WORLD BANK GROUP
Climate Change

There are various approaches to credit a country for its achievements in reducing greenhouse gas emissions. Below, five approaches are compared, to help understand which approach a country can use.

DIFFERENT APPROACHES TO CARBON CREDITING

WHAT IS CARBON CREDITING

A country can develop and host a range of measures that reduce harmful greenhouse gas emissions. Such measures are commonly known as mitigation activities and may vary in scale and impact ranging from large scale, such as a solar energy plant, to micro scale, such as distribution of energy-efficient cookstoves to individual households. If emission reductions generated through such interventions fulfill a set of specific criteria, they can be converted into carbon credits, which can be sold and exchanged internationally through an Emission Reduction Purchasing Agreement (ERPA). The process of converting emission reductions into carbon credits is known as carbon crediting.

HOW CARBON CREDITING WORKS

To quantify the amount of emissions that have been avoided, the mitigation activity is compared to a baseline. The choice of the baseline is determined by the nature of the mitigation activity and business-as-usual scenario. For example, launch of a wind power project will help avoid X metric tons of CO_2 emissions by providing energy from a renewable source, instead of coal that would have been used otherwise. This is an example of a technology-based baseline, where the mitigation activity comprised replacement of a polluting technology with a cleaner alternative. In case the emissions are mitigated by introducing a new policy, the baseline can be set through economic modelling, comparing scenarios "before" and "after" the intervention. Lastly, a baseline can be represented by sectoral or jurisdictional targets that have been surpassed. In this case, crediting will be applied to the difference between the initial targets and the factual performance of the mitigation activity. This crediting approach encourages and rewards increased ambition in mitigating greenhouse gas emissions.

PAYMENTS FOR CARBON CREDITS

Payments for carbon credits can be provided in two ways: using concessional climate finance (results-based climate finance) or through carbon market mechanisms.

In the first case, the buyer supports the host country in reaching or exceeding their NDC targets by agreeing to purchase carbon credits that will be generated in future. By promising to pay for the results, such an ERPA helps reduce investment risks and catalyze finances from other sources, such as the private sector.

Alternatively, the country may opt to trade carbon credits internationally, using available carbon market mechanisms. In this case, the country might benefit from selling carbon credits at a market-based carbon price that is higher than the cost of generating those emission reductions. However, when carbon credits are sold, only the buyer can use these emission reductions towards their NDC compliance.

TYPES OF CARBON CREDITING

Credited mitigation activities can be individual investment projects (project-based crediting), programs of projects (programmatic crediting), or policies (policy crediting). Crediting also can be used to reward a country for going beyond the initially set sectoral or jurisdictional targets (sectoral or jurisdictional crediting).

Which crediting approach to choose depends on the objective and the context of the mitigation activities. Each approach comes with different methodological requirements and different strengths and weaknesses.

CREDITING APPROACH	OBJECTIVE	METHODOLOGY	STRENGTHS/ WEAKNESSES
Project-based	Support individual investment projects	Baselines and Monitoring, Reporting, Verification (MRV) based on technology	**Relative simplicity** **Allows for pure private sector transactions** **Limited opportunities to scale up; risk of leakage* and perverse incentives**
Programmatic	Support a larger number of similar projects often small and micro scale (including household level) within a program	Baselines and MRV based on technology Often accompanied by an incentive program that transforms carbon revenues into other incentive payments	**Relative simplicity** **Allows to scale up through replication of similar projects** **Allows to reach small- and micro-scale activities** **Risk of leakage and perverse incentives**
Policy	Support a policy intervention such as an energy efficiency standard or energy/carbon pricing policies	Baselines and MRV based on economic modelling	**Large scale** **High transformative impact** **High complexity** **High project preparation costs** **Limited role of private sector in transaction** (private sector still plays a key role in implementing incentivized mitigation activities).
Sectoral/ Jurisdictional	Support overachievement of sectoral/jurisdictional mitigation benchmarks/ targets	Sectoral/jurisdictional baseline and MRV Crediting only possible on an aggregate level	**Large scale** **Low risk of leakage and perverse incentives** **High dependency on external factors (high delivery risk).**

**Note:* carbon leakage occurs when an emissions-reduction policy, such as a carbon price, inadvertently causes an increase in emissions in other jurisdictions that do not have equivalent emissions-reduction policies.