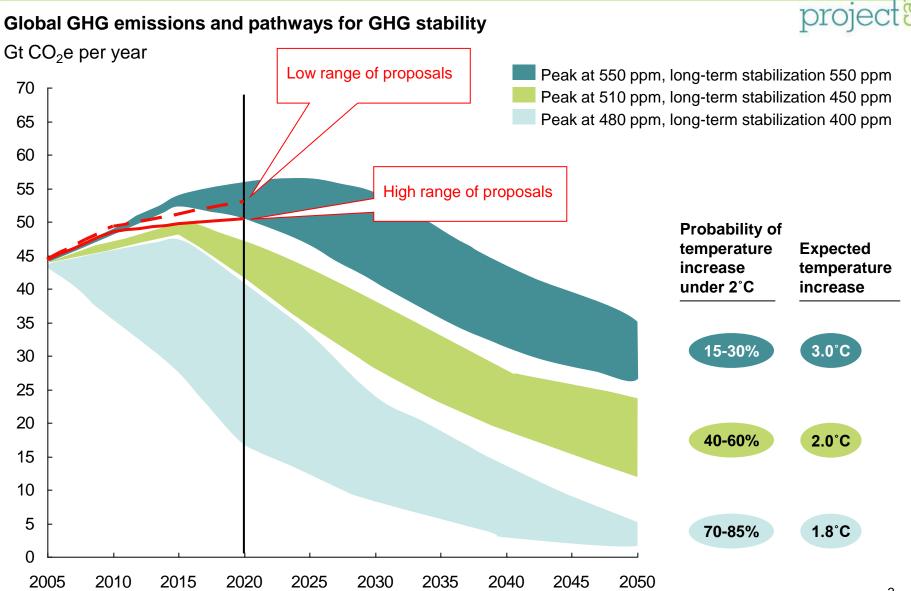
17 Gt of reductions below "Business as Usual" in 2020 are required for a 450ppm, 2°C pathway



* US – 17-28% below 2005 level by 2020; EU – 20-30% from 1990 level by 2020; China - Reduce energy consumption per national income by 20% between 2005–10; Russia - stabilise emissions at ~30% below 1990; Brazil - Reduce deforestation rates by 70% by 2017, equivalent to 4.8b tons less CO2 emitted cumulatively; Japan - Reduce 80% by 2050 from current levels; Canada - 20% reduction from 2006 level by 2020; Mexico - Reduce emissions from 2002 levels by 50% by 2050, plus proposals from 12 smaller Annex 1 countries. Assumptions have been made on timeline and pathway to calculate abatement in 2020

Source: McKinsey Global GHG Abatement Cost Curve v2.0; Houghton; IEA; US EPA; den Elzen, van Vuuren; Project Catalyst analysis

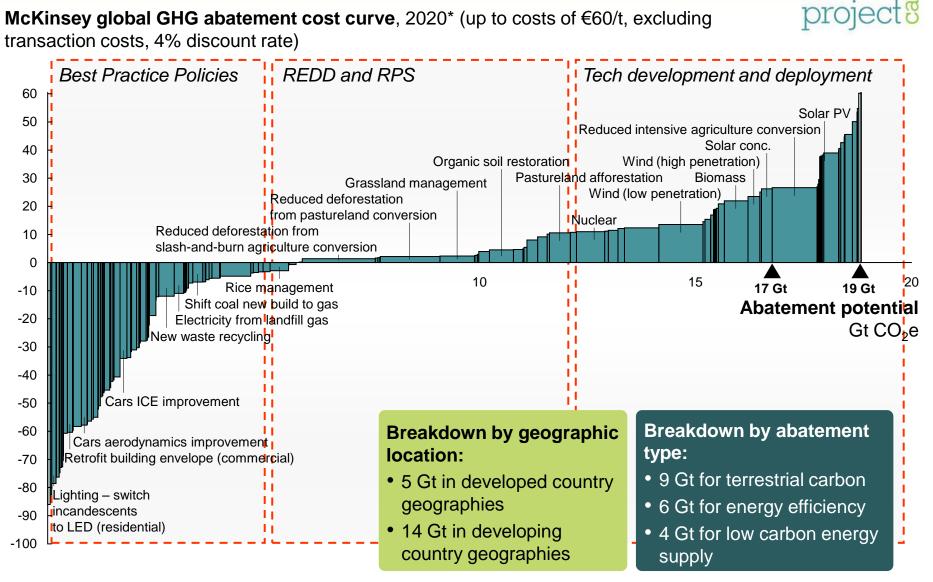
But current proposals leave us on track to 3°C or more!

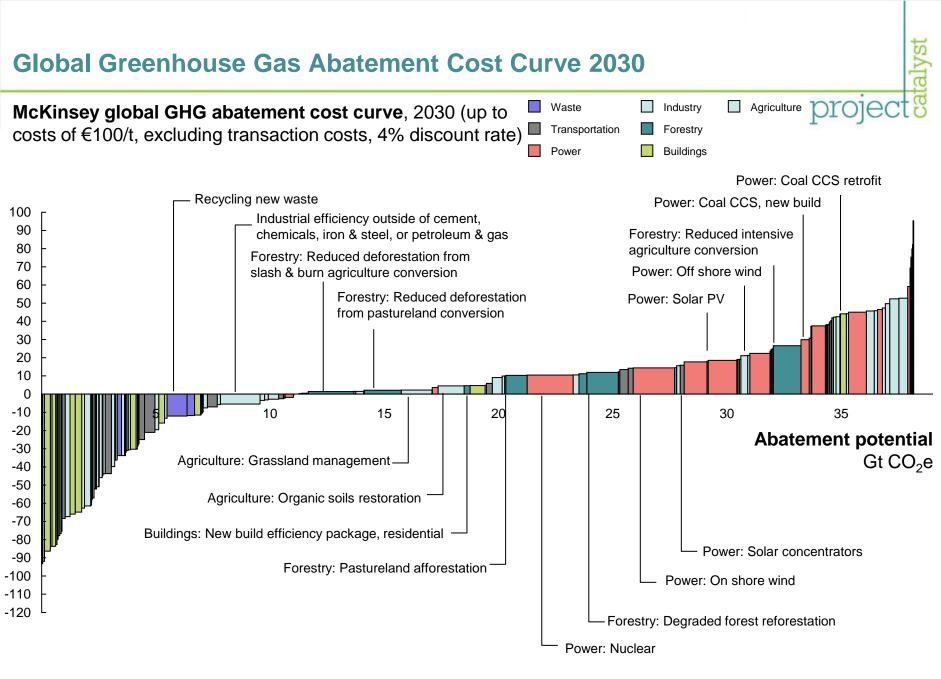


Source: IPCC WG3 AR4,, den Elzen, van Vuuren; Meinshausen; Global GHG Abatement Cost Curve v2.0, Catalyst analysis

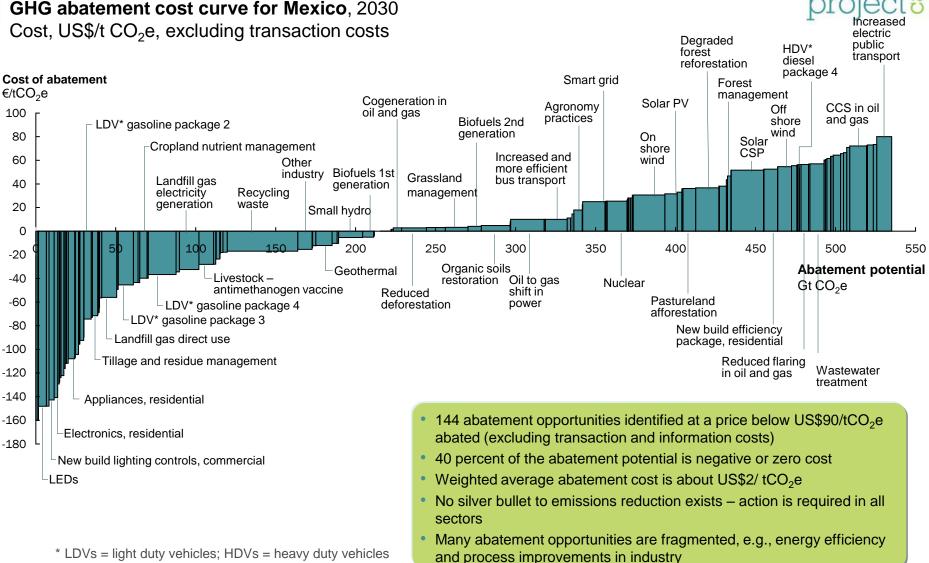
VSI

The McKinsey Cost Curve identifies 19 Gt of abatements by 2020 making it technically feasible to achieve 450ppm





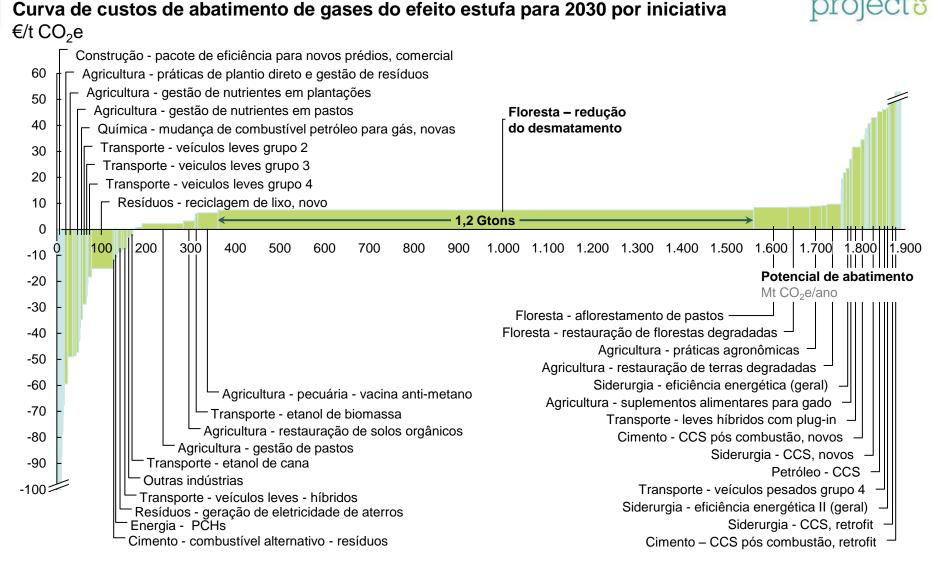
Mexico 2030 Greenhouse Gas Abatement Cost Curve – 535 Mt of abatement potential



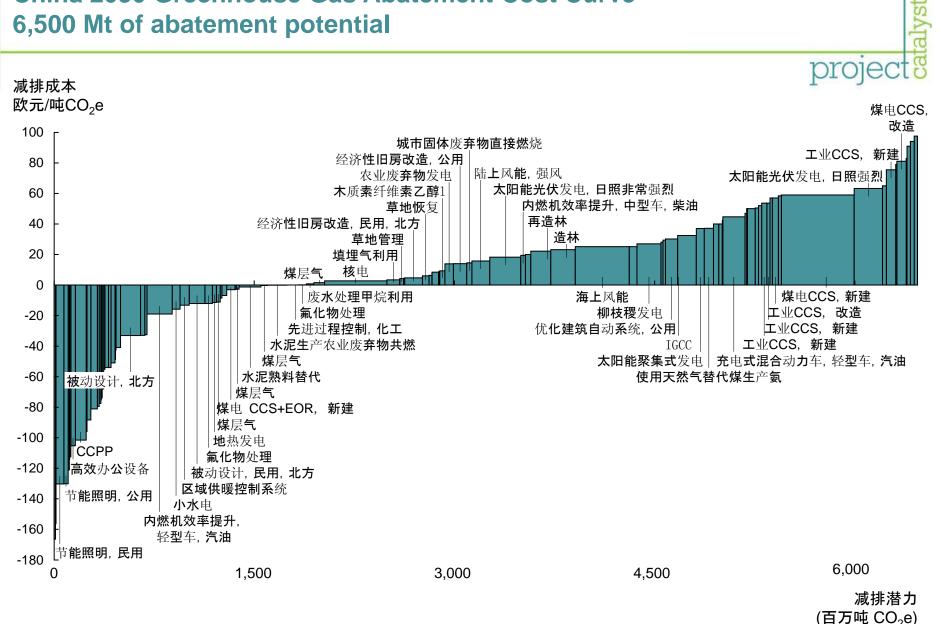
* LDVs = light duty vehicles; HDVs = heavy duty vehicles Note: The cost estimate for the light-colored bars is approximate

Source: McKinsey GHG abatement cost curve v2.0; McKinsey analysis

Brazil 2030 Greenhouse Gas Abatement Cost Curve – 1,900 Mt of abatement potential



China 2030 Greenhouse Gas Abatement Cost Curve – 6,500 Mt of abatement potential



Process for a developing country LCGP as part of agreement

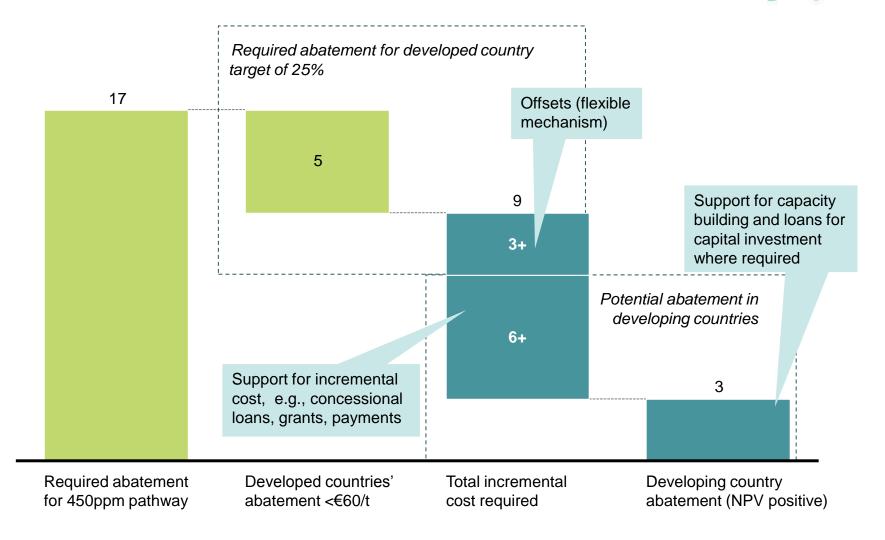


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Under a 25% (1990) target for developed countries, carbon markets contribute to, but not alone finance, developing country LCGP costs

Required abatement in 2020, Gt



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Action in six selected policy areas could deliver 40 percent of needed abatement

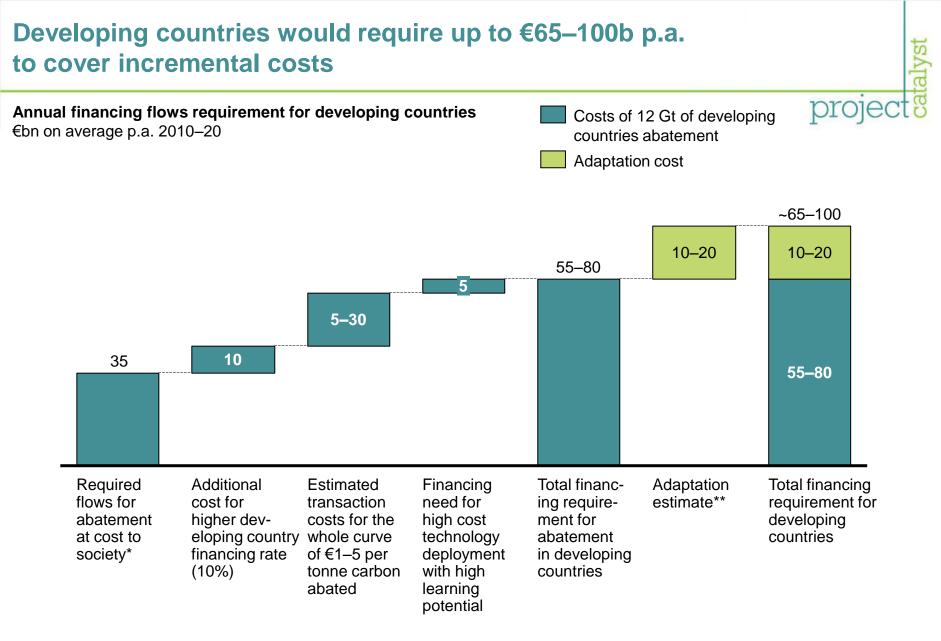
List of selected 'best-practice' policies	Developed country abatement, 2020, GtCO ₂ e	Avg. incr. cost, €/tCO ₂ e	Developing country abatement, 2020 GtCO ₂ e	Avg. incr. cost €/tCO ₂ e
Renewable energy	0.7	34	1.4	26
Industry efficiency	0.7	-2	1.8	2
Building codes	0.9	-19		17
Vehicle efficiency standards	0.3	-23		0.4 8
Fuel carbon content standards	0.2	9		0.1 4
Appliance standards	0.1	-62		0.2 -58
Total	2	2.9 -3		4.0 13

Source: McKinsey Global GHG Abatement Cost Curve v2.0; Project Catalyst analysis

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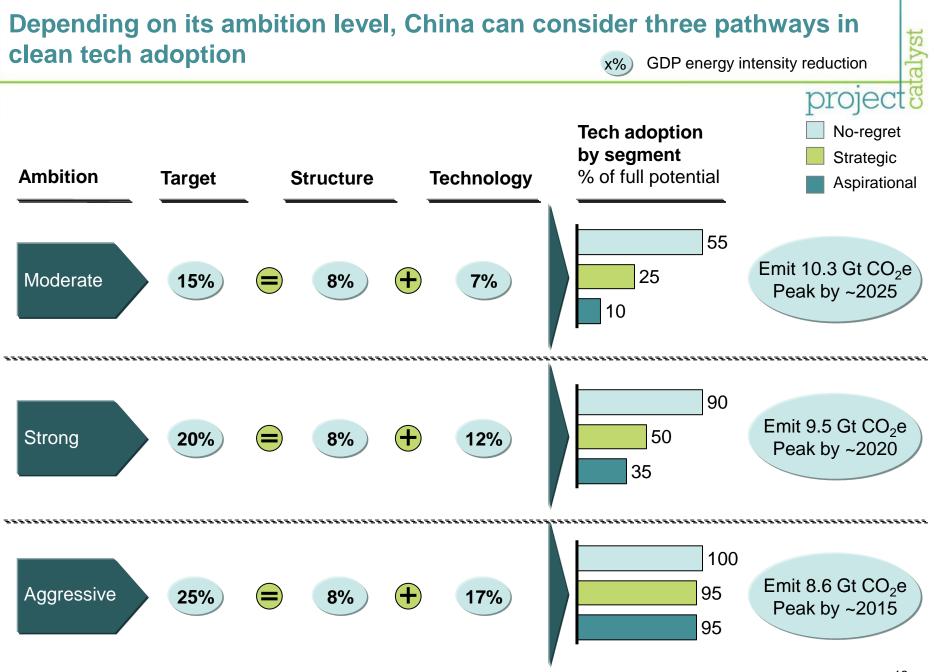
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* Assumes all abatements delivered at average cost; 4% discount rate

** Based on increased financing for global public goods (incl. research), expected funding required 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

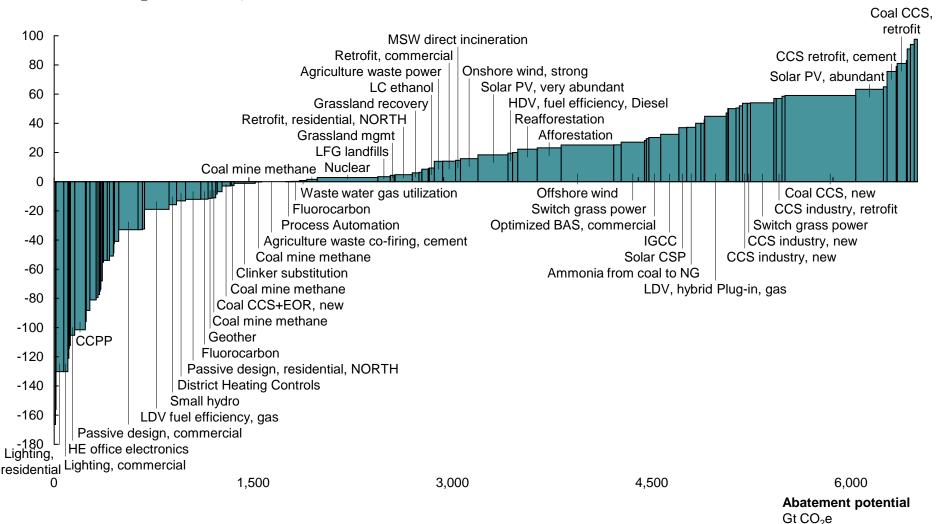


Source:12th FYP cost curve model; Project Catalyst analysis

China 2030 Greenhouse Case Cost Curve – 6,500 Mt of abatement potential

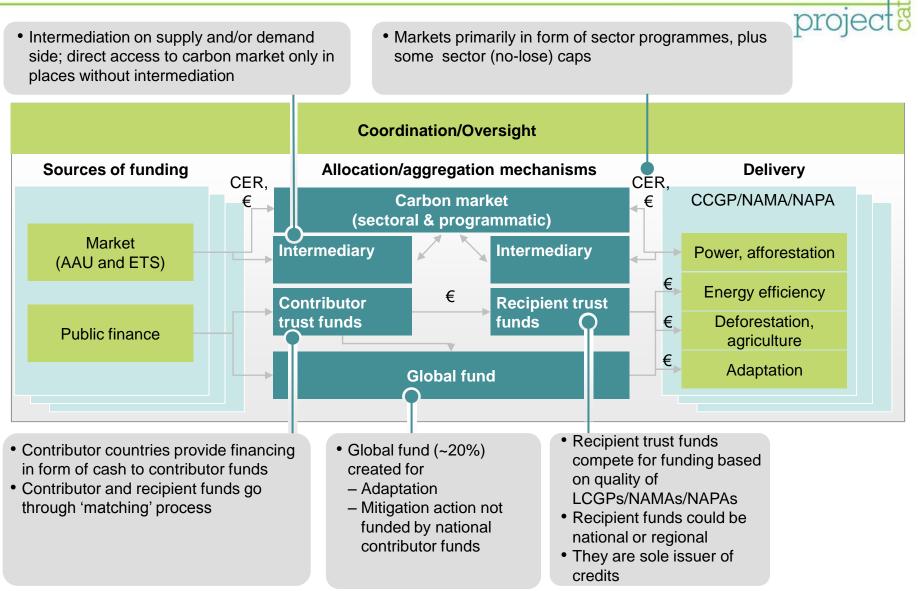
GHG abatement cost curve for China, 2030

Cost, US\$/t CO₂e, excluding transaction costs



PRELIMINARY

Preferred model: Country level funds

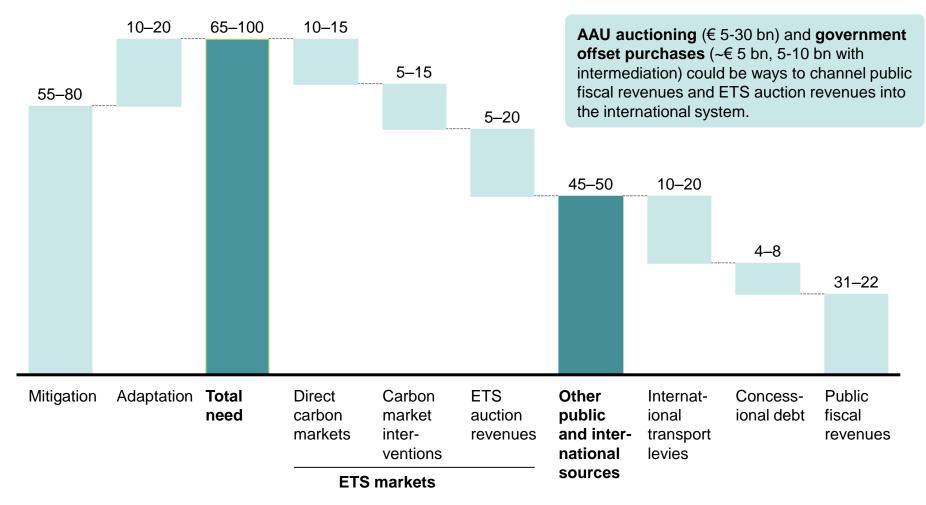


Developing country financing needs and potential sources of financing

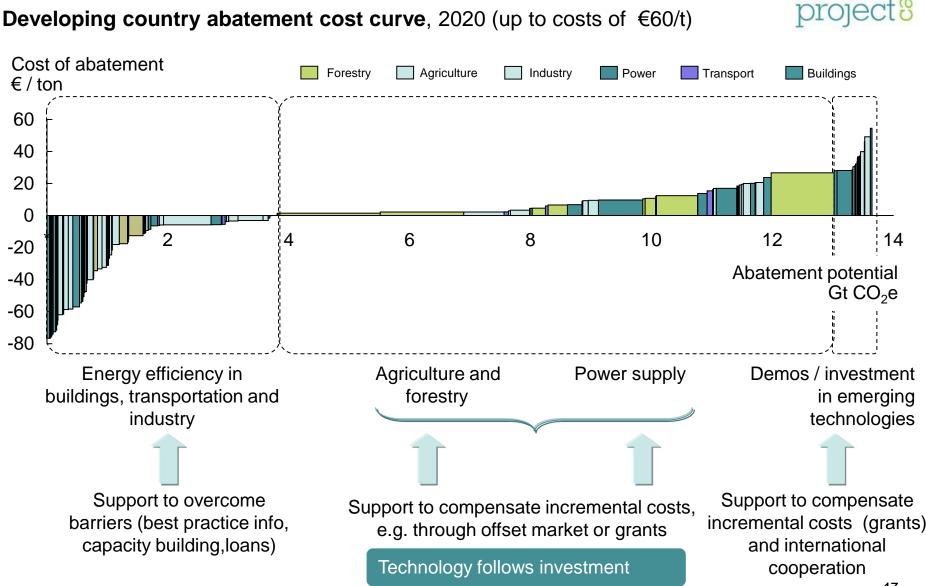
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Financing needs and sources assuming 25% caps in developed countries,

€ billion, annual average 2010–20 rounded to nearest € 5 billion



Developing countries require different types of support for mitigation activities

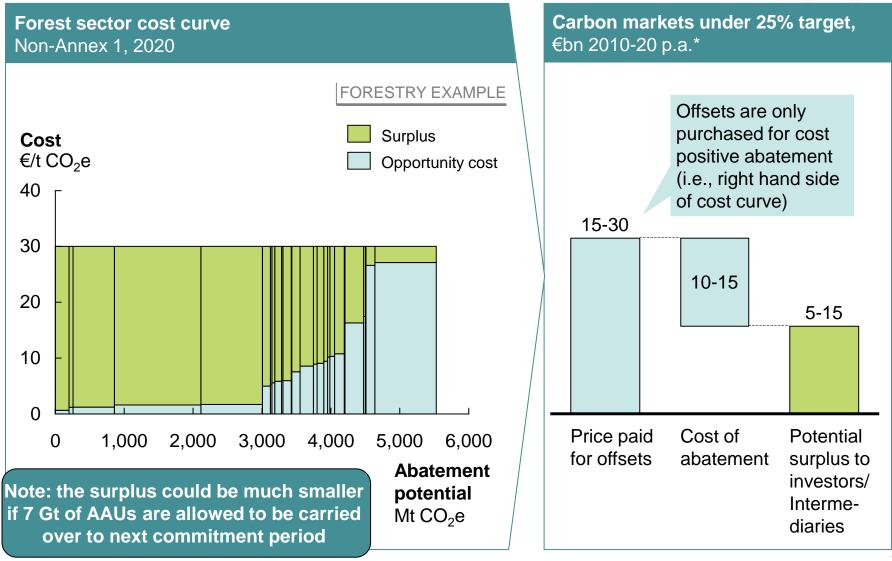


Source: McKinsey Global GHG Abatement Cost Curve v2.0; Project Catalyst analysis

Carbon markets might create significant surplus for investors/intermediaries

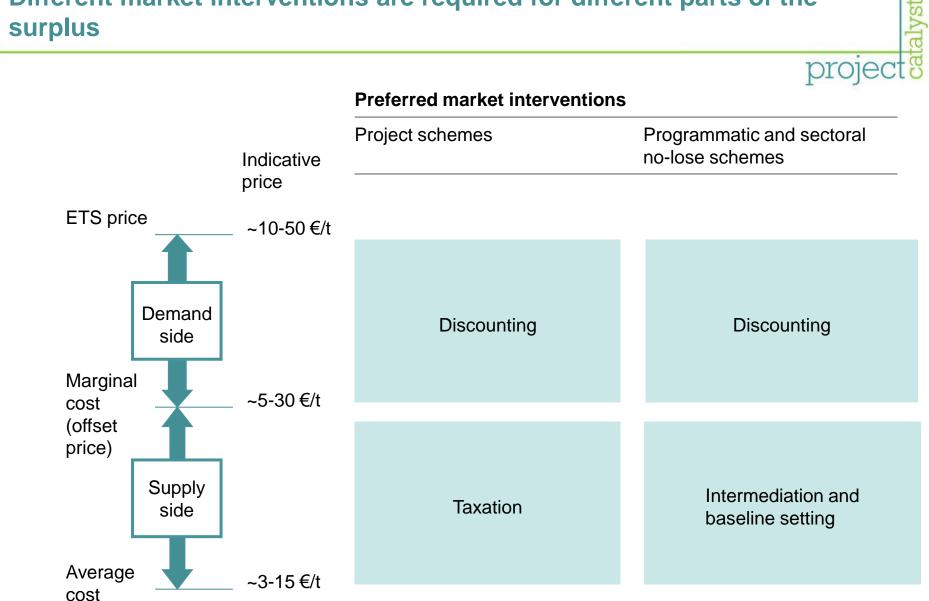
ILLUSTRATIVE

project



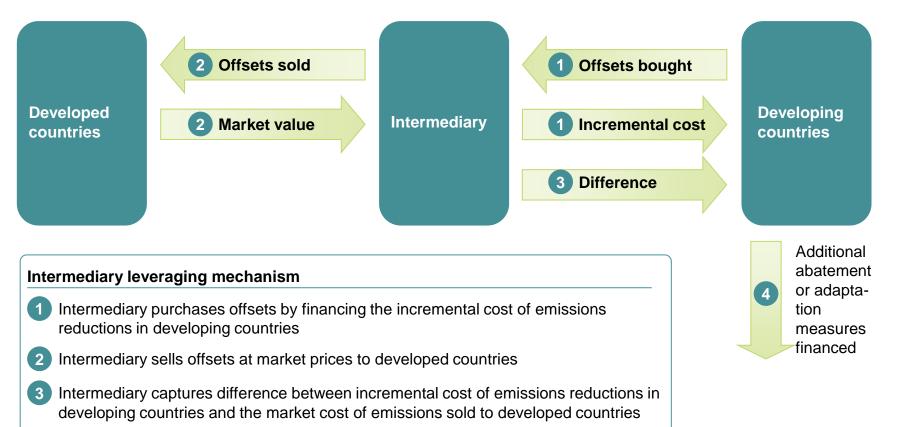
Source: Project Catalyst analysis, UNFCCC

Different market interventions are required for different parts of the surplus



Principle of intermediation





4 Intermediary uses the difference to finance either incremental costs of further abatement in developing countries or adaptation measures

Sensitivities in public finance requirements

Т

Resulting public financing need to achieve 450ppm, 2010-20 annual average requirements

Finance supply from carbon markets (direct and indirect)*	Very ambitious €45-90 bn	€0 bn	€10-20 bn	€40-50 bn
	Ambitious €20-50 bn	€10-25 bn	€45-50 bn	€75-80 bn
	Current proposals ~€10 bn	€30-45 bn	€55-90 bn	€85-120 bn
		Low €40-55 bn	Base case €65-100 bn	High €95-130 bn

Financing need for 450 ppm pathway

* Including offset purchases, full carbon market intervention and ETS auction revenues

Source: McKinsey Global GHG Abatement Cost Curve v2.0; Project Catalyst analysis

FINANCING REQUIREMENT TO REACH 450 PPM PATHWAY

project

Preferred model: Country level funds

