



VW's Carbon Footprint Sham

How Volkswagen is using an ineffective compensation project to shirk potential CO2 savings



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Published by

Greenpeace e.V., Hongkongstraße 10, 20457 Hamburg, Phone +49 40 3 06 18-0 **Press Office** Phone +49 40 3 06 18-340, F +49 40 3 06 18-340, presse@greenpeace.de, www.greenpeace.de
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1. Introduction

Volkswagen claims to have solved the image problem of cars as climate killers. The new ID series of electric cars is supposedly the first to have been produced “climate neutrally”. The bottom line, the VW Group maintains, is that production of these cars does not generate any CO₂, the main driver of climate change. This narrative is especially convenient to VW as it just launched the latest addition to its ID family of cars; the Group refers to its ID.4 as a “CO₂-neutral zero emission SUV”.¹ SUVs are considered particularly resource-intensive – regardless of what fuel is used – and they therefore contribute heavily to climate change and environmental degradation. The promise of climate neutrality would make driving such cars almost akin to actively fighting climate change. That sounds too good to be true. And as a matter of fact, VW’s claims are not true. This paper delivers the proof.

“First avoid, then reduce and finally compensate for unavoidable emissions – through climate protection projects elsewhere,”² says VW, summing up its strategy. The following pages will outline what is actually behind this three-pronged approach.

Too sparingly avoided, too slightly reduced

Volkswagen has in fact recently done quite a bit to reduce its CO₂ footprint in production. It has increased efficiency, and the energy used in its plants is now cleaner. But research shows that the Group could do much more even when it comes to its electric cars. Volkswagen is far from having exhausted all options to avoid emissions. If the Group were to take its own strategy seriously, it would have to design its electric cars to enable the sizing of central components, such as batteries, in a way that would facilitate the reduction of their CO₂ emissions. And VW ignores the savings potential in the steel used in its cars by choosing not to use steel from CO₂-neutral production, which could be manufactured in the required quantities – but apparently VW thinks it is too expensive. VW’s measures have reduced its CO₂ footprint in production by a mere ten percent, despite the fact that this figure could be much higher.

This gives the impression that fighting climate change is important for VW’s PR department – but only as long as it does not cost the company too much money.

Compensating without effect

Instead of systematically reducing CO₂ emissions in production, Volkswagen uses a much cheaper way to get rid of the remaining emissions – at least on paper. The company buys carbon credits from so-called offset projects. The only project mentioned by VW so far is Katingan Mentaya, a forest protection project on the Indonesian island of Kalimantan (Borneo). The idea behind such projects is simple. Their operators protect forests from being used in ways that contribute to climate change; for example, by the

timber, paper and palm oil industries. These operators then sell the amount of CO₂ which the project prevented from having been released in such assumed uses.

But this modern sale of indulgences in the form of compensation models has inherent weaknesses. They become particularly clear in the case of the forest project in Indonesia: its added effect in the fight against climate change is highly unlikely. Many factors indicate that the project operators’ assumptions regarding additionality are clearly exaggerated. It is highly probable that the forest would have stored comparable amounts of CO₂ even without the project. The project has merely shifted deforestation to other places in the region. Destruction of forest cover that may have been prevented in the project area is taking place elsewhere. Moreover, the permanence of CO₂ storage is not guaranteed. While buyers of the carbon credits continue to release CO₂ into the atmosphere, where it will impact our climate for about 100 years, it is far from certain whether the forest will still be standing in 20 or 50 years.

Considering all these objections, the conclusion is that VW will probably not save any CO₂ through compensation projects. Its alleged CO₂ neutrality is staged, a huge sham.



ID production at the VW plant in Zwickau

Key results

The present analysis first quantifies the share of compensation in the CO₂ footprint of the ID.4. In the case of the ID.4 equipped with an 82-kWh battery, Greenpeace estimates that VW „offsets“ nearly 14 tonnes of CO₂ per vehicle with projects like Katingan. This corresponds to roughly 90 percent of the original CO₂ emissions released during the production process.

Table 1: CO₂ footprint of the ID.4 and cost of compensation³

	CO ₂ footprint of the production process before savings	CO ₂ footprint after savings (volume of compensation)	Cost of compensation at USD 5 to 10 per tonne of CO ₂	Damage caused by the volume of emissions, according to the German Federal Environment Agency
ID.4 (82 kWh)	min. 15.3 t	13.9 t	59 – 118 euros	2,502 euros

The analysis also shows that further emissions in the manufacturing process could be avoided if VW focussed on the conservation of resources and energy efficiency in product planning, and worked together with suppliers of raw materials to apply modern and technically mature solutions to achieve CO₂ savings. The sourcing of CO₂-neutral steel alone could reduce the CO₂ balance of every VW car by at least one tonne.

Most notably, this paper proves that the Katingan Mentaya compensation project’s purported emissions savings are based on a chain of questionable assumptions. For example, the business-as-usual scenario (baseline scenario) used to calculate the additionality of the savings is implausible in many instances, and highly unlikely. The project’s reference regions, which are intended to provide evidence of additional climate protection, are hundreds of kilometres away, rendering them nearly useless for purposes of comparison. Furthermore, the

danger of deforestation through pulpwood plantations throughout the province where the project is located is not nearly as high as outlined by its operators. During the development stage of the business-as-usual scenario, the project stakeholders themselves evidently did not deem the baseline scenario to be very likely and only adopted it once the certification process was initiated. The project area would have been, at least legally, protected from the conversion of forest area to plantations by a national moratorium as of May 2011 – even without the REDD+ project (Reducing Emissions from Deforestation and Forest Degradation).

This all raises fundamental questions and calls into doubt the assumed additionality of the emissions savings, and VW’s attempt to use this project to compensate emissions released during the production of its ID.4.

The analysis also shows that there are conflicts with local populations over the legal status of the land and that the villages affected by the REDD+ project take a negative view of the project. That contradicts VW’s own story, which claims that projects such as Katingan Mentaya are beneficial to local communities.⁴

Despite investments in measures to counter deforestation, forested cover in the project area has decreased since the project was initiated. There are indications of the so-called carbon leakage problem: deforestation in the villages adjacent to the project area has increased over the course of the project. Moreover, villagers are migrating and moving to other areas.

All in all, the analysis shows that even in the case of a showcase REDD+ project such as Katingan Mentaya, the added benefit to the climate and local communities is highly questionable and cannot by any means be quantified. On the contrary, offsetting contributes to the illusion of supposed climate neutrality, thus delaying the swift implementation of changes to production processes, product ranges and business models which could result in real CO₂ savings.

2. Too sparingly avoided, too slightly reduced

2.1 How much CO₂ does VW have to compensate in its ID.4 production?

According to information provided by VW, the company is implementing three strategies to be able to market its ID vehicles as “balance sheet CO₂-neutral”. They are described as: “Firstly, reducing CO₂ effectively and sustainably. Secondly, switching to renewable energy sources for power supply. Thirdly, compensating unavoidable emissions.”⁵

Volkswagen has not yet disclosed how much of the CO₂ released in the production and supply chain of the ID.4 is compensated. However, VW’s own information allows us to make an approximate calculation.

According to Volkswagen, it has reduced the CO₂ footprint in the production of ID models in two ways.⁶ Firstly, measures to increase energy efficiency and the use of green electricity for production at its Zwickau plant have reduced the amount of CO₂ released by 66 percent; secondly, the use of green electricity in the production of battery cells has reduced the amount of CO₂ released in this energy-intensive process.

VW states that the original CO₂ footprint of an ID.3 Pro with a 62-kWh battery amounts to 14 tonnes of CO₂. By introducing the above measures, VW lowered carbon emissions by 1.3 tonnes to 12.7 tonnes. The rest is compensated by purchasing carbon credits.⁷

The ID.4 is marketed with an 82-kWh battery, which has a storage capacity that is 20 kWh larger than the ID.3 Pro’s battery. Current studies calculate that the production of electric vehicle batteries generates an estimated 61 to 106 kg of CO₂ emissions per kWh of battery storage capacity.⁸ Even if we assume the most favourable value of 61 kg CO₂/kWh, the larger battery of the ID.4 generates roughly 1.2 tonnes of additional CO₂ emissions in the production process. This means that once savings and green electricity are considered, 13.9 tonnes of CO₂ are still emitted per vehicle manufactured, which VW compensates through the Katingan project. This is without taking into account other CO₂ emissions caused by the larger body of the ID.4 whose production requires more resources than the ID.3’s. The German Federal Environment Agency calculates that the release of a tonne of CO₂ leads to costs of 180 euros in climate damage. According to the project operators, one tonne of CO₂ supposedly compensated through the Katingan project costs between 4 and 8 euros. For an ID.4, this would amount to compensation costs ranging from 59 to 118 euros.⁹

2.2 Supposedly unavoidable

According to Volkswagen, it only compensates the portion of CO₂ emissions in the production process that is “unavoidable”.

This, however, is not true. Emissions can be avoided in the product planning stage by focussing on the conservation of resources and energy efficiency when designing cars. In the case of the ID.4, an SUV, this obviously did not happen and will most probably play only a minor role in other electric SUV models, ID.5 and ID.6, that VW has in planning (2021). Due to their design, SUVs use up more resources and their energy efficiency is lower than that of comparable non-SUV vehicles.

For example, the ID.4 needs a larger battery, the production of which generates more CO₂ than that of the ID.3, to achieve a range similar to the ID.3’s in the standardised driving cycle defined by the WLTP (Worldwide Harmonised Light Vehicles Test Procedure) (55 kWh for about 350 km in contrast to 48 kWh for about 330 km). With an identical 82-kWh battery, the ID.3 travels nearly 45 kilometres farther than the ID.4: a plus of nearly nine percent (see Table 2). This is due to the ID.4’s larger frontal area and its greater weight, which at more than two tonnes exceeds the ID.3’s weight by 190 kilos when both vehicles use the same battery size. Because the ID.4’s larger frontal area becomes particularly noticeable at higher speeds, this disadvantage is likely to be even more apparent when the car is driven on high-speed roads.

Table 2: Comparison of range between ID.3 and ID.4 models¹⁰

	ID.3 Pro S / Tour	ID.4 Pro / 1st / 1st Max
Battery storage capacity (gross) in kWh	82 / 82	82 / 82 / 82
WLTP range in km	549 / 542	522 / 496 / 487
Average WLTP range in km	545.5	501.7

No commitment to “green steel”

VW could also save more CO₂ in the supply chain. There are, for example, technically mature processes for the production of CO₂-neutral steel. But currently their swift introduction is being delayed mainly due to economic hurdles.

Hydrogen direct reduction is one of the methods that can be used to produce “green steel”. If production is based primarily on green hydrogen and a proportion of biomethane, a CO₂ reduction of 97 percent is achievable versus conventional reduction processes that use coke. This would make it possible to avoid more than an additional tonne of CO₂ per car produced.

But even a direct reduction method using natural gas would already allow a 66 percent reduction of CO₂ emissions, in a first step, compared to the process used currently.¹¹

These climate-friendly processes are more complex than conventional processes, making carbon-neutral steel more expensive. An Agora Energiewende transition study published in 2019 calculated that mitigation costs in operations with hydrogen are between 99 and 165 euros per tonne of CO₂, and 60 euros per tonne of CO₂ in operations with natural gas.¹² In comparison, the alleged compensation of a tonne of CO₂ through the Katingan project costs between 4 and 8 euros, according to the project operators.¹³

In addition to a policy framework, which would distribute the additional costs, commitment to procure CO₂-neutral steel by one of the largest buyers of steel would be helpful. Germany's car industry, and especially Volkswagen as the market leader, could trigger investment in direct reduction plants by purchasing CO₂-neutral steel at scale. The industry would need to buy at least 1.5 to 2 million tonnes of steel per year to make it profitable to replace a conventional blast furnace with a direct reduction plant. To put this into perspective, about 3.7 million tonnes of steel were needed to manufacture the 4.6 million cars recently produced in Germany. This means that the Volkswagen Group, by far Germany's largest automotive manufacturer, could therefore alone trigger such investments.

However, at a 2019 meeting of stakeholders, VW made it clear that only pilot projects would be implemented for those measures intended to reduce CO₂ emissions in the supply chain that incurred additional costs. Only cost-neutral measures were to be implemented in a first step.

Phasing out the internal combustion engine is not enough to mitigate climate change

The phase-out of the combustion engine and the switch to battery electric propulsion systems are the prerequisites for the success of the transformation of the transport sector. But the road to effective climate protection does not end with the introduction of new vehicle propulsion systems. Each car sold by Volkswagen in 2018 emitted an average of 53.8 tonnes of CO₂; this includes emissions released during production and throughout cars life cycle. By far the greatest proportion of this (44.6 tonnes) is released while the car is being driven. Production generates 6.5 tonnes and recycling an average of 2.7 tonnes.¹⁴ If electric vehicles such as the ID.3 and the ID.4 are charged exclusively with electricity from renewable sources, emissions released when they are in use can be completely eliminated. That is why VW's announcement that it will stop producing internal combustion engines is such an important and promising step. But the VW Group is taking too long to meet obligations under the Paris climate change agreement. VW's intention of investing several billions of euros in developing another generation of diesel and petrol cars – which will be sold until 2040 – is incompatible with the goal of limiting global warming to 1.5°C. VW should stop developing these cars immediately and instead invest the money in restructuring the company to make it climate compatible. VW should stop selling any further cars with combustion engines by 2028 at the latest.¹⁵

By switching to battery electric propulsion, VW can lower their cars life cycle emissions by about 70 percent. But to embark upon a course that is compatible with the 1.5°C goal, emissions released during the production process must also be reduced to zero in any way possible. Therefore, it is imperative that models be designed to be as resource-efficient as possible and their production as carbon neutral as possible. To keep the electricity demand of the transport sector to a minimum, car energy efficiency is of great importance. Compared to similar models in other vehicle classes, SUVs do worse due to their design (heavier, larger frontal area) both in terms of resources and energy efficiency. VW should therefore stop producing SUVs and replace them with climate-friendly products and services.

3. Modern trade in indulgences: compensating CO₂ through REDD+ projects



Natural beauty preserved: REDD projects like to use idyllic rainforest images to promote themselves

REDD+ (Reducing Emissions from Deforestation and Forest Degradation) is an instrument of international climate change policy developed under the United Nations Framework Convention on Climate Change (UNFCCC). The underlying idea is to stop the deforestation and degradation of rain forests in countries of the Global South with external funding – and thus mitigate climate change.

The aim is to support local and regional communities by offering them alternatives to develop in ways that do not involve deforestation. This is supposed to make the preservation of forests financially more attractive than investing in other types of use. While REDD+ in the context of the UNFCCC is state run, private-sector REDD+ projects have also emerged whose carbon offsets are generally used by companies to compensate their own carbon emissions or the emissions of certain products for marketing purposes. Within this system a monetary value is assigned to the carbon stored in forests. The Katingan Mentaya project used by Volkswagen is such a project.

3.1 General problems of REDD+ projects

How much the climate actually benefits from REDD+ projects is a matter of increasing controversy. A 2018 report by the Norwegian Office of the Auditor General gave Norway's REDD+ operations bad grades. According to this report, results are

“uncertain” and “unsatisfactory”. The problems associated with carbon leakage alone lead to “considerable uncertainty over the climatic impact of REDD+”.¹⁶ Leakage in this context refers to the problem that forest protection in one place results in increased deforestation in another place.

Last year, even the REDD+–friendly Center for International Forestry Research (CIFOR) presented a critical evaluation of the effectiveness of REDD+ projects to date: “Despite a lack of evidence from rigorous impact evaluations, it is clear that REDD+ initiatives have not yet stopped tropical deforestation.”¹⁷

The criticism is also directed against the calculation of the additionality of REDD+ projects. These calculations are used to determine how effective these projects are in mitigating climate change and are a prerequisite for the sale of carbon offsets. For nobody can say for sure what would have happened to the forest in absence of the REDD+ project: Perhaps it would have been destroyed, but perhaps not – or at least to a significantly lesser extent than predicted by the project developers.¹⁸

To demonstrate additionality, project developers draft a baseline scenario. This scenario is meant to answer the following question: What would have happened if the REDD+ project hadn't existed? Such a scenario is by nature hypothetical, it cannot be verified. Only the plausibility of the assumptions can be assessed.

To make matters worse, the draft of the baseline scenario includes false incentives: as only the difference in greenhouse gas emissions between the baseline scenario and the project scenario can be sold as certified CO₂ offsets, the project developers have an incentive to draft a baseline which is as destructive as possible. The less favourable the assumed development of the forest cover in the absence of a project, the greater the number of tradeable CO₂ offsets.¹⁹

The certification bodies in turn, whose evaluation of additionality and other aspects is a prerequisite for the sale of carbon offsets, are commissioned and paid by project operators. This makes them financially dependent. A truly independent and critical evaluation of the assumptions can therefore not be guaranteed.

Finally, there are also doubts regarding the “permanence” of REDD+ projects: No one can guarantee that the protected forest will still be standing and storing CO₂ in 10, 20 or 50 years. There are examples of REDD+ projects that disappeared after just a few years—because the land was needed for other uses such as mining, for example. But by then offsets had already been sold and the CO₂ emissions that were supposed to have been compensated had already been released into the atmosphere.²⁰

A fundamental problem of all REDD+ projects lies in the different time it takes for carbon to move through the carbon cycles of underground fossil reservoirs in comparison to forests. While fossil fuel reservoirs take millions of years to form and the CO₂ released when they are burned affects the atmosphere and the climate – sometimes for more than a hundred years – cycles in forests are significantly shorter.²¹

In short: while intact forest landscapes are an important pillar in achieving climate neutrality and the goals of the Paris climate agreement cannot be met without the massive expansion of natural CO₂ sinks, their conservation should not be used to compensate CO₂ emissions generated by the manufacture of cars and other products. Forest conservation projects are important and they are a valuable contribution to the preservation of forests, biodiversity and the binding of CO₂. For this, financial support is urgently needed. However, their contribution to climate neutrality should not be quantified or sold in order to justify emissions elsewhere.

3.2 Criticism of Katingan Mentaya

Katingan Mentaya is a REDD+ model project that oil giant Shell has already used in its external communications to offer its customers climate-neutral petrol.²² Verified according to the most stringent standards for climate protection projects, funded by the Clinton Foundation, championed by actor Harrison Ford, and the recipient of several sustainability awards, this REDD+ project is the perfect example of a promise of climate neutrality with no need for sacrifice.

The Indonesian company PT Rimba Makmur Utama (PT RMU) bears the main responsibility for the Katingan Mentaya project. It was founded in 2007 and submitted an application for an Ecosystem Restoration Concession for the project area to the responsible ministry in 2008. The investment firm Permian Global, the Indonesian Puter Foundation and the NGO Wetland International are also stakeholders. The project itself states that it was officially launched on 1 November 2010, when it began carrying out field investigations.²³ The project was granted its first license for part of the area in October 2013, and licensing for another area followed in November 2016.

The company’s co-founder and CEO, Dharsono Hartono, used to work in New York in JP Morgan’s real estate division. Explaining his original reasons for entering the CO₂ compensation business, he said: “Suddenly my JP Morgan head blipped and said, ‘This is just like real estate’. If you manage it properly, there will be value, there will be appreciation, you can make money out of it.”²⁴

In an interview in late 2019, Hartono explained that carbon offsets sold from the project were priced between five and ten US dollars (four and eight euros) per tonne of CO₂. That translated to a potential turnover of up to 75 million dollars a year.²⁵

3.2.1 Additionality

Documentation for the Katingan project lists seven alternative land use scenarios that could have materialised had the project not been realised: industrial acacia plantations, industrial oil palm plantations, forest used for commercial logging, unprotected forest, protected forest, smallholder farming, and mining.²⁶

Project partner Permian Global also mentions the existence of several possible land use scenarios in reply to a Greenpeace Germany request for information of 8 September 2020: “It is also worth noting that conversion to acacia plantations was one of several realistic and credible land use scenarios that our baseline analysis found could have occurred within the project area had it not been for the successful implementation of the project.”

“A single credible scenario”

However, this statement by Permian Global contradicts its own project design document (PDD), which, after examining legal requirements and other barriers, names acacia plantations as the only conceivable purpose for which land in the project area could be used: “In conclusion, significant barriers prevent the realization of all but a single credible land use scenario: industrial acacia plantation.”²⁷

Regarding the expansion of oil palm plantations over the last decade, the PDD stated: “The area of oil palm plantations in Indonesia has increased dramatically over the past decade, including in Central Kalimantan, although almost exclusively in areas legally outside of the forest estate (designated as APL or Other

Land Utilization) or within the forest estate in areas earmarked for conversion (designated HPK or Conversion Forest).” But the forest within the project area is a so-called “production forest” (hutan produksi). This status would have legally prohibited its conversion into oil palm plantations, as the PDD further explained.

Commercial logging would have been legal, but the project description excluded this option because it would not have been economically worthwhile, a factor which also excluded mining because of the lack of raw materials in the project area. Likewise, the expansion of smallholder agriculture would have failed due to physical conditions.

The PDD also excluded the options of forest remaining unprotected or being reclassified as protected forest because these scenarios would not have generated enough state revenue.

As the project description stated, this therefore left only “a single credible” business-as-usual scenario: conversion of the area into industrial pulpwood plantations. The project cited the instance of a company that had already applied in 2008 for an acacia plantation concession in the project area: “Without the Katingan Project, this company would have successfully obtained the concession in 2010”.

On the basis of this application, those responsible for the project assumed in the baseline scenario that two other companies would have established acacia plantations on the remaining project area: “Two additional agents (B and C) were therefore projected to apply for concessions in 2010, receive reservation letters in 2011 and eventually obtain the concessions in 2012.”²⁸

Conversion to pulpwood plantations unlikely

But a closer look at the project developer’s own statement on “a single credible land use scenario” renders the option of pulpwood plantations highly implausible.

Permian Global’s answer to a Greenpeace Germany request for information was: “Acacia plantations had increased rapidly in Central Kalimantan and across Indonesia over the previous decade.” Although this statement is accurate for Indonesia as a whole and especially for the island of Sumatra, it cannot be substantiated for the province of Central Kalimantan.

The “Atlas of Deforestation and Industrial Plantations in Borneo”, published by the Center for International Forestry Research (CIFOR), calculates that additional pulpwood plantations established from 2001 to 2010 cover up to 71,599 hectares—an annual average of about 7,000 hectares – in the entire Central Kalimantan province (which comprises 15,355,888 hectares). CIFOR’s data indicates that 37,885 hectares were planted in previously non-forested areas, and 33,713 hectares in formerly forested areas (see table 3).²⁹

This corresponds to an annual average clearing of about 3,371 hectares in the entire province of Central Kalimantan.

In comparison, the project’s baseline scenario projected the deforestation of 51,292 hectares in its 150,000-hectare project area from 2011 to 2020 – an annual average of 5,129 hectares (see table 4). There is not a single historical case of this kind of deforestation in the province.

It should also be mentioned here that all of the forest cleared from 2001 to 2010 was forest on mineral soil, and not on the peat swamp soil prevalent in the project area. In order to make peat swamp areas suitable for acacia plantations, they must first be drained by means of canal systems, which would incur considerable additional costs.

Table 3: Expansion of pulpwood plantations and associated company-driven deforestation (Central Kalimantan province)

	Forest in mineral soil (Ha)	Mangrove forest (Ha)	Peat-swamp forest (Ha)	Non-forest (Ha)
2001	1,365			2,985
2002	3,297			2,673
2003	2,835			1,124
2004	8,457			6,032
2005	4,874			3,959
2006	5,054			4,759
2007	4,592			6,702
2008	1,476			3,388
2009	1,083			5,417
2010	1,083			847

Source: CIFOR

Table 4: Projected conversion of forest lands in the project area

Year	Forest (ha) deforested and converted to									TOTAL
	Acacia plantation			Infrastructure			Rubber tree plantation			
	Agent A	Agent B	Agent C	Agent A	Agent B	Agent C	Agent A	Agent B	Agent C	
2010	–	–	–	–	–	–	–	–	–	–
2011	1,589	–	–	423	–	–	133	–	–	2,146
2012	1,640	–	–	–	–	–	155	–	–	1,795
2013	1,646	1,527	2,052	–	374	406	181	130	213	6,529
2014	1,636	1,527	2,041	–	–	–	155	88	259	5,705
2015	1,655	1,517	2,022	189	–	–	150	173	255	5,961
2016	1,646	1,619	1,930	–	–	–	125	77	196	5,593
2017	1,656	1,575	2,017	–	158	207	175	207	82	6,076
2018	1,683	1,630	1,945	–	–	–	127	191	282	5,857
2019	1,719	1,518	1,949	189	–	–	179	75	181	5,811
2020	1,695	1,550	1,986	–	–	–	174	180	235	5,819

Source: PDD 2016, p. 139

3.2.1.1 Reference regions (proxy areas)

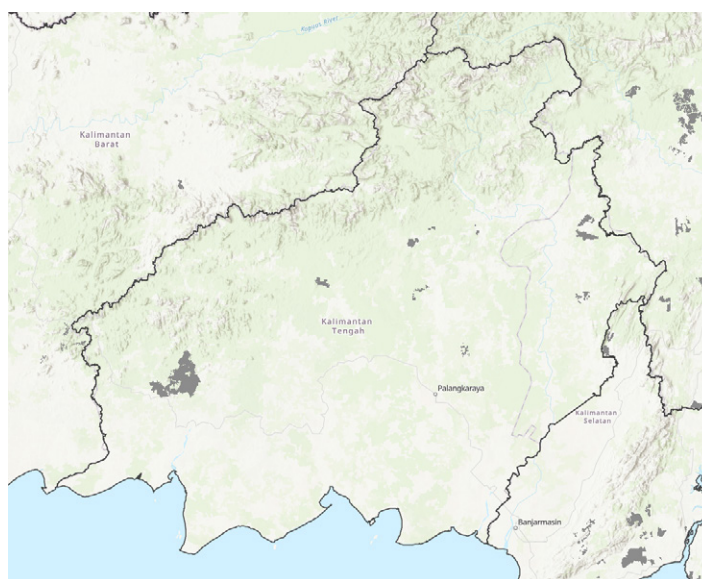
UTo calculate the rate of deforestation, REDD+ projects must identify reference regions in which the feared land use has already become reality. These regions should be as similar as possible to the project area to ensure comparability.

One of the requirements for such proxy areas is: “If suitable sites exist they shall be in the immediate area of the project.”³⁰ But the proxy areas selected for the project are not anywhere near the “immediate area”. This is because there are no comparable areas nearby.

The only larger pulpwood plantation is Korintiga Hutani in the province’s western region. It comprises about 80,000 hectares, about half of which is former forest area. This forest stood on mineral soil and was not on the kind of peat swamp soil found in the project area.

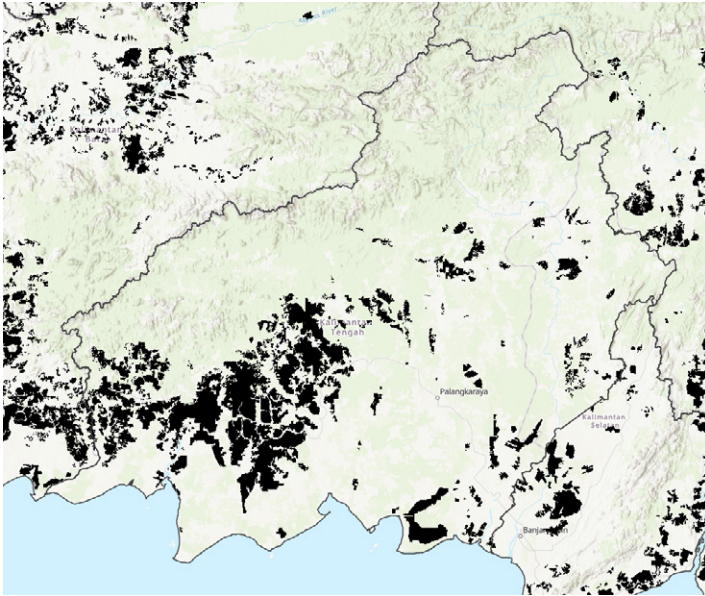
Even today, the number and size of pulpwood plantations in Central Kalimantan is relatively small (see figure 1). Of far greater importance in the province are oil palm plantations. While the overall area of pulpwood plantations in Central Kalimantan covers some 125,000 hectares according to 2018 data from CIFOR, oil palm plantations extend across an area of 1.7 million hectares (see figure 2).

Figure 1: Pulpwood plantations in Central Kalimantan province 2018 (grey)



Quelle: CIFOR

Figure 2: Oil palm plantations in Central Kalimantan province 2018 (black)



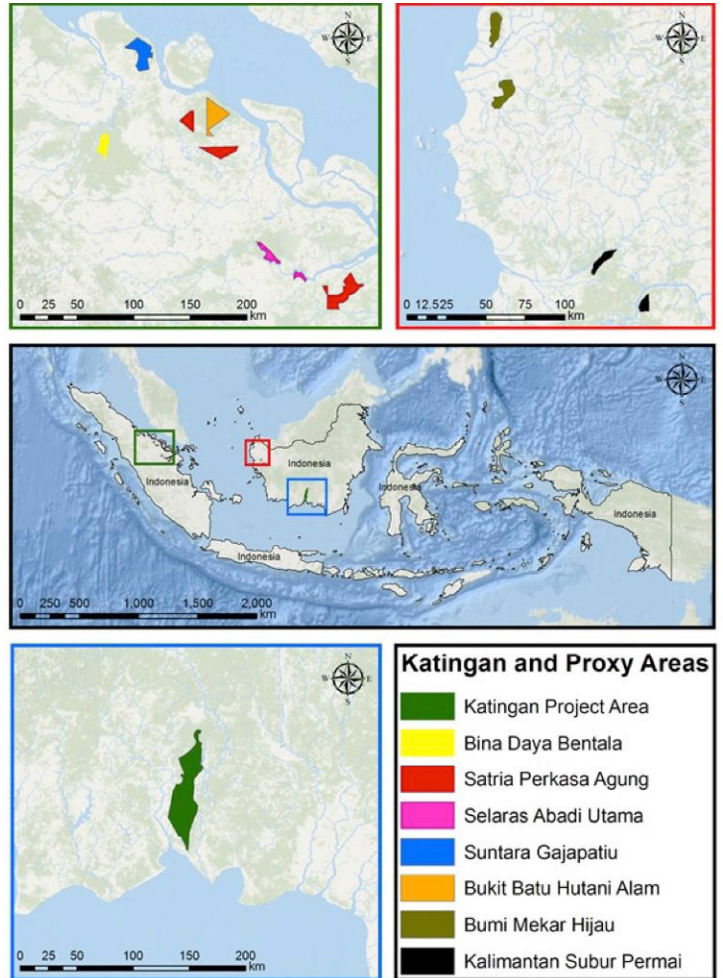
Source: CIFOR

Reference regions are more than 1000 kilometres distant

Five of the seven designated proxy areas are not even in Kalimantan but in the province of Riau on the island of Sumatra, an air distance of more than 1000 kilometres (see figure 3). The region is known for its paper industry and has a relevant infrastructure with large mills for processing wood.

The remaining two reference regions are in the province of West Kalimantan at a distance of more than 400 kilometres. However, covering about 13,000 and 25,000 hectares each, these proxy areas in West Kalimantan correspond to only a fraction of the project area’s size (about 150,000 hectares).

Figure 3: Geographic location of the reference regions (source: PDD 2016, p. 110)



Source: PPD 2016, p. 110

It was apparently clear to the project’s stakeholders and auditors that their selection of proxy areas would not strengthen the credibility of the baseline scenario. To justify its business-as-usual scenario, the PDD said: “Acacia plantations have already been established in peat forest areas of Central Kalimantan to the east of the project site in Pulang Pisau and Gunung Mas districts.”³¹

But this statement does not accord with the data collected and published by CIFOR in its “Atlas of Deforestation and Industrial Plantations in Borneo”. The atlas explains that although 2,907 hectares of forest have been cleared in the district of Gunung Mas for pulpwood (acacia) plantations since 2000, this deforestation has occurred exclusively on mineral soil. In the district of Pulang Pisau, there was no deforestation to establish pulpwood plantations whatsoever and even today there is not a single pulpwood plantation there.³²

Responding to a Greenpeace request for information on this matter, Permian Global replied: “This requires the team in

Indonesia to perform a fuller analysis of the historic and local data relating to the Pulang Pisau and Gunung Mas districts.” However, we did not receive any new information by the time this analysis was published. Permian Global also wrote: “By also using the CIFOR Borneo Atlas, it is clear that PT Ceria Karya Pranawa and PT Industrial Forest Plantation have also received licenses on peatland areas of Central Kalimantan.”

What Permian Global didn’t write was that although the company PT Ceria Karya Pranawa has been in possession of a licence since 1999 for an area north-west of the project area, some of which is peat swamp, no pulpwood plantation has been established there according to CIFOR’s data. Looking at PT Industrial Forest Plantation, we see a similar development: after the company was granted a licence in 2009 for an area covering 100,000 hectares to the north-east of the project area, nothing happened until 2015, says CIFOR. Between 2016 and 2018, 415 hectares of forest were cleared for pulpwood plantations, 224 hectares of which were on peat swamp soil.

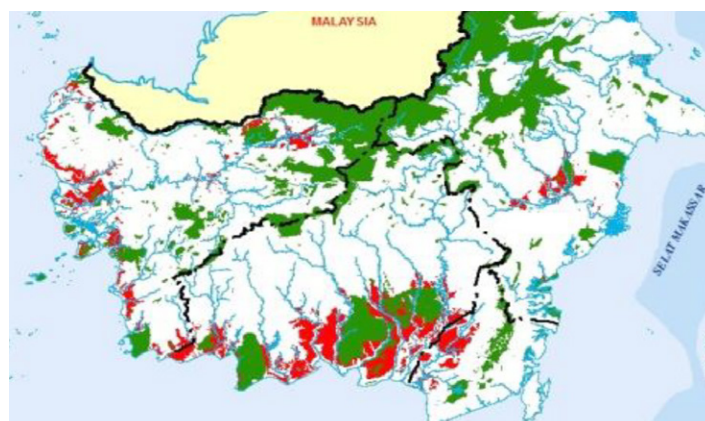
Let us recall here that Katingan PDD’s prognosis for the project area stated that more than 50,000 hectares would be deforested in the first ten years after licences had been granted to pulpwood plantation operators.

3.2.1.2 Moratorium

The baseline scenario selected by the Katingan project is on shaky ground for another reason too. On 20 May 2011, Susilo Bambang Yudhoyono, president of Indonesia at the time, signed a moratorium which prohibited the authorization of plantations in specified peatlands and forest regions.³³

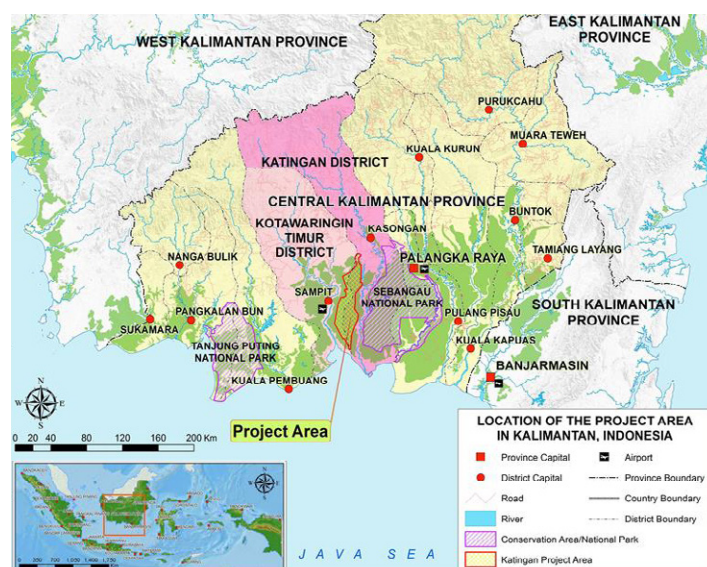
The map on the last page of the moratorium clearly shows that the present project area was protected as of May 2011 (see figures 4 and 5). The moratorium has since been extended several times and is now permanently in force.³⁴

Figure 4: Moratorium map of 20 May 2011 (green = protected forest areas, red = protected peatlands)



Source: <http://redd-monitor.org>

Figure 5: Map of the project area



Source: PPD 2016, p. 17

The baseline scenario stipulates that applications for two of the three licenses for pulpwood plantations would have been submitted in 2010. The companies involved would have received letters with confirmation of provisional reservation in 2011, and of full license in 2012. The adoption of the now permanent moratorium in 2011 has rendered these assumptions obsolete.

In response to the Greenpeace enquiry, Permian Global explains: “The regulations include an exemption for agents that have already received principle license from the Ministry of Forestry. Both agents would have applied in 2010 and received their provisional license in early 2011, prior to the moratorium. This would have enabled full license to be issued after the announcement of the moratorium.”

There is in fact such an exemption for licenses granted in principle. For the baseline story to be in any way legally possible, the companies involved could not have received confirmation of reservation at any time in 2011, as stated in the project document. Confirmation would have had to be issued before 20 May, that is, before the moratorium came into force – an extremely narrow window of time.

3.2.1.3 Communicating the threat

Although the threat from pulpwood plantations was already imminent from 2008 on according to the baseline scenario, and was the „only credible land use scenario“, the project did not ever mention this in its external communication in the first years. The obvious conclusion is that the auditors and those responsible for the project did not agree on the baseline scenario until the certification process was underway in 2015 and 2016.

In other words, the project allowed itself to be credited with CO₂ savings for its protection of the forest from November 2010 on, but what exactly the forest was being protected from was not known until the Project Description Document (PDD) was finalised in 2016.

Today, the Katingan project website recounts the story of the baseline scenario in a very factual manner, as if it consisted of more than just assumptions: “The area was under threat of conversion to an industrial acacia plantation. This would have resulted in the release of carbon through forest clearance, draining and burning of the underlying peat. Through performance-based carbon financing, we offer a viable alternative to conversion.”³⁵

Baseline scenario was unknown until 2016

However, project developers did not refer to the threat posed by acacia plantations until relatively recently: The old Katingan project website, which can still be accessed through an internet archive, does not explicitly mention the threat posed by acacia plantations.³⁶

In its response to an enquiry made by Greenpeace regarding the concurrent application for a plantation concession, Permian Global confirms: “The project was aware of the application.” However, the CEO of PT RMU, Dharsono Hartono, never said a word about the application or the general threat posed by the acacia plantations, neither in a TED talk in 2012,³⁷ nor in a presentation he held at a symposium in June 2013. Instead, he emphasised the threats posed by the conversion of forest cover in the project area to oil palm plantations, mining and illegal logging—threats that were later all dismissed as unrealistic in the Project Description Document.³⁸ And neither did Hartono mention the threat posed by acacia plantations in a blog post for the Clinton Foundation in July 2014, instead citing oil palm plantations.³⁹ That same year, Rezal Kusumaatmadja, the COO of PT Rimba Makmur Utama, said in a news article linked to

the Katingan site: “Peatland forests in Borneo have been the target for conversion for oil palm plantations, resulting in greenhouse gas emissions in addition to loss of biodiversity.”⁴⁰ Again, not a word about the threat posed by acacia plantations.

However, according to the baseline scenario, more than 16,000 hectares of forest cover in the project area had already been cleared by acacia plantations operators by 2014.⁴¹

In a reply to an enquiry made by Greenpeace Permian Global explained: “As for archived websites and old presentations, the project’s technical understanding of the specific threats of conversion grew as more data was gathered, which is presented in the PDD.”

3.2.2 Permanence

The permanence of the CO₂ storage provided by the Katingan project is uncertain due to several threats:

- ▶ Together with two Indonesian colleagues, a Dutch journalist examined in 2019 the effects of that year’s fire season on the project area. She wrote that satellite images showed “two dark brown fire scars in the protected area,” one on its western edge and one in the south. She added: “We measured the burn marks which covered approximately 1,900 hectares, equivalent to about 3,800 football fields.”⁴² By 2015, more than 9,000 hectares in the project area had already been affected by fires.
- ▶ A master’s thesis presented last year also found evidence, with the help satellite images, of loss of forest cover in the project area, showing that the proportion of forest cover in one of the villages within the project area had decreased by about 20 percent from 2014 to 2018.⁴³
- ▶ Moreover, there is an oil palm plantation on the eastern boundary of the project area. Part of it is on the same peatlands as the project area. In 2015, CEO Hartono commented: “The impact of their land clearing will be very detrimental to us, because it’s one ecosystem. If they open land in a massive way, it will interfere with what we’re doing. In the short term, the impact will not be severe. But in the long term, the peat dome in the region will be affected, and there is potential for wildfire.”⁴⁴

And even if a large part of the forest in the project area were indeed preserved throughout the 60 years covered by the license, what would happen if it were cleared afterwards, and the CO₂ it had stored released? The CO₂ from fossil fuels burned to manufacture “carbon-neutral” VW models, which had been neutralised thanks to the forest, would still be in the atmosphere – in addition to with the emissions generated by the destruction of the forest itself.

3.2.3 Leakage

Although leakage, or a shift in deforestation, is very difficult to monitor, there are two signs of leakage in the Katingan project:

The master’s thesis presented by Vivi Selviana, who now works as a research consultant for CIFOR, shows an increase in forest cover loss during the project period in the villages she studied within the project area: “No change was detected in the forested area of REDD+ villages between 2011 and 2014, but the forest area decreased in three out of four REDD+ villages between 2014 and 2018.” (see figure 6)⁴⁵

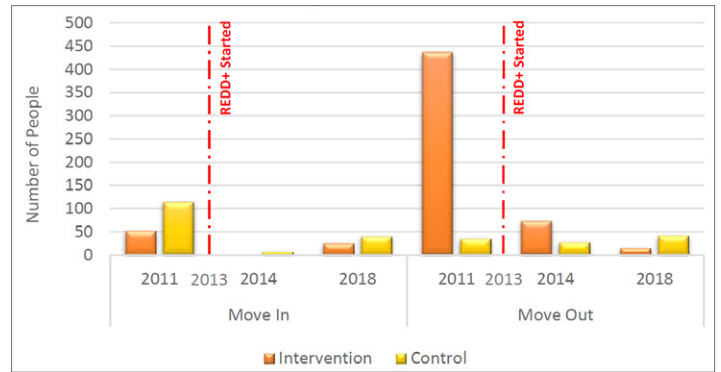
Figure 6: Changes in forest cover on village lands



Source: Selviana 2019: Learning Lessons from a REDD+ Initiative: Assessing the Implementation Process, Forest and Community Outcomes, and Impacts on Local Households in Central Kalimantan, Indonesia.

Furthermore, Selviana identified substantial migration away from the project areas in its early stages (see figure 7). She attributes this – at least in part – to restrictions on forest use and the resulting loss of income opportunities.⁴⁶

Figure 7: Migration trends in and out of village lands



Source: Selviana 2019: Learning Lessons from a REDD+ Initiative: Assessing the Implementation Process, Forest and Community Outcomes, and Impacts on Local Households in Central Kalimantan, Indonesia.

3.2.4 Conflicts with local communities

The lack of clarity in Indonesian law regarding the land rights of local communities poses a high risk of conflict. Local communities often have to shoulder the negative consequences of REDD+ projects. Local populations are not generally the real drivers of large-scale deforestation, but they are nonetheless being pushed out of the project areas.

As early as 2011, the regional group of the Indigenous Peoples’ Alliance of the Archipelago in Central Kalimantan (AMAN Central Kalimantan) had already expressed concern over planned REDD+ activities in the province and complained of a lack of transparency and of not being included in the planning process.⁴⁷

There are 34 village communities adjacent to the project area. In 2010, an estimated 43,000 people lived there in 11,475 households.

A report by Dutch investigative journalist Daphne Dupont-Nivet indicated that in 2019 there were also specific conflicts over land in Katingan Mentaya: “In 2014, the highest-ranking Dayak leaders reached an agreement with the governor of Central Kalimantan, which stipulated that each Dayak family in the province would be granted the right to cultivate five hectares of land. They still had to find out where this land would come from. And a local politician secured votes in the Dayak community during the 2017 elections in the province by promising them that he would reclaim land, according to Bahrudin [a Dayak leader]. He showed letters and documents that had been prepared by Dayak community leaders. The villagers used these to claim land within the project area where the CO₂ reserve had been in place since 2013”.⁴⁸ (translated with Google Translate).

Indonesian journalists “had come across dozens of agricultural parcels of land in the project area”.

A Dayak leader from the village of Babaung is quoted as saying: “Every Monday, we go to the reservation to farm our lands.”⁴⁹

Vivi Selviana’s master’s thesis entitled Learning Lessons from a REDD+ Initiative: Assessing the Implementation Process, Forest and Community Outcomes, and Impacts on Local Households in Central Kalimantan, Indonesia closely examines the effects of the Katingan project on the local population.

In the course of her work, the author interviewed more than 250 households. Perceptions of the Katingan project in villages within the greater project area have deteriorated drastically over time. Two points in particular, “community development” and “well-being improvement” were rated as “very negative” by three out of four of the villages surveyed (see table 5).

Table 5: Local perceptions of the Katingan Mentaya project

Village Name	REDD+ Explanation		REDD+ Permission		Involvement in REDD+ Implementation	
	2014	2018	2014	2018	2014	2018
REDD+ 1	N/A	--	N/A	--	N/A	--
REDD+ 2	+	-	+	+	+	-
REDD+ 3	+	x	+	--	+	--
REDD+ 1	+	x	x	+	+	+

Village Name	REDD+ Community Development		Well-being Improvement		Forest Protection Improvement	
	2014	2018	2014	2018	2014	2018
REDD+ 1	N/A	--	N/A	--	N/A	--
REDD+ 2	N/A	--	x	--	N/A	+
REDD+ 3	N/A	--	+	--	N/A	--
REDD+ 4	+	x	x	x	x	+

Notes: -- = Very Negative; - = Negative; x = No Effect; + = Positive; ++ = Very Positive; N/A = Not Applicable

Source: Selviana 2019: Learning Lessons from a REDD+ Initiative: Assessing the Implementation Process, Forest and Community Outcomes, and Impacts on Local Households in Central Kalimantan, Indonesia.

This may be due partly to the fact that household income in villages affected by the Katingan project did not develop as well compared to villages outside the project area. Selviana wrote: “Findings show no differences on total income for households in REDD+ and control villages before the implementation of the REDD+ project. However short after the implementation of the REDD+ project in October 2013, the total income of households in control villages was higher compare to REDD+ villages. Furthermore, approximately after 5 years implementation for the REDD+ project, the household total income in the control villages was also higher than the total income of household in the REDD+ villages.”⁵⁰

In addition, the Katingan project has apparently prevented local communities from receiving government development funding, Selviana wrote: “The experience of Katingan Mentaya Project suggests that REDD+ project ‘crowds out’ other funding. The government only implemented programs outside the REDD+ project zone after the project began in late 2013. On the other hand, key informants in each village stated that the villages did not gain any additional development support because of the REDD+ project. Thus, REDD+ could cause villages to miss out on other development support.”⁵¹

4. Greenpeace demands



New VW cars in Emden

To limit global warming to 1.5°C as laid out in the Paris agreement, we must reduce global greenhouse gas emissions as quickly as possible. We must immediately and resolutely begin today to pursue the energy transition, the transformation of the transport sector and the industrial decarbonisation which are needed if we want to achieve the 1.5°C goal. Deceptive solutions, such as CO₂ compensation schemes, delay and hinder this process. Greenpeace therefore demands:

- ▶ **VW must minimise its own CO₂ emissions instead of compensating them:** Compensation payments to REDD+ projects do not make any car climate neutral. The destruction of our climate cannot be “compensated”. Offsets mislead customers into believing they can continue business as usual without needing to modify their behaviour. Instead of trying to buy itself out with carbon offsets, VW must restructure its business model to make it more climate compatible. The production and use of large, heavy cars such as SUVs require more resources and energy than that of comparable non-SUV vehicles. VW should discontinue their production and replace them with climate-friendly products and services.
- ▶ **VW needs an ambitious exit strategy to phase out combustion engines:** VW’s CO₂ footprint, which exceeded Australia’s yearly emissions in 2018,⁵² is driven primarily by its products and their use. VW must therefore do everything it can to make its products climate compatible. VW must stop selling any cars with combustion engines by 2028 at

the latest.⁵³ The planned development of a new generation of diesel and petrol cars, meant to be sold until 2040, must be stopped and the money intended for their development must instead be invested in restructuring the company to make it climate friendly.

- ▶ **VW should move faster to lower emissions in its production and supply chains:** CO₂-neutral and low-CO₂ technologies are now already available in some sectors, albeit at a higher cost. A major customer such as VW would be instrumental in quickly pushing forward developments in other areas. Strategies to lower CO₂ emissions such as these should be systematically pursued if VW is really serious about mitigating climate change.
- ▶ **VW should introduce an internal CO₂ tax:** VW will not be able to manufacture zero-emission cars even if it systematically implements measures to reduce CO₂ in its production processes and supply chains. VW should introduce an internal CO₂ tax based on the actual costs generated by CO₂ emissions that are in fact unavoidable. Germany’s Federal Environment Agency estimates that the damage caused by one tonne of CO₂ emissions costs 180 euros.⁵⁴ The internal tax money collected should be allocated to climate projects, to the expansion of wind and solar energy and also to forest conservation – without receiving carbon credits in exchange that pretend to compensate the company’s CO₂ emissions.

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