NDCs implementation
in Latin America and the Caribbean

How can models help?

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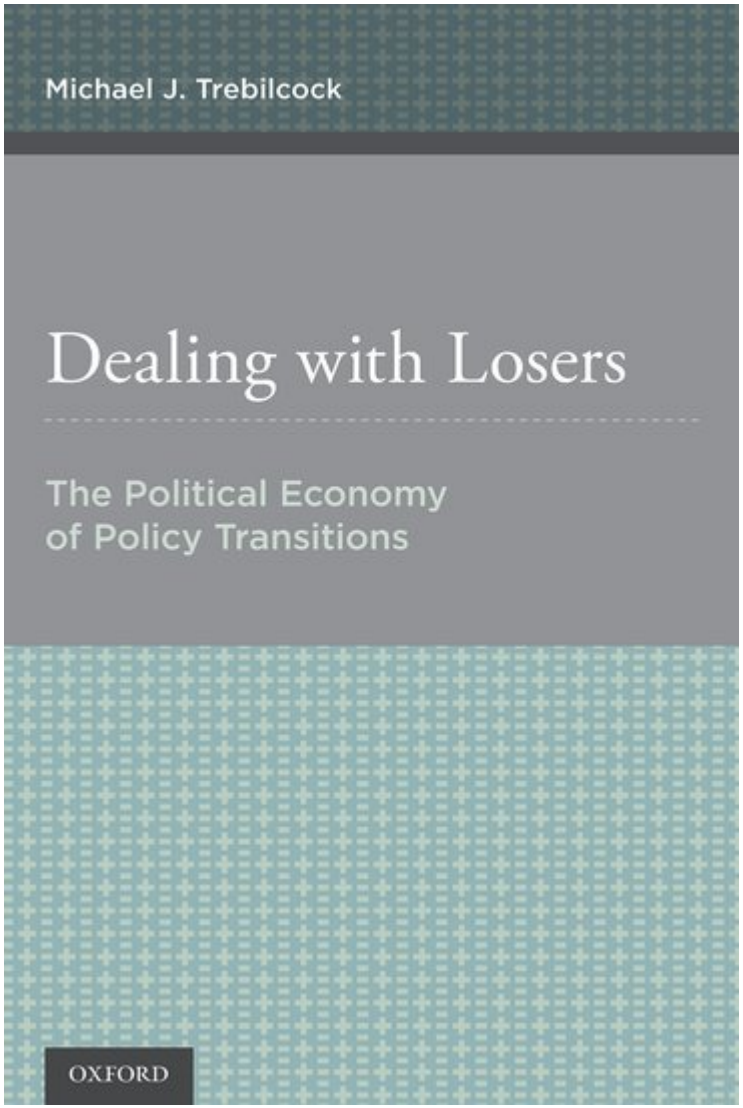
Ambitious policy reform requires taking care of the political economy



The UK Slavery Abolition Act of 1833 made provision for a payment of 20 million pounds (almost 40 percent of the British budget at the time) in compensation to plantation owners in many British Colonies - about $21 billion (US) in present day value.

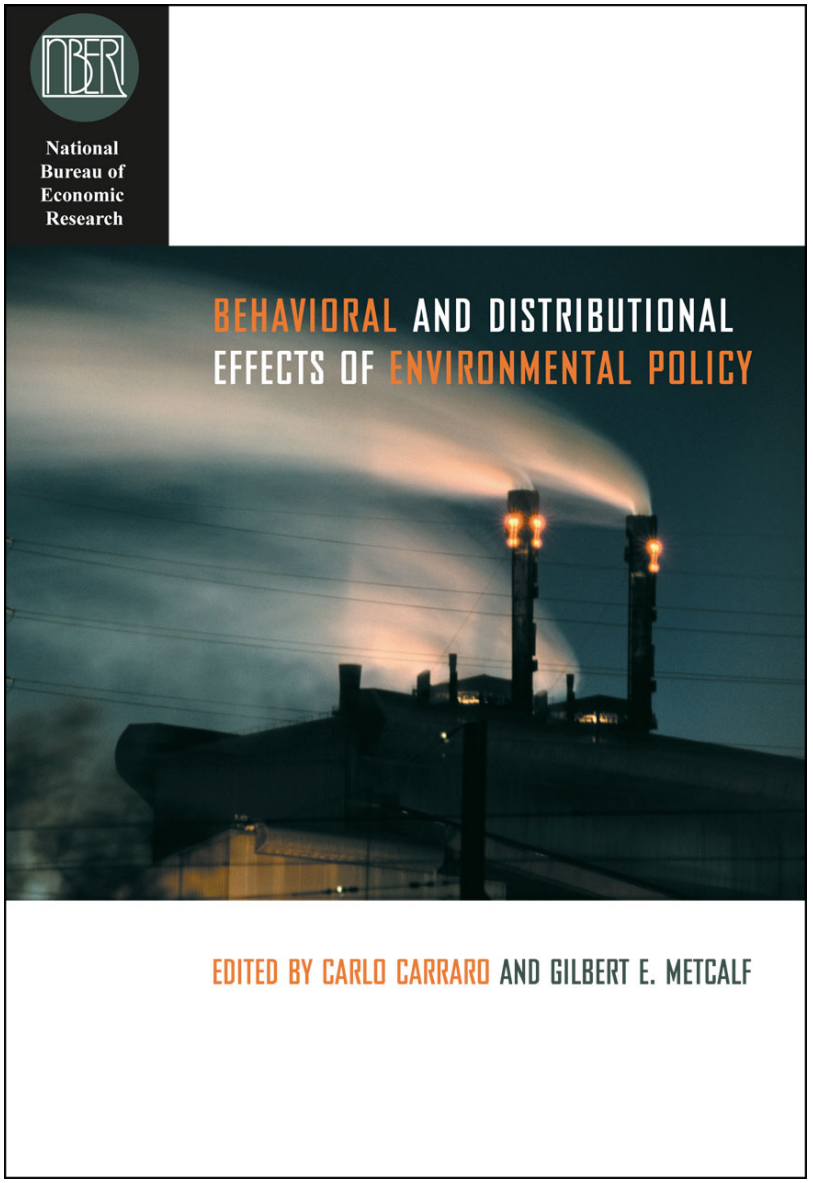
The two main challenges of NDC implementation

1. Dealing with the political economy of emission reduction policies

2. Aligning short-term NDCs with the need for long-term decarbonization

The first political economy challenge is distributional impacts

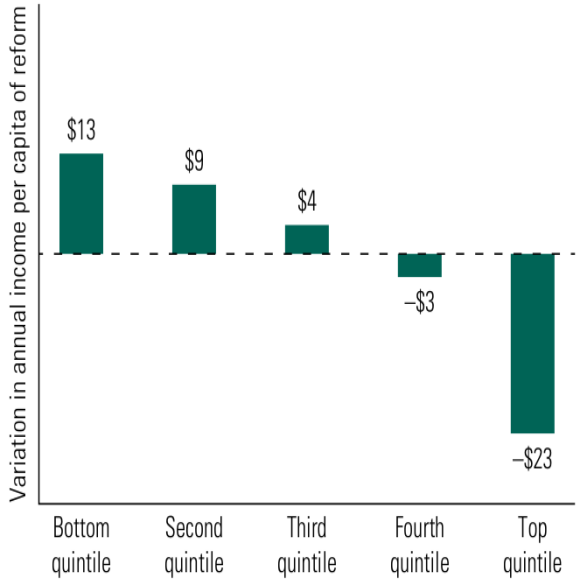
Actual policymakers often attach considerably ***more importance to the distributional impacts*** *of the policy measures that they adopt than they do to issues of efficiency*



Distributional impacts of revenue-raising policies are in principle easy to compensate for

FIGURE 0.5 Using Fossil Fuel Subsidy Resources for Universal Cash Transfers Benefits Poor People

(Impact of recycling $100 from a fossil fuel subsidy to a universal cash transfer)

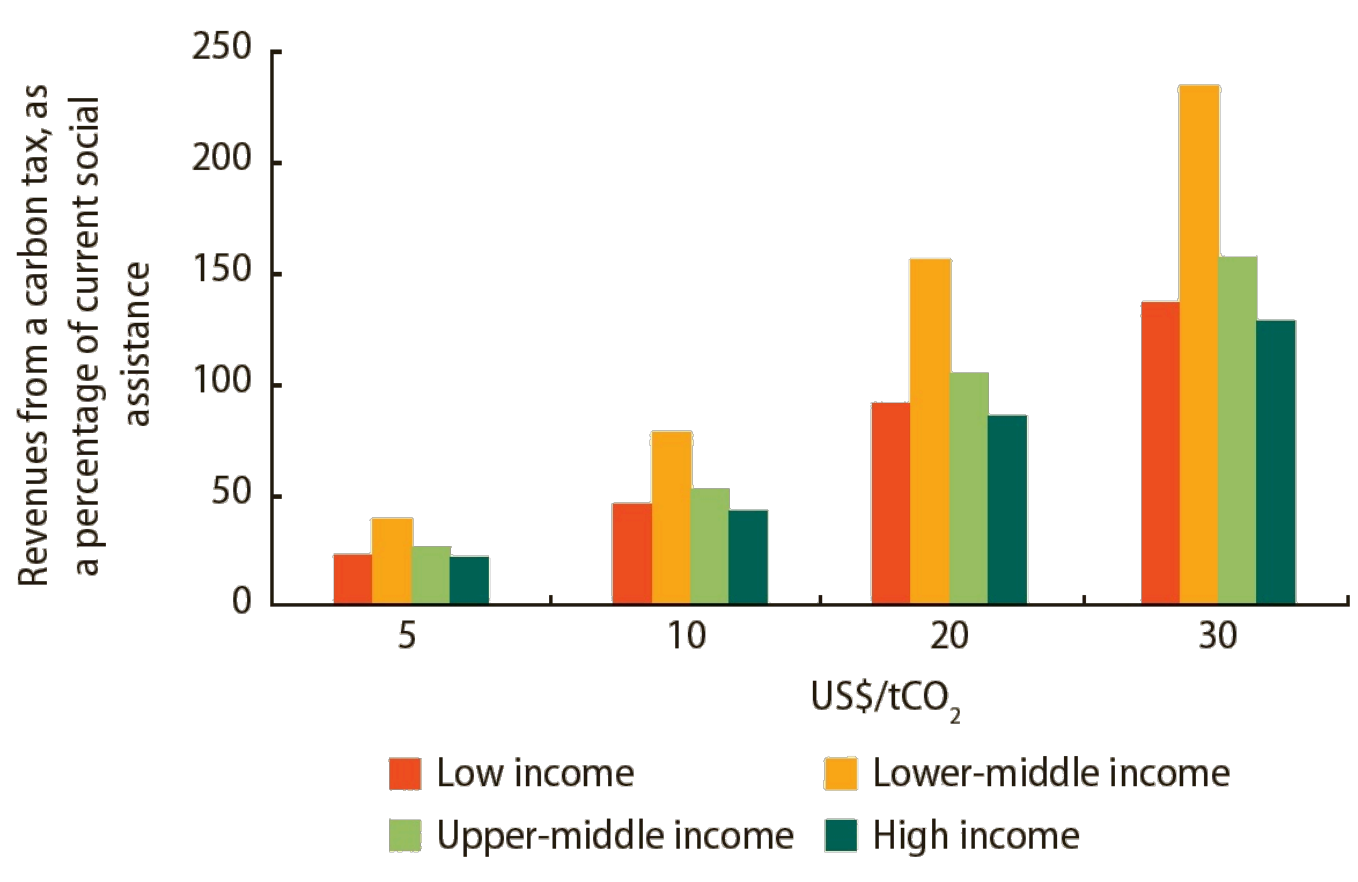


Source: Based on Arze del Granado, Coady, and Gillingham (2012).

Note: The figure shows the impact of reducing the fossil-fuel subsidy budget by $100 and distributing the savings as a universal cash transfer.

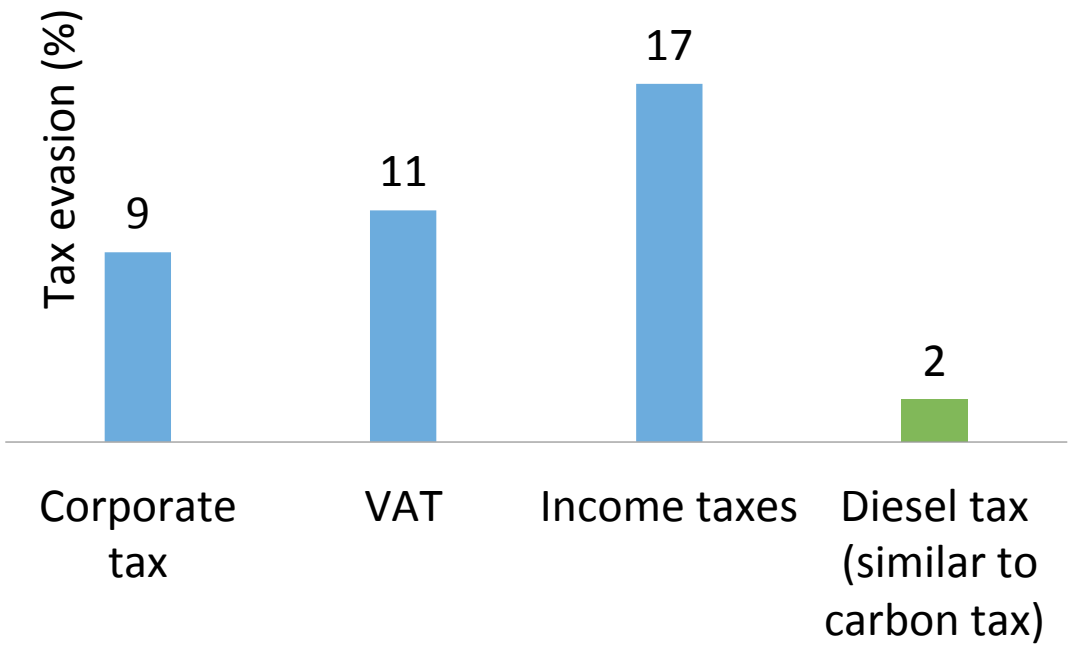
Fay, M., Hallegatte, S., Vogt-Schilb, A., Rozenberg, J., Narloch, U., Kerr, T., 2015. Decarbonizing Development: Three Steps to a Zero-Carbon Future. World Bank Publications.

Carbon revenues can help boost social safety nets



Hallegatte, S., Bangalore, M., Bonzanigo, L., Fay, M., Kane, T., Narloch, U., Rozenberg, J., Treguer, D., Vogt-Schilb, A., 2016. Shock Waves: Managing the Impacts of Climate Change on Poverty. Washington, DC: World Bank.

Carbon prices are good fiscal policy



Liu, A. A. 2013. "Tax Evasion and Optimal Environmental Taxes." Journal of Environmental Economics and Management 66: 656–70

The second political economy issue is **stranded assets**

But stranded assets are part of the "least-cost" short-term strategy !

Cumulative future emissions from combustion of fossil fuels by existing infrastructure between 2010 and 2060 would result in warming of 1.3°C

Davis, Steven J., Ken Caldeira, and H. Damon Matthews. "Future CO2 Emissions and Climate Change from Existing Energy Infrastructure." Science 329, no. 5997 (2010): 1330–33. doi:10.1126/science.1188566.

The carbon price consistent with the 2°C target will strand at least 165 billion US dollars worth of coal power plants worldwide

Technological Forecasting & Social Change 90 (2015) 8–23

Contents lists available at ScienceDirect

Technological Forecasting & Social Change

ELSEVIER

Locked into Copenhagen pledges — Implications of short-term emission targets for the cost and feasibility of long-term climate goals

Keywan Riahi [a,b,*], Elmar Kriegler [c], Nils Johnson [a], Christoph Bertram [c], Michel den Elzen [d], Jiyong Eom [e], Michiel Schaeffer [f], Jae Edmonds [e], Morna Isaac [d], Volker Krey [a], Thomas Longden [g], Gunnar Luderer [c], Aurélie Méjean [h], David L. McCollum [a], Silvana Mima [i], Hal Turton [j], Detlef P. van Vuuren [d,k], Kenichi Wada [l], Valentina Bosetti [g,o], Pantelis Capros [m], Patrick Criqui [i], Meriem Hamdi-Cherif [h], Mikiko Kainuma [n], Ottmar Edenhofer [c,p,q]

Johnson, et al. "Stranded on a Low-Carbon Planet: Implications of Climate Policy for the Phase-out of Coal-Based Power Plants." Technological Forecasting and Social Change 90, Part A (January 2015): 89–102.

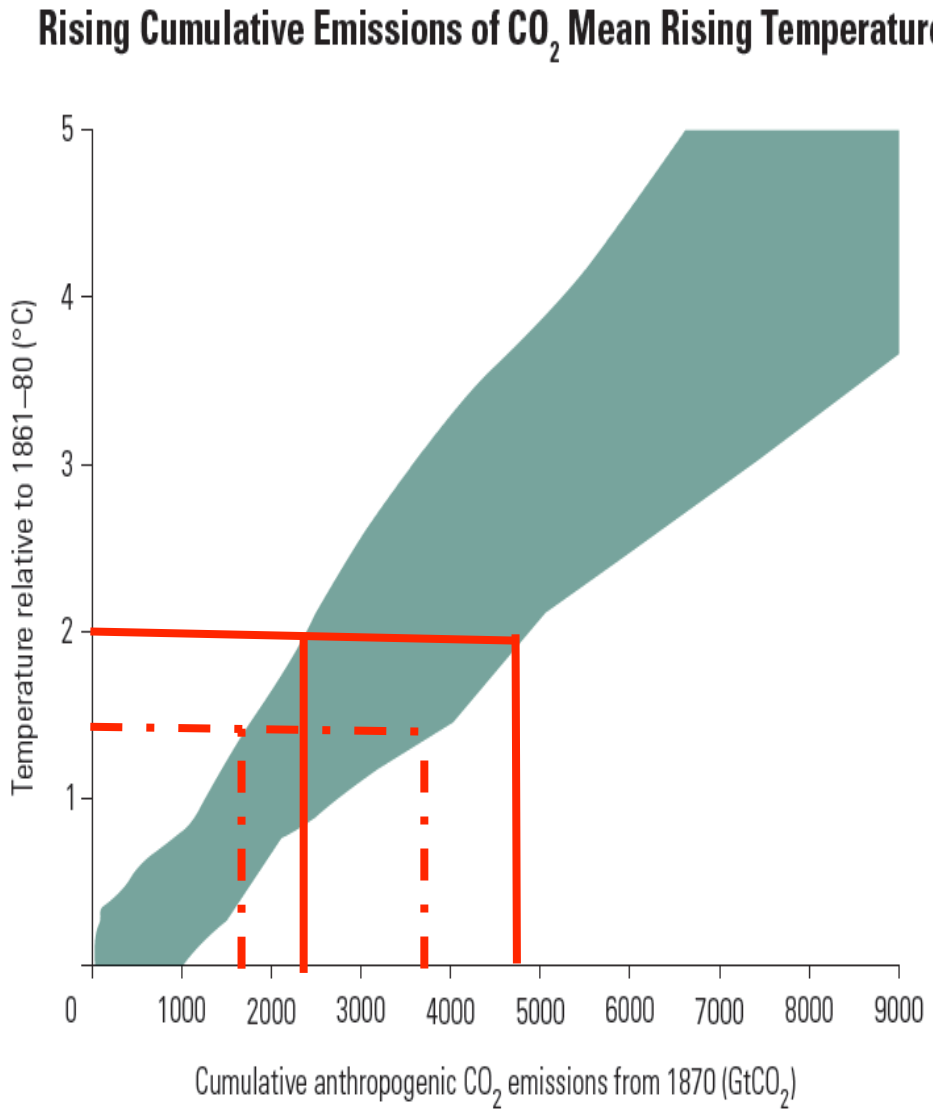
Managing stranded assets in the transition to clean capital

- Make industries and regions benefit from the change
  - Automakers and electric cars
  - Green pilot projects in negatively affected areas
  - Worker retraining – examples from trade agreements
- Avoid stranded assets in the first place
  - Energy efficiency standards on new cars, buildings and appliances
  - Moratorium on new coal and gas power plants

Rozenberg, Julie, Adrien Vogt-Schilb, and Stephane Hallegatte. "Transition to Clean Capital, Irreversible Investment and Stranded Assets." Policy Research Working Paper. World Bank, 2014.

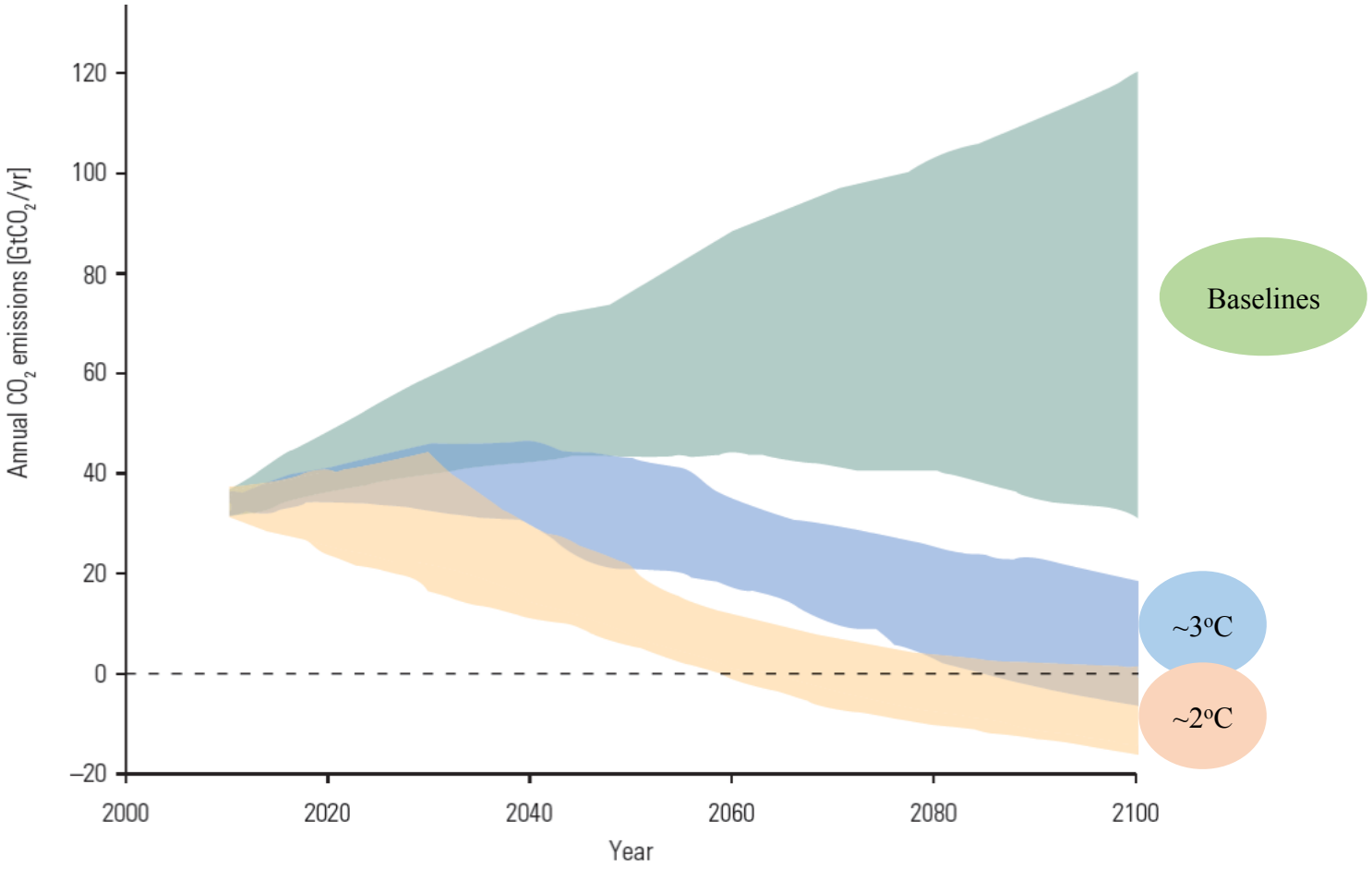
Fay, M., Hallegatte, S., Vogt-Schilb, A., Rozenberg, J., Narloch, U., Kerr, T., 2015. Decarbonizing Development: Three Steps to a Zero-Carbon Future. World Bank Publications.

Temperature targets imply a carbon budget



Fay, M., Hallegatte, S., Vogt-Schilb, A., Rozenberg, J., Narloch, U., Kerr, T., 2015. Decarbonizing Development: Three Steps to a Zero-Carbon Future. World Bank Publications.

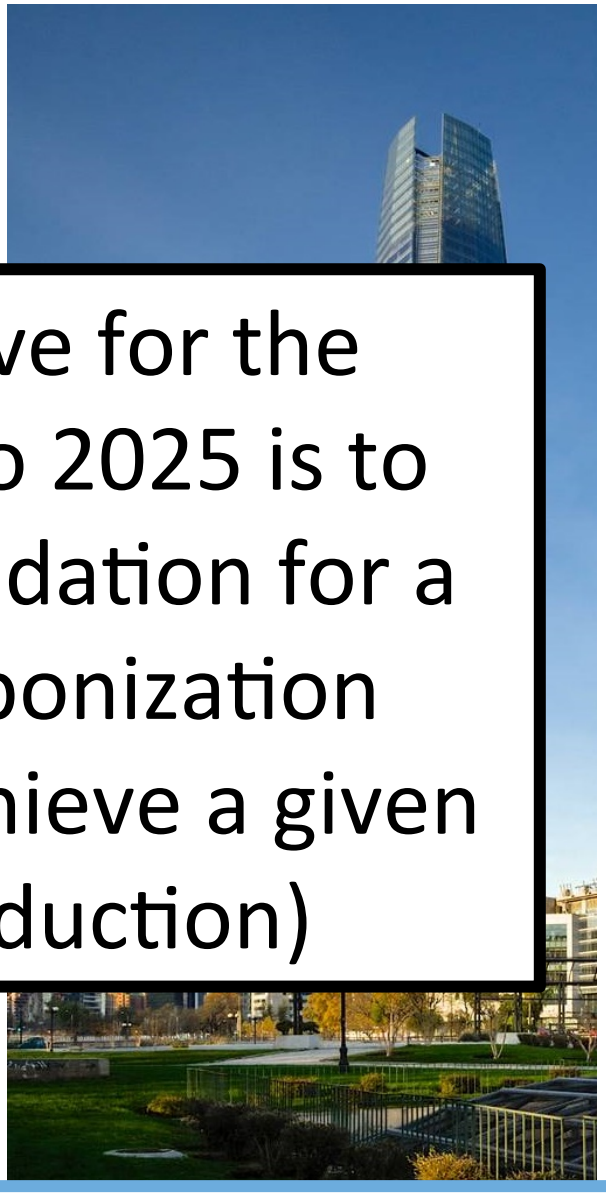
We need zero net emissions to stabilize climate, the question is when and how to reduce emissions



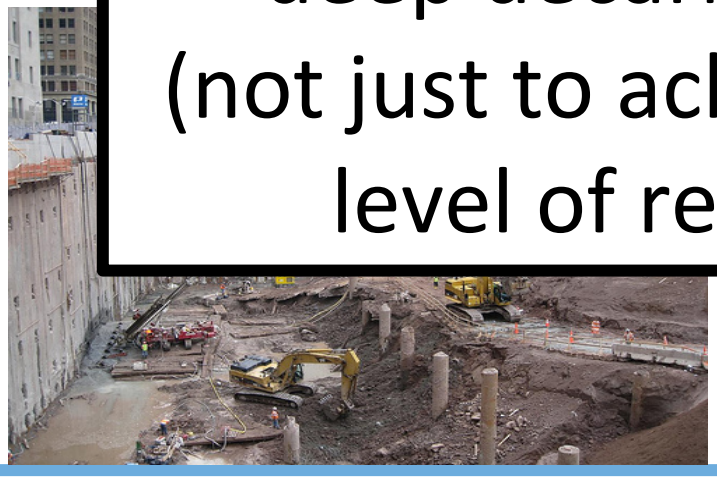
Fay, M., Hallegatte, S., Vogt-Schilb, A., Rozenberg, J., Narloch, U., Kerr, T., 2015. Decarbonizing Development: Three Steps to a Zero-Carbon Future. World Bank Publications.

Emission reduction

-90%

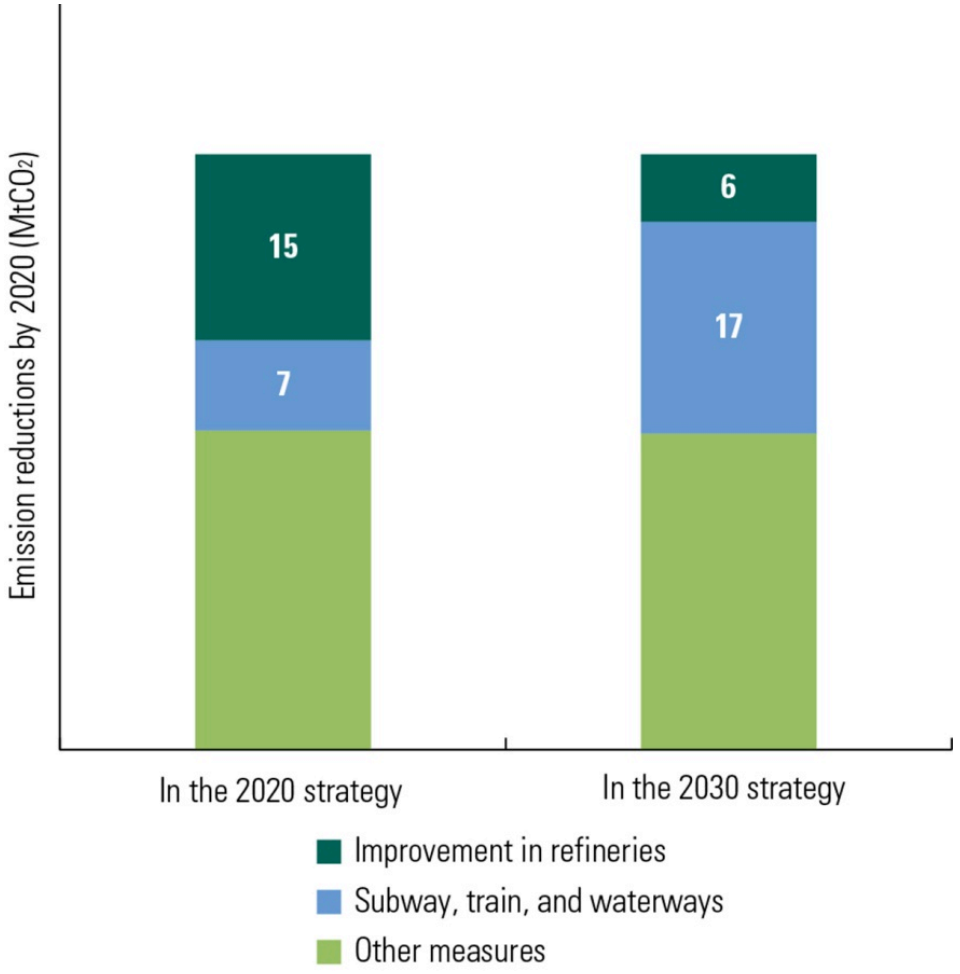


The objective for the strategy up to 2025 is to build the foundation for a deep decarbonization (not just to achieve a given level of reduction)



Time

Short term emission reductions should be consistent with long-term decarbonization : the Brazilian example



Vogt-Schilb, A., Hallegatte, S., de Gouvello, C., 2015. Marginal abatement cost curves and the quality of emission reductions: a case study on Brazil. Climate Policy 15, 703–723.

How can the models help?

Distributional impacts: Assess distributional impacts of carbon pricing + increased social protection *at the country level in LAC*

Stranded Assets Assess the impact of downsizing carbon-intensive industry on employment *at the country level in LAC*

Short-term/long-term Assess the carbon cost of avoiding stranded assets *at the country, region and global level*

Thanks for your attention !

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