CARBON MARKET WATCH

# Hidden in plain sight:
## Flawed renewable energy projects in the voluntary carbon market

REPORT | JUNE 2024

# Table of contents

# Executive summary

There is a surplus of around 829 million carbon credits[1] in the voluntary carbon market (VCM) from the four top voluntary registries (Verra, Gold Standard, American Carbon Registry and Climate Action Reserve), the largest share of which (35% of all project types) belongs to renewable energy projects, according to Berkeley Carbon Trading Project.

In 2023, companies used approximately 53 million carbon credits from renewable energy projects, more than the 50 million used from REDD+ forestry projects. Whilst REDD+ credits have been the subject of intense media and civil society scrutiny, the same cannot be said of renewable energy projects, which are plagued by similar issues when used for offsetting, yet manage to hide in plain sight.

Serious concerns exist regarding the use of renewable energy projects to generate carbon credits. Those that are large-scale and connected to the grid are highly unlikely to be able to demonstrate additionality, except in least-developed countries, because renewable energy is as feasible in economic terms and often more so than fossil fuel-based energy. In most cases, these projects were already not additional when they were initiated several years ago, in part because carbon credit revenues are insignificant compared to revenues from electricity sale, and hence cannot credibly change the profitability of such large-scale plants.

Moreover, in certain cases, these projects have caused detrimental local impact, such as through the displacement of communities and/or the destruction of the surrounding environment caused by the building of large hydroelectric dams.

At the heart of the issue lies the Kyoto Protocol's Clean Development Mechanism (CDM). Lax methodologies developed under the CDM enabled a large number of non-additional renewable energy projects to be registered. These methodologies were then adopted and used by voluntary carbon standards to register further credits. Although the two biggest standards (Verra and Gold Standard) have now stopped registering such projects in most regions of the world, they continue to issue large volumes of credits from existing projects.

This has resulted in the voluntary carbon market becoming saturated with non-additional renewable energy credits. Many of these projects, initially registered under the CDM, are now seeking to transfer to the Paris Agreement's Article 6 carbon markets. This risks

[1]Excludes credits from ARB (California Air Resources Board) and WA (Washington's Ecology Offsets).

flooding the new system with the same low-quality credits that undermined the credibility of the CDM.

The lack of scrutiny these projects have enjoyed is exemplified by the number of companies that have chosen not to disclose their purchases of such credits. While most forest-based carbon credits are retired by companies who disclose their identity, around 90% of credits from renewable energy projects have been retired anonymously.[2] This suggests that buyers are aware of the low quality of renewable energy credits, but buy them anyway because they are cheap.

Addressing the surplus and low quality of renewable carbon credits in the VCM is crucial. Credit buyers should exercise careful due diligence and prioritise the purchase of credits from projects that offer real climate impact, rather than being swayed by their low price. Standards can help make this a priority by enhancing transparency and enforcing requirements for public disclosure of detailed information on credit retirement.

Additionally, standards should curtail further issuances of non-additional renewable energy projects by restricting the renewal of crediting periods. Furthermore, the Integrity Council for the Voluntary Carbon Market (ICVCM) must enforce its stringent criteria to exclude substandard credits and promote best practices to prevent the market from being flooded with more low-integrity, poor-quality carbon credits.

[2] Allied Offsets Demo Platform

# Current state of renewable energy carbon credits

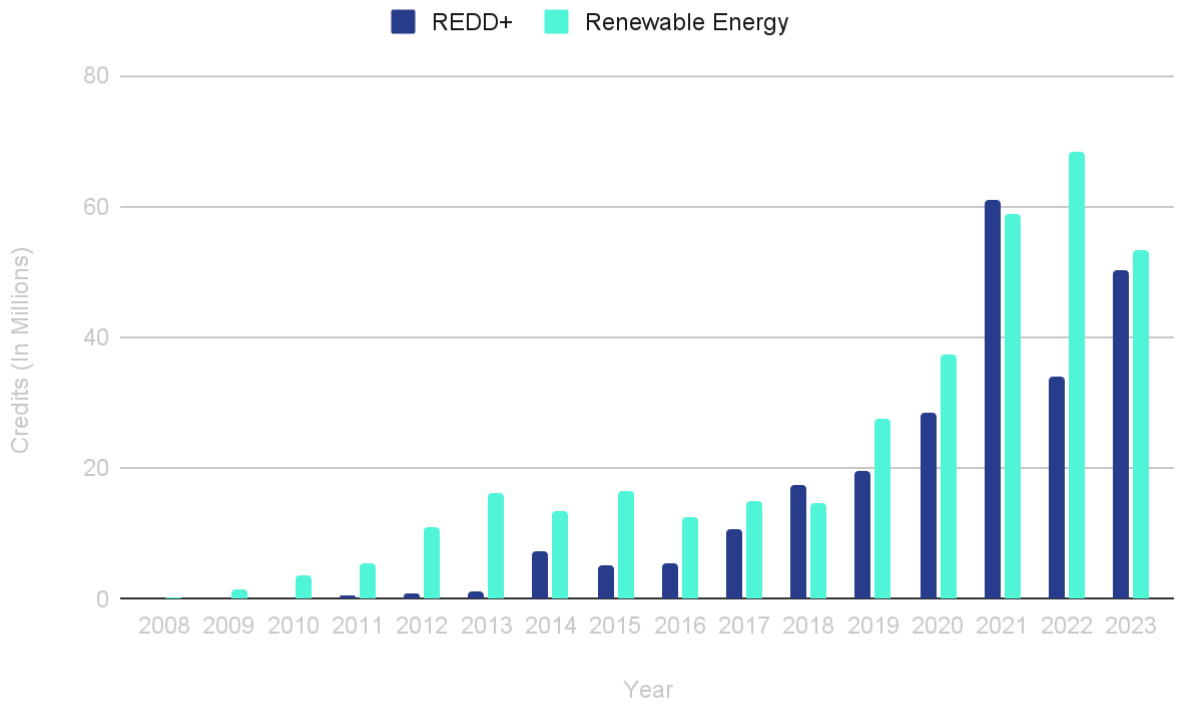
According to Berkeley Carbon Trading Project which tracks data from the 4 biggest registries (Verified Carbon Standard, Gold Standard, American Carbon Registry and Climate Action Reserve) in the voluntary carbon market (VCM), from 1996 to 2023 around 1.8 billion carbon credits have been issued - of which almost one billion have been retired. The majority of these issuances and retirements derive from 'reduced emission projects', examples of which include forest conservation (REDD+) and renewable energy (RE), collectively accounting for over 62% of total issuances and over 64% of retirements of credits on the VCM.

In 2023, issuance and retirement of credits have decreased overall, despite a sharp spike in retirements in December[3], most of which can be attributed to Shell. There was an increase of over sixteen million REDD+ credits retired from 2022 to 2023 (34.1m in 2022/50.2m in 2023) (Figure 1). Compared to 2022 less RE credits were retired, dropping by fifteen million credits from 2022 to 2023 (68.4m in 2022/ 53.4m in 2023) (Figure 1).

As of March, 2024, RE and REDD+ credits have been retired at a similar rate - approximately 14.5 million for RE and 16.7 million credits for REDD+.

[3] Yadav, K. 2023. VCM sees bumper retirements in December with 2.6 times rise on month. S&P Global

## Figure 1: Retirement of REDD+ and RE credits (2002 - 2023)




Source: Berkeley Carbon Trading Project

REDD+ projects have attracted heightened media scrutiny in recent years due to concerns about the quality of credits as highlighted in studies and investigations from reputable sources including UC Berkeley and The Guardian. However, despite widespread acknowledgment of challenges related to "non-additionality" and their status as the project type with the most retired credits in the voluntary carbon market, renewable energy (RE) projects have not been subject to a similar public inspection.

## Renewable energy projects in the CDM

The Clean Development Mechanism (CDM) was introduced during the Kyoto protocol as a market based solution to facilitate the investment by industrialised nations in emission reduction projects based in developing nations. Despite its positive intentions, the CDM has faced widespread criticism with most of the credits, particularly those from renewable energy projects, labelled as "junk credits".[4]

The main criticism of the CDM is how it falls short of guaranteeing genuine "additional emission reductions".[5] This suggests that many projects approved under the mechanism are likely to have occurred regardless of its financial incentive. Consequently, CDM credits purchased as a means towards achieving climate targets do not have a positive mitigation impact and can in fact lead to an increase in emissions.

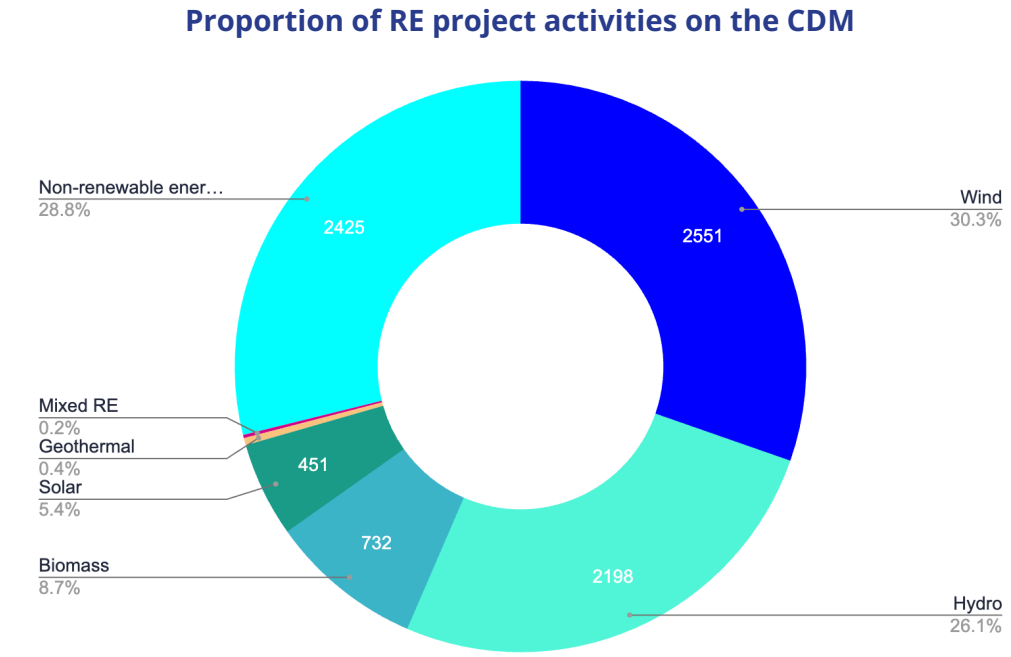
Renewable energy projects constitute the majority of CDM projects. Wind energy initiatives provide the largest portion (30.3%) of all CDM projects, closely followed by hydropower projects accounting (26.1%)[6] (Table 1 and Figure 2).

[4] END THE CDM - Carbon Market Watch
[5] Oeko Institut: How Additional is the Clean Development Mechanism?
[6] UNFCCC

## Table 1 and Figure 2:
## Percentage of Renewable Energy Projects on the CDM

| Project Type | Number of project activities (PA) on the CDM | Percentage of project (PA) activities on the CDM |
|---|---|---|
| Wind | 2551 | 30.34% |
| Hydro | 2198 | 26.14% |
| Biomass | 732 | 8.71% |
| Solar | 451 | 5.36% |
| Geothermal | 34 | 0.40% |
| Mixed RE | 15 | 0.18% |
| Tidal | 1 | 0.01% |
| Non-renewable energy projects | 2425 | 28.85% |
| **Total number of RE project activities** | **5982** | **71.15%** |
| **Total number of all project activities** | **8407** | **100%** |

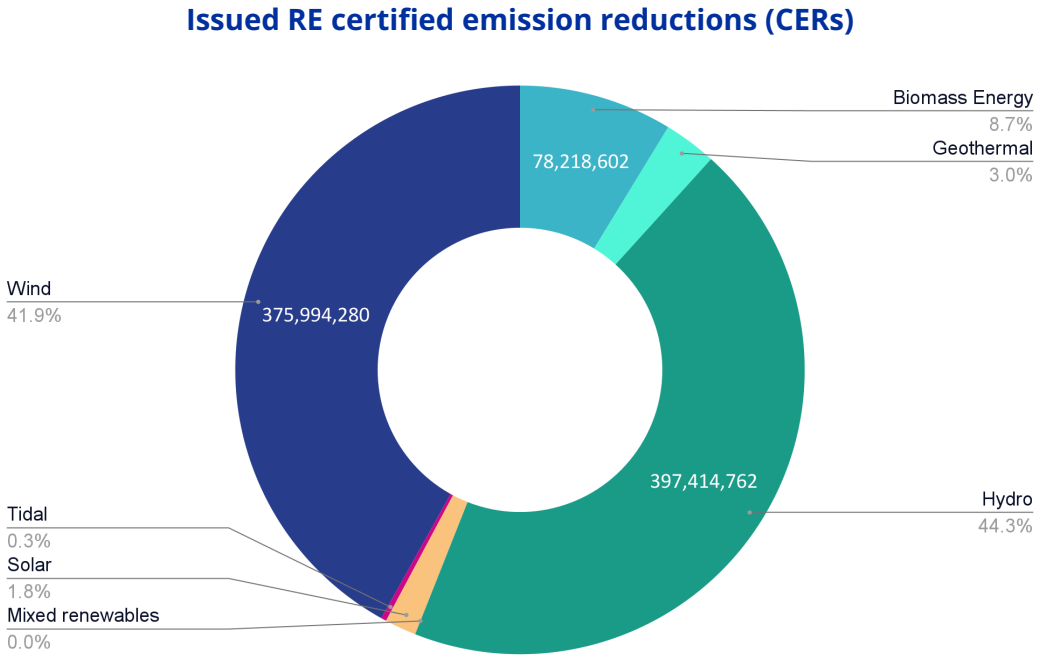
Source: CDM (Updated 2nd of January 2024)




Source: CDM (Updated 2nd of January 2024)

Although there are fewer hydropower projects, they tend to be large in scale and this is reflected in high levels of credit issuance, which surpasses any other project type (Figure 3).

## Figure 3: Certified emission reductions based on renewable energy projects

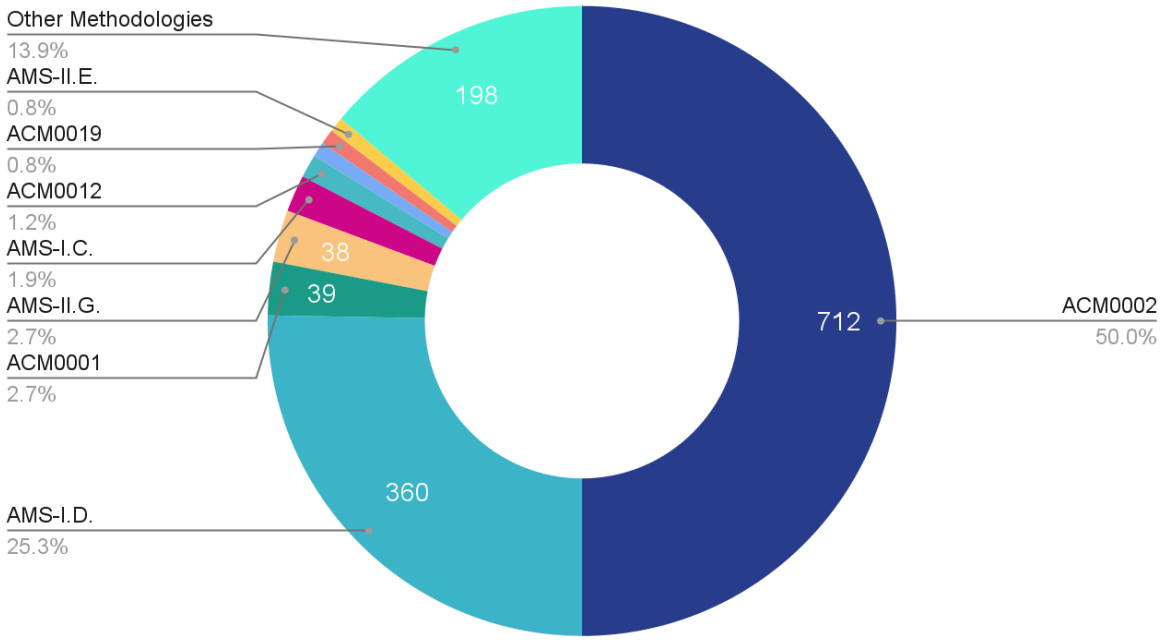



Source: CDM (Updated 2nd of January 2024)

Eligible CDM project activities seeking to apply for transfer to the new Article 6.4 mechanism of the Paris Agreement have until 31st December 2023 to apply. Of a potential 3,494 projects activities (PA) and programme of activities (PoA), 1,424 project activities have applied for transition[7]. Notably, 75% of these are from large scale ACM0002 and small scale AMS-I.D grid-connected renewable energy methodologies. 65% originate in China and India.

Host countries determine if they will accept projects seeking to transition to Article 6. However, both countries and companies will be obliged to follow rules implemented by the mechanism. For example, this applies to "corresponding adjustments", whereby any emission reductions achieved by a project from 2021 and beyond can not be counted by the host country towards its Nationally Determined Contribution (NDC) target if that emission reduction is recorded by another country under article 6. This might create potential challenges for some countries, especially those considering authorising a large number of projects for transition.

## Figure 4: Distribution of projects under CDM methodologies applying for transition to Article 6




Source: CDM (Updated 15th of May 2024)

[7] FAQs on transitioning CDM activities to the Article 6.4 mechanism

## Renewable energy projects in the VCM

Verra and Gold Standard have adopted several CDM methodologies that have faced criticism due to risks of non-additionality and potential over-crediting. The most utilised methodology is the "ACM0002: Grid-Connected Electricity Generation from Renewable Sources", constituting 19.6% of Verra projects and 15.6% of Gold Standard projects, totalling more than half of renewable energy projects across both standards. Furthermore, half of the CDM projects seeking to transition to Article 6 employ this methodology.

Recent research indicates that removing projects utilising this methodology would improve the overall quality of credits in the market. Both Verra and Gold Standard decided in late 2019 to curtail the development of all new grid-connected projects, with exceptions granted to projects located in least developed countries (LDCs). However, many projects utilising this methodology have already issued credits, continue to be registered and are permitted to issue more credits.[8] According to Berkeley Carbon Trading Project there is currently a total surplus of 284.4 million renewable energy credits on the market from VCS and GS registries, 258.7 million (91%) of which originate from the ACM0002 methodology.

Despite new grid-connected renewable energy projects no longer being accepted by Verra and GS due to concerns over non-additionality - except in LDCs and Small Island Developing States (SIDS) - they continue to be allowed by the Global Carbon Council (GCC) registry, and are eligible for use by airlines under the pilot phase of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). The GCC currently has 70 active projects and 494 awaiting approval. Some of these projects have been used to justify the carbon neutral claims of the 2022 FIFA World Cup in Qatar. Purchasing these credits is highly unlikely to have delivered any tangible benefits for the climate, and certainly does not fully compensate for the emissions generated by such events.

[8] Ceezer: Navigating the murky waters of renewable energy carbon credits: A guide to distinguishing the good from the bad

# Limitations of Renewable Energy Projects

## Non-additionality and human rights abuses

Grid-connected renewable projects typically offer attractive returns on investment and are therefore unlikely to fulfil 'additionality' criteria in most regions of the world (same as footnote 8) . According to a European Commission study, 85% of CDM projects, covering 73% of the potential certified emission reductions (CERs) supplied between 2013 and 2020, are "highly unlikely" to be additional. The majority (66%) are renewable energy sector projects. Insights made by Barbara Haya during the development years of the CDM sheds light on the challenges surrounding additionality, particularly with hydro projects, and raises doubt over the ability of many such projects to deliver a meaningful climate impact.

Moreover, a 2011 study by Haya and Parekh argues that large-scale hydropower projects should be universally excluded from the CDM as they are classified as common practice, rendering them "unlikely to be additional". The Carbon Credit Quality Initiative (CCQI) reinforces this viewpoint, indicating that solar photovoltaics and onshore wind projects under the CDM are unlikely to depend heavily on carbon revenues, as factors such as policy support and electricity sales have more significant influence on their implementation. Recent research from The Guardian examining 50 of the most credited VCM projects, reveals that of 16 renewable energy projects assessed (e.g dams, solar and wind projects), 15 are "likely junk". Notably, one of these projects, a hydrodam in Brazil, has been associated with causing harm to indigenous people and local communities, damaging biodiversity, and emitting large amounts of carbon emissions.

The CDM has also failed to implement robust safeguards against potential environmental and social harms, particularly concerning indigenous communities. Various renewable energy CDM projects, particularly large-scale hydro dams, have been linked to instances of human rights abuses. Investigations by the Wuppertal Institut corroborate these concerns, revealing that two hydroelectric dams and one geothermal project were implicated in forced displacements and conflicts over land rights. One of these projects has since transitioned to the VCS, while three others have applied to transition to the Article 6 mechanism.

Based on issues highlighted in previous studies regarding non-additionality and human rights abuses, most RE projects fall short of meeting the requirements put forward by the Integrity Council for the Voluntary Carbon Markets (ICVCM) Assessment Framework. The framework sets out specific criteria used to determine whether carbon credits and carbon projects comply with the Core Carbon Principles (CCP).

For example, criteria 8 requires that: "*The GHG emission reductions or removals from the mitigation activity shall be additional, i.e., they would not have occurred in the absence of the incentive created by carbon credit revenues*." Criteria 7.6 a) states that "w*here the mitigation activity directly or indirectly impacts IPs & LCs, including livelihoods, ancestral knowledge and cultural heritage, the carbon-crediting program shall require mitigation activity proponents to ensure that the mitigation activity: 4) does not force eviction or any physical or economic displacement of IPs & LCs, including through access restrictions to lands, territories, or resources, unless agreed upon with IPs & LCs during the FPIC process.*"

# Buyers of Renewable Energy Credits

Data from Allied Offsets Corporate Buyers Report revealed that in 2023 approximately 201 million carbon credits were retired. Of these, 115 million were matched to buyers, and 86 million were unmatched. Across all retired credits, the renewable energy sector accounted for the highest percentage at 38.7%, followed closely by forestry and land use at 38.2%.

Upon evaluating 2023 data (1/1/2023 - 6/9/2023) from Allied Offsets Demo Platform, disclosure of over 105.9 million credits matched the buyers. However 89.9% of renewable energy credits were retired anonymously, compared to only 25.8% for forestry and land use credits. The significant contrast suggests a strong inclination among buyers to disclose their involvement with forestry and land use credits, and a reluctance to disclose it for renewable energy credits.

Such reluctance hints at an awareness of credibility issues surrounding this project type. Despite consensus regarding their substandard quality, buyers continue to favour their purchase, potentially motivated by factors such as low prices and a lack of public scrutiny. This brings into focus the need to curtail the issuance and use of carbon credits from renewable energy projects, and for companies to standardise disclosure practices.

# Conclusion

Critical concerns regarding the credibility, effectiveness and ethical implications of renewable energy projects exist within the voluntary carbon market (VCM). Projects are unlikely to meet the quality criteria set forth by the Integrity Council for the Voluntary Carbon Market (ICVCM) and there is a lack of credible justification for them to receive the Core Carbon Principle (CCP) label.

Renewable energy projects are the most issued and retired credit type on the market, but a large majority of projects are marred by a critical lack of additionality. These concerns persist within voluntary standards, which have incorporated many of the CDM's dubious methodologies. Despite a ban on registering new projects, major VCM standards continue to issue credits to ongoing projects, and recently there is a worrying trend of standards actively engaging in re-registering projects that have a highly doubtful additionality.

Furthermore, the transfer of CDM renewable energy projects to new mechanisms such as Article 6 increases the availability and circulation of large volumes of low quality credits on the emerging Paris Agreement markets.

Finally, the reluctance of buyers to disclose their involvement in retiring renewable energy credits suggests that companies are well aware of the shortcomings of such credits, yet still opt to rely on them to support unjust climate claims.

# Recommendations

## Careful buying

Credit buyers should complete thorough due diligence before procuring credits from renewable energy projects. The vast majority of such credits are highly unlikely to deliver additional emission reductions. Opting to finance a different project type through credits, or to finance renewables through other means, would be a better option.

## Transparent Accounting

Standards should collect and make *publicly available* critical information about credit retirements, including the final beneficiary and the purpose of retirement.

## Put the rules into practice

The Integrity Council for the Voluntary Carbon Market (ICVCM) must be strict in applying its Core Carbon Principle (CCP) criteria, which would mean excluding the vast majority of RE credits from its label, as well as requiring programmes to adopt updated programme-level requirements in line with best practice, e.g. on retirement information transparency.

## Raising the bar

VCM Standards must avoid registering new RE projects that have a significant risk of non-additionality, and should take additional measures to curtail the ongoing influx of non-additional RE credits to the market. As a minimum demand, crediting periods for non-additional RE projects should not be renewed. Alternatively, a short-term deadline could be set by which all registered (but non-additional) projects will stop receiving credits.

CARBON MARKET WATCH

## AUTHOR & CONTACT

**Inigo Wyburd**
Policy Expert, global carbon markets
inigo.wyburd@carbonmarketwatch.org

### Editor
Gavin Mair, Communications Officer

### Cover design and layout
Noemí Rodrigo Sabio, Communications Officer

### Photo credit
© Nazar_ab, Getty Images