Deep Decarbonization Pathways

NDC INSIGHTS n°5

Where can countries reduce emissions in the next five years?

Why is it essential to reduce emissions in the next five years?

Immediate emissions reductions are not just helpful—they are necessary to preserve the credibility of long-term net-zero goals.
The Deep Decarbonization Pathways (DDP) initiative's latest scenarios show that **power, transport, and land use** hold the clearest opportunities for short-term emissions cuts. Critically, the solutions in these sectors already exist and are cost-effective in most national contexts. What's often missing? Clear sectoral strategies, policy frameworks, and financial mechanisms to deploy them fast enough.
This edition of NDC Insights distills how countries can act now—based on real pathways and practical policies already in motion.

⚡ Power: Decarbonization starts with the grid

🟢 *What we're seeing:*
The DDP analysis compares outcomes under two broad approaches: one based on **current trends**, where countries continue along their existing policy pathways, and another based on **national pathways to net zero**, which reflect ambitious transformations aligned with the 1.5°C goal. The figure below shows how carbon intensity of electricity differs across countries depending on whether they maintain current trajectories or undertake the systemic changes required for deep decarbonisation.

Our scenario analysis reveals that emissions from electricity drop more rapidly by 2030 in national pathways to net zero as compared to current trends. This comparison highlights that current national trends fall short of what's needed in terms of the deployment of renewable energy, even though they are now cheaper than from fossil fuels in most countries . In particular, power market structures—often built around centralized fossil systems—are slowing the uptake of clean technologies. Overcoming these limitations is critical to enable the rapid deployment needed in national pathways to net zero

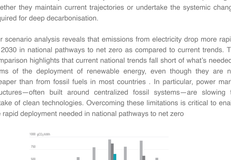

Figure 1: Carbon intensity of electricity in 2020 and in 2030 under current trends vs national pathways to net zero

📍 **Country in focus: Mexico**
Mexico's 2013 energy reform opened electricity markets to private players, accelerating renewable investment through public auctions. But policy reversals since 2018 stalled progress. The framework remains intact—meaning the country could rapidly restart its clean energy momentum by reviving auctions and enforcing clean energy quotas.

📍 **Country in focus: Argentina**
Argentina's renewables law and auctions haven't yielded full results, largely due to weak enforcement and grid limitations. Strengthening public planning and grid infrastructure could unlock stalled investment and set the stage for deep power sector reform.

🚆 Transport: Rethinking mobility, not just vehicles

The carbon intensity of passenger mobility decreases significantly by 2030 in most countries under current trends, but national pathways to net zero highlight an even faster reduction, as permitted by the accelerated diffusion of low-carbon vehicles and enhancement of modal shift. This trend is essential to make deep emission reductions in this sector compatible with the rising passenger mobility in most countries given growing urbanization and income levels, and increasing population.

🟢 *What works:*
Shifting to public and non-motorized transport (PT and NMT)
Accelerating electric vehicle (EV) adoption with smart incentives and infrastructures

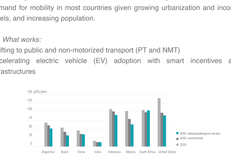

Figure 2 : Carbon content of passenger mobility (gCO2/pkm) in 2020 and in 2030 under current trends vs national pathways to net zero

📍 **Country in focus: Mexico**
Major cities could curb rising emissions by reallocating road space to public transport and bike lanes, improving access and safety, and regulating informal transit systems. These actions—already on the table—can be implemented quickly and improve urban life for millions.

📍 **Country in focus: United States**
On the federal side, tax credits under the Inflation Reduction Act, fuel economy standards, and charging infrastructure funding from the Bipartisan Infrastructure Law are currently at risk of being repealed in the United States. However, states are driving the clean transportation transition through policies like EV incentives, low-carbon fuel standards, and zero-emission vehicle mandates. As of June 2025, 14 states have adopted California's Advanced Clean Cars standards, setting ambitious targets for zero-emission vehicle sales and reductions in tailpipe pollution. In response to federal efforts to revoke California's Clean Air Act authority, 11 states launched the Affordable Clean Cars Initiative in May 2025, reaffirming their commitment to strong state-level vehicle regulations. Through coordinated action and policy leadership, states continue to drive progress toward cleaner transportation in the United States.

🌳 Land use: From deforestation to restoration

Land systems can reduce emissions in the short term—either by protecting existing carbon sinks or by reversing degradation. This sector often shows faster results than expected, provided policy implementation is effective and locally grounded.

🟢 *What to do:*
Enforce existing deforestation laws
Scale up agroforestry, reforestation, and payments for ecosystem services
Support small-scale farmers through technical and financial support

📍 **Country in focus: Brazil**
If current deforestation laws were fully enforced, Brazil could achieve a 318 MtCO$_2$/year reduction by 2030. The DDP pathway goes further: with new afforestation efforts and carbon market incentives, net emissions could reach -177 MtCO$_2$/year. Policy clarity and financial tools are key.

📍 **Country in focus: India**
India is scaling agroforestry through afforestation schemes and support for energy plantations on degraded land. These efforts can turn the land sector into a carbon sink while boosting farmer resilience—especially if tied to new rural finance and market access mechanisms.

What this means for NDCs

As countries prepare to submit new or updated NDCs, it is essential that they prioritize sector-specific measures capable of delivering short-term emission reductions, particularly in the three key sectors identified: electricity generation, passenger transport and forestry. To stay on track for 1.5°C, these targeted actions—ideally supported by sectoral targets—must be placed at the center of national climate strategies, not deferred.
NDCs should:

- Identify immediate measures to scale proven technologies in power, transport, and land use
- Move beyond pledges to institutional and fiscal readiness
- Ensure implementation mechanisms are in place to deliver results before 2030

The window to act is narrow, but the tools are already in hand.

Next in NDC Insights

In our next edition, we'll look at the short-term actions countries can take this decade to stay on track for 1.5°C. From phasing out coal to cutting methane and scaling clean transport, we'll highlight practical steps national pathways show are both urgent and achievable.

Missed the last newsletters? Download:
"Beyond pledges: Are NDCs addressing the transformations we need?"
"What role for Carbon Capture and Storage?A measured look at its place in the transition"
"Can land use deliver on climate and development goals?"
"Can we tackle non-CO$_2$ emissions without compromising food security?"

About the DDP and why this newsletter matters

The Deep Decarbonization Pathways (DDP) initiative supports countries in designing strategies for deep emissions cuts aligned with development goals.

Since 2013, DDP has worked with local experts to build bottom-up, country-driven pathways that turn climate ambition into real, grounded action.

Stay updated with the country news, publications and events!

Argentina | Brazil | China | India | Indonesia | Mexico | Senegal | Nigeria | South Africa

Join the DDP initiative on Bluesky

Our mailing address is:
DDP Initiative
27 Rue Saint-Guillaume
7e Arrondissement
Paris 75007
France