

# Decarbonizing Development: Smoothing the Transition and Protecting the Poor

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Stabilizing climate change entails bringing net emissions of carbon dioxide (CO<sub>2</sub>) to zero. CO<sub>2</sub> stays in the atmosphere for hundreds, if not thousands, of years. As long as we emit more than we capture or offset through carbon sinks (such as forests), concentrations of CO<sub>2</sub> in the atmosphere will keep rising, and the climate will keep warming. Countries can follow three principles in their efforts to create a zero-carbon future: (a) planning ahead for a future with zero emissions, (b) getting carbon prices and policies right, and (c) smoothing the transition and protecting the poor.

This policy note is drawn from *Decarbonizing Development: Three Steps to a Zero-Carbon Future* (2015) by Marianne Fay, Stephane Hallegatte, Adrien Vogt-Schilb, Julie Rozenberg, Ulf Narloch, and Tom Kerr. Washington, DC: World Bank.

Success in stabilizing climate change will be largely determined by the ability of policies to ensure that the decarbonization of the economic system contributes to economic development and the sustainable eradication of poverty. Understandably, analyses of climate policy packages typically focus on the design of the climate side of the package—the pricing instruments, the role of regulation and norms, and the support to innovation and green technology. However, much of the challenge lies in the political economy.

Climate policy gains are spread across the economy, and many of the benefits of climate change stabilization take place in the future. In contrast, policy costs tend to be visible, immediate, and concentrated over a few industries, which may have a de facto ability to veto the reform. Governments can deal with this situation by designing policies in a way that avoids concentrating losses, or by explicitly compensating some of those most affected, to help smooth the transition.

The goal of the transition is sustainable development rather than just lower emissions. For climate

change reforms to succeed, they should be consistent with a country's social objectives and should garner political support. Governments typically have multiple policy objectives, and they do not want climate mitigation policies to be implemented at the expense of the poor and vulnerable. Even if the poor are the most vulnerable to climate change so that mitigation policies are helpful in the long run, it does not follow that mitigation policies favor the poor in the short term. Rather, ensuring that mitigation contributes to both long-term and short-term reductions in poverty and inequality is a goal in and of itself. It is also critical to the public and political acceptability of the associated reforms.

### Managing the Political Economy of Reform without Getting Captured by Vested Interests

Even if the impact is small at the macroeconomic scale, a carbon price may cause concentrated losses in carbon-intensive sectors, especially in the form of stranded assets—whose owners may therefore oppose the reform and in some cases have the power to veto it.

For a carbon price consistent with the 2°C target, the value of coal power plants stranded worldwide between now and 2050 could reach \$165 billion. And climate stabilization will require keeping some of the known fossil-fuel reserves in the ground, leading to a loss of wealth for some companies, countries, and regions. Where vulnerable sectors, such as steel or coal mining, dominate the local economy, regional impacts could be severe, with social, cultural, and political implications.

A number of options can help smooth the transition and avoid concentrating losses (either spatially or within a particular interest group).

- Start reforms with fiscal instruments or regulations (such as performance standards) that apply only to new capital and new investments. This approach is less efficient from an economic point of view than immediately introducing a carbon price. But it has the advantage of putting the economy on the right path without hurting owners of existing capital (hence, reducing resistance). It also creates a constituency for change, as business owners are less likely to lobby for repeal of a carbon law or against the subsequent introduction of a carbon tax if they have already invested in the new, cleaner capital. This approach also delivers emission reductions and—maybe most important in places with highly distorted prices—prepares the economy for the introduction of a carbon price or the removal of fossil-fuel subsidies, as it progressively transforms the economic system into a more efficient one that remains competitive with appropriate energy prices.
- Adopt compensation schemes that support those who are most affected. Strong social protection systems play the role of broad-based compensation systems, since they protect households and individuals against economic shocks. Specific instruments can also be implemented, as when Japan supported traditional industries (such as textile and shipbuilding) in the 1960s and 1970s. Japan relied on fiscal policies and, starting in 1978, planned capacity reduction, providing assistance to troubled firms and mitigating negative impacts on labor. The U.S. Trade Adjustment Assistance also provided reemployment services to displaced workers and financial assistance to manufacturers and service firms hurt by import competition. Experience from trade liberalization has shown that support such as wage subsidies to encourage hiring in the expanding sectors and unemployment insurance for the displaced workers can effectively help mitigate most of the losses and have generally modest costs.
- Help those who might be most affected become part of the transition, and benefit from it instead. For instance, some automakers have already positioned themselves as leaders in green and electric or hybrid cars, and thus could be potential winners from more ambitious climate mitigation. Oil and gas companies can reinvent themselves if they develop technologies to capture and store carbon. Research and development and innovation support are a way of supporting this transition if they target those most likely to be affected and transform them into possible winners. Also, when pilot projects for green technologies are created, they could be located in the areas that are most likely to be negatively affected by climate policies, to ensure that all regions get benefits from the reform.

Success requires managing vested interests without being captured by those interests. Governments may make mistakes when trying to smooth the transition—by erring when they try to pick the winners, by supporting declining sectors beyond what is needed, or by being captured by special interests. That is why they have often taken steps to help reduce the likelihood of costly failures and capture. For example, several East Asian governments used trade competitiveness as a marker for their industrial policies: government

support was swiftly cut to industries that could not compete in international markets. Such a clear test may be more difficult for low-carbon technologies that by nature depend on a government policy to be attractive (whether carbon price or a regulation), but in general, the following can help:

- Clear and transparent criteria that determine when public support should be terminated,
- An institutional design that balances flexibility (needed to adjust policies when new information is available) and predictability (so that long-term investment is possible), and
- Transparency and public accountability—so the beneficiaries of the policies are the public rather than the firms that are being supported.

### Ensuring Poor People Benefit from the Reform

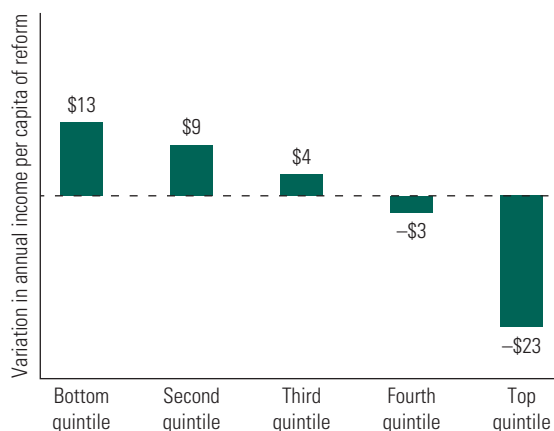
Evidence suggests that carbon pricing and fossil-fuel subsidy reforms can favor poor people—mostly because they generate revenue that can be recycled to maintain or improve the lives of the poor.

Fossil-fuel subsidies and artificially low energy prices are not an efficient way to help poor people, but removing them without care can still hurt the poor. These measures drain fiscal coffers, hurt the environment, slow the deployment of greener technologies, and chiefly benefit the better off. But even if removing fossil-fuel subsidies and adopting carbon pricing improve equity, these measures will also increase the price of energy and other goods (such as food), potentially reducing poor households' purchasing power. Further, higher prices for modern energy could lock poor people into using solid fuels for cooking, with impacts on health, gender balance, and children's access to education (women and children spend a disproportionate amount of time collecting traditional fuels and spend more time exposed to indoor pollution). Also, industrialization has been a powerful force for poverty reduction in many countries and could theoretically be slowed by higher energy prices.

It is thus critical to use the savings or new proceeds generated by climate policies to compensate poor people, promote poverty reduction, and boost safety nets. One way to do so is by recycling revenue through tax cuts and increased transfers to the population—as British Columbia did to ensure that its reforms were progressive. Similarly, Iran implemented a quasi-universal cash transfer (about \$45 per month per capita) as part of its subsidy reforms. Data from developing countries show that taking \$100 away from fossil-fuel subsidies and redistributing the money equally throughout the population would on average transfer \$13 to the bottom quintile of the population and take \$23 away from the top quintile (figure 1).

Another way to ensure poor people benefit is with in-kind measures, and the financing of public goods and infrastructure. Ghana's 2005 fossil-fuel subsidy reform increased the price of transport fuels by 50 percent but also included an expansion of primary health care and electrification in poor and rural areas, the large-scale distribution of efficient lightbulbs,

**FIGURE 1** Using Fossil Fuel Subsidy Resources for Universal Cash Transfer Would Benefit Poor People  
(Impact of recycling \$100 from a fossil fuel subsidy to a universal cash transfer)



Source: Based on F. Arze del Granado, D. Coady, and R. Gillingham. 2012. "The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries." *World Development* 40 (11): 2234–48.

Note: The figure shows the impact of reducing the fossil fuel subsidy budget by \$100, and distributing the savings across the population.

public transport improvements, and the elimination of school fees at government-run primary and secondary schools. Similarly, new resources from fossil-fuel subsidies or carbon pricing can be used to pay for public goods, such as education, health, or infrastructure. By some accounts, taxing natural rents, including carbon emissions, could finance a significant share of the current infrastructure gap.

Similarly, care must be taken in the design of land-use-based mitigation policies, so they benefit the poor. Designing such policies entails ensuring that governments do not restrict access to land for the poorest people and respect and strengthen customary rights. A good example is Brazil's Terra Legal program, which offers formal recognition to indigenous land and grants land titles to some 300,000 smallholders. In addition, payment for ecosystem services can directly increase the incomes of poor land users. Such programs in Brazil,

Ecuador, and Guatemala aim to support poor communities, although so far evidence of their impact is limited. The hope is that by 2030, an estimated 25 million to 50 million low-income households will benefit if carbon payments are fully developed and pro-poor participation conditions are secured.

Redistribution and revenue cycling have also been shown to significantly increase the odds of reforms succeeding, especially when corresponding benefits were properly communicated to the public. A review of reforms in the Middle East and North Africa showed that all reforms with cash and in-kind transfers were classified as successful, as opposed to only 17 percent of the cases without. In Germany, a study found that businesses were aware of higher energy taxes but not of the associated cuts in payroll taxes. But once they were informed, they were less likely to disapprove of the energy tax.