Patch

Rebalance the planet

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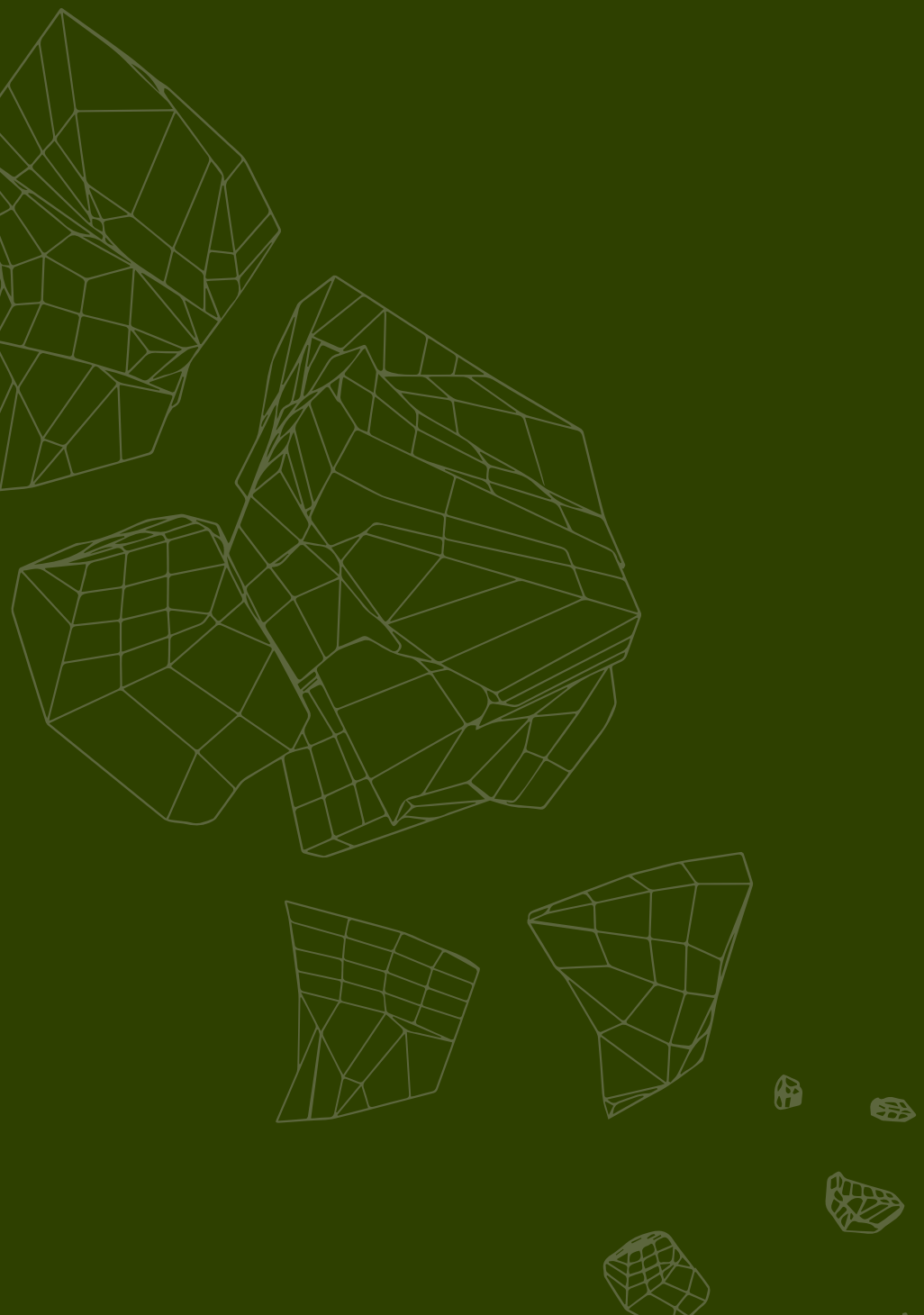
HOW TO UNLOCK

Billions

IN CARBON CREDIT DEMAND

5 challenges the largest carbon credit buyers have solved

Introduction



What's it really going to take to scale carbon markets to the gigatonnes of annual capacity we'll need to meet our climate goals?

In voluntary markets, carbon credit purchases representing only durable removal scaled from roughly 615,000 tonnes in 2022 to 4,500,000 tonnes in 2023 — a 632% increase. Moreover, only 125,000 tonnes of those credits were delivered last year.[1] Given that we'll need as much as a billion tonnes per year of permanent carbon dioxide removal (CDR) by 2030, we're less than 1% of where we need to be with only five years to get there.[2]

And when it comes to avoiding emissions from land use, we could reduce emissions by up to 5.8 billion tonnes of CO_2 annually just by preventing deforestation and land degradation. Add to that another potential 10.1 billion tonnes of annual short-duration carbon removal through afforestation and reforestation efforts.[3]

The global financing gap for nature-based solutions stands at $4.1 trillion through 2050.[4] Current investment levels reach just $133 billion annually, with the majority coming from public sources. That's simply not as scalable as climate finance driven by revenue — like carbon credits.

But the supply of carbon credits for avoided and removed emissions we need isn't there today, and it won't be there in 2030 if we wait to scale demand. Companies that procrastinate until 2029 or later will find there won't be credits to buy.

1 Höglund, Robert, Kevin Niparko, Quentin Servais-Laval, Tank Chen, Alex Rink, Alina Baron, Michael Guzzardi, Michelle Bajurny, Roden Sherpa, and Nadine Walsh. 2024. "2023 Year in Review." CDR.fyi.

2 Boehm, Sophie, Clea Schumer, Kelly Levin, Joel Jaeger, Judit Hecke, Danial Riaz, Raychel Santo, et al. 2024. "By the Numbers: The Climate Action We Need This Decade." World Resources Institute.

3 IPCC, 2019: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

4 United Nations Environment Programme (2021). State of Finance for Nature 2021. Nairobi.

Possible demand for CDR in 2050, provided the right policies are implemented[6]

2.5 billion tonnes

The voluntary carbon market has a path to generating demand for more than 800 million tonnes of carbon dioxide removal by 2040, but the obstacles to that trajectory are many.[5] In a recent report from BCG, the authors identified a range of policy drivers, both direct and indirect, to increase demand for carbon removal credits. They range from carbon taxes to purchase requirements to tax credits, grants, and loans for buyers that could unlock up to 2.5 billion tonnes per year of demand for CDR in 2050.[6]

Ultimately, the authors argue that "there are barriers to scaling CDR demand that are unlikely to be overcome without governmental policy demand drivers."

5 Mistry, Karan, Bahar Carroll, Thomas Baker, and Paulina P. de Leon. 2023. "The Time for Carbon Removal Has Come." Boston Consulting Group.

6 Mistry, Karan, Amy Sims, Thomas Baker, Paulina Ponce de León Baridó, Alex Dewar, and Habib Azarabadi. 2024. "Boosting Demand for Carbon Dioxide Removal | BCG." Boston Consulting Group.

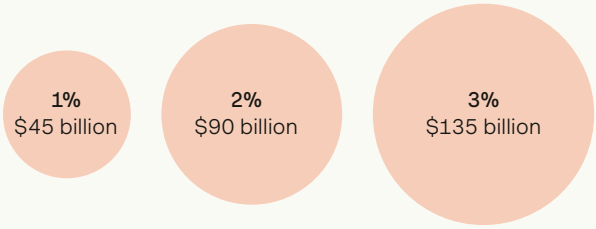
So where does that leave us in 2024 and 2025?

Ability to pay

Experts recommend companies commit ~1% of net annual profits toward voluntary climate action, though many could afford more.[7] We've proposed 1–3% as a benchmark. What's clear is that the world's most profitable companies are leaving capital on the sidelines in the fight against climate change.

Total annual profits for the Forbes 2000 and multipliers:

$4.5 trillion



These are critical years — both for the climate impact we need to have today and the impact we need to make possible for tomorrow. That includes CDR, but also a wide variety of other methodologies that rely on funding from carbon credits to scale — methods for protecting and restoring our natural carbon sinks, abating and destroying greenhouse gases with high global warming potential, and scaling up the technology to remove CO_2 from the atmosphere permanently.

Policy will play a critical role in all of these efforts, but the timelines to pass and then implement legislation can be long and uneven. Meanwhile, we know that a significant amount of private capital is waiting on the sidelines right now. Is it possible to mobilize that capital toward climate solutions sooner?

A handful of the largest companies in the world have driven the largest investments in climate projects via carbon credits. Microsoft alone has purchased more than 8 million tonnes of high-integrity carbon credits. They're by far the biggest purchaser in the world. What's stopping more companies from following their lead?

We estimate that if the world's most valuable companies unlocked capital to contribute to climate action, it could create $45–135 billion in demand for voluntary carbon credits.

7 Höglund, Robert, Nils Fergin, and Mikaela Jaconelli. 2024. "Set an internal carbon fee to drive climate action and carbon removal." Milkywire.

In the last six months, Patch has had conversations with more than 400 corporate sustainability leaders representing billions of dollars in market capitalization. We've systematically aggregated and analyzed these conversations to better understand what's blocking companies from effective action in carbon markets. Combined with data collected and generated through our platform, we uncovered five distinct phases of the carbon credit buying process that are generating significant friction for buyers.

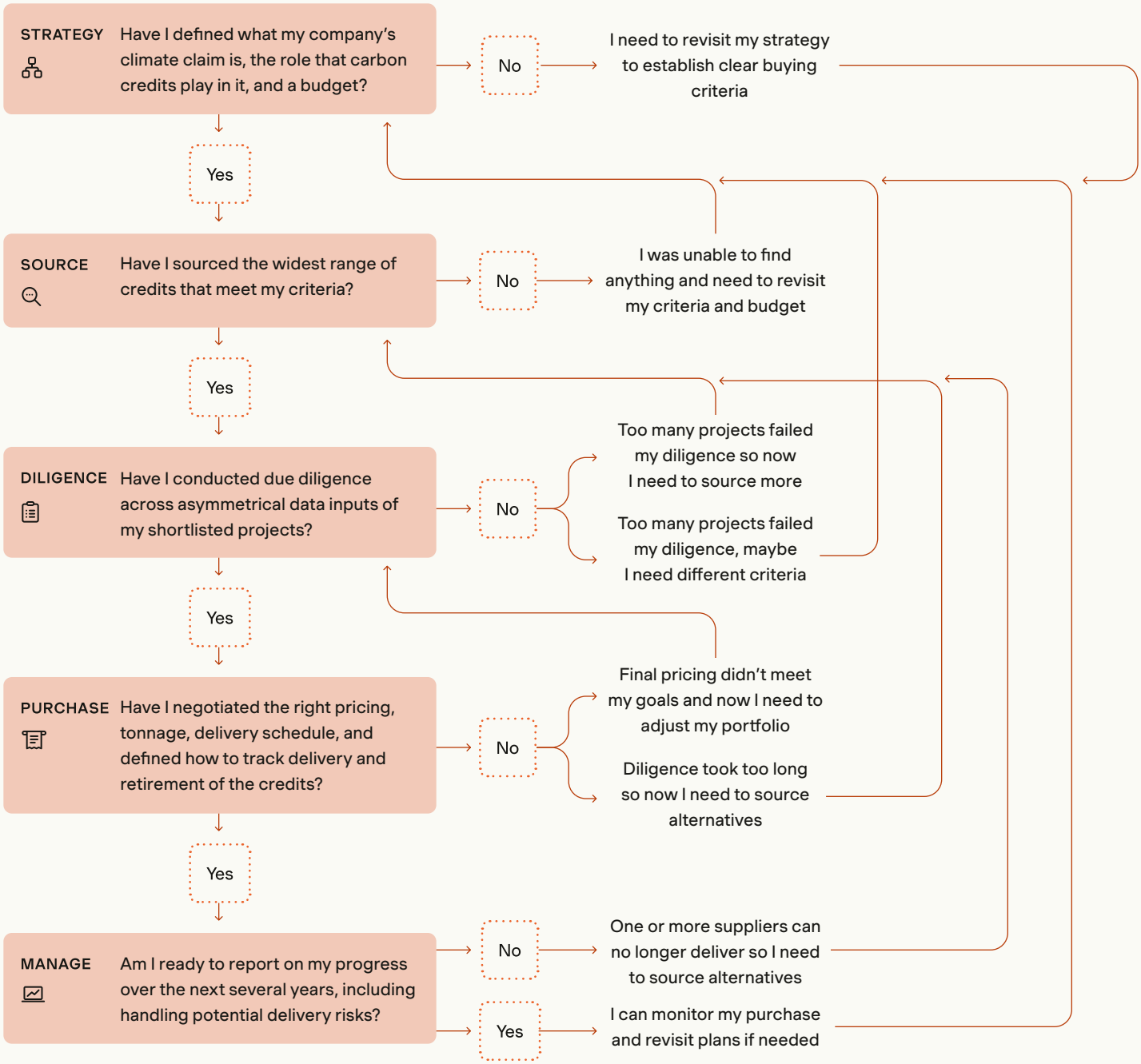
The top fraction of sophisticated buyers in the market have entire teams of people dedicated to solving each of these phases. We surveyed 100 of the largest spenders on carbon credits, and only 15% had teams dedicated to carbon.

The overwhelming majority of buyers (including large enterprises with sustainability teams) don't have sufficient resources to accomplish this process efficiently or effectively on their own. Effective action in carbon markets starts with building a business case. It means navigating climate claims, creating a budget or internal carbon price, understanding procurement and the pros and cons of offtake and spot purchasing, then integrating it all together. This requires a broad and diverse knowledge base of different project types and methodologies, as well as experience with regulatory compliance and market-based climate finance. It requires access to project data, pricing and inventory, relationships with key suppliers, and often leverage with those suppliers to get access to inventory.

The five phases of the buyer's journey

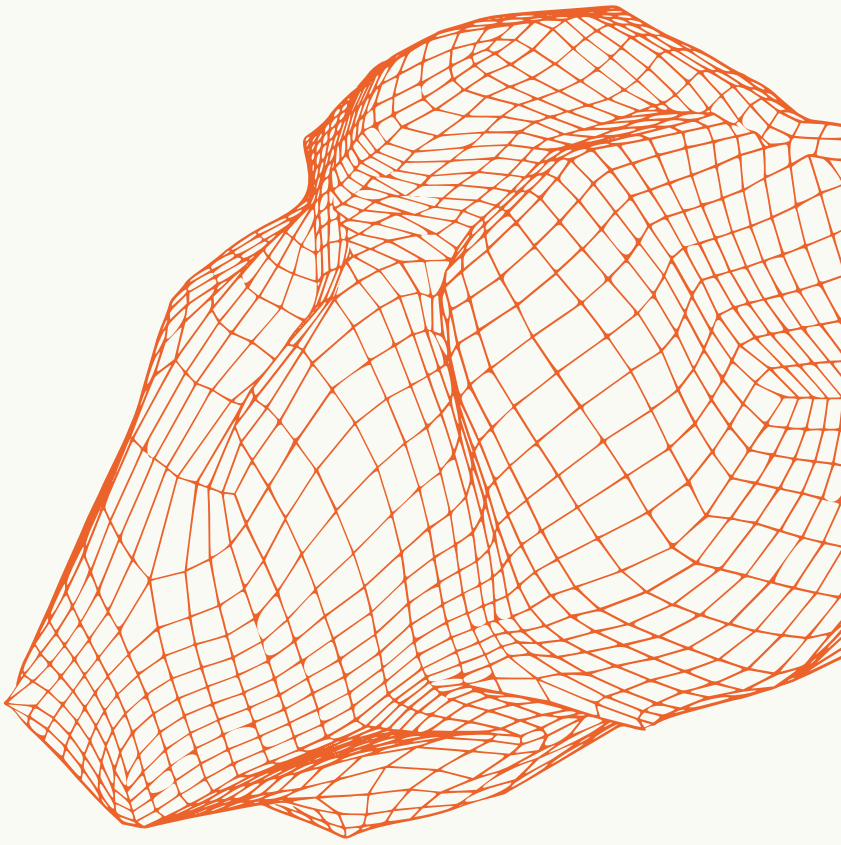
This can result in buyers taking a non-linear path — often redoing phases multiple times:

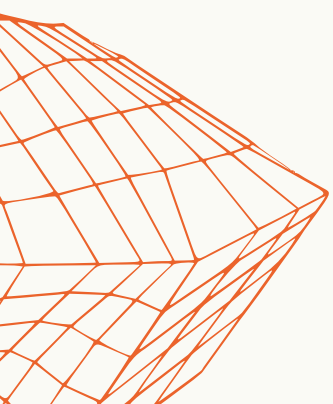
Common obstacles per phase of the buyer's journey



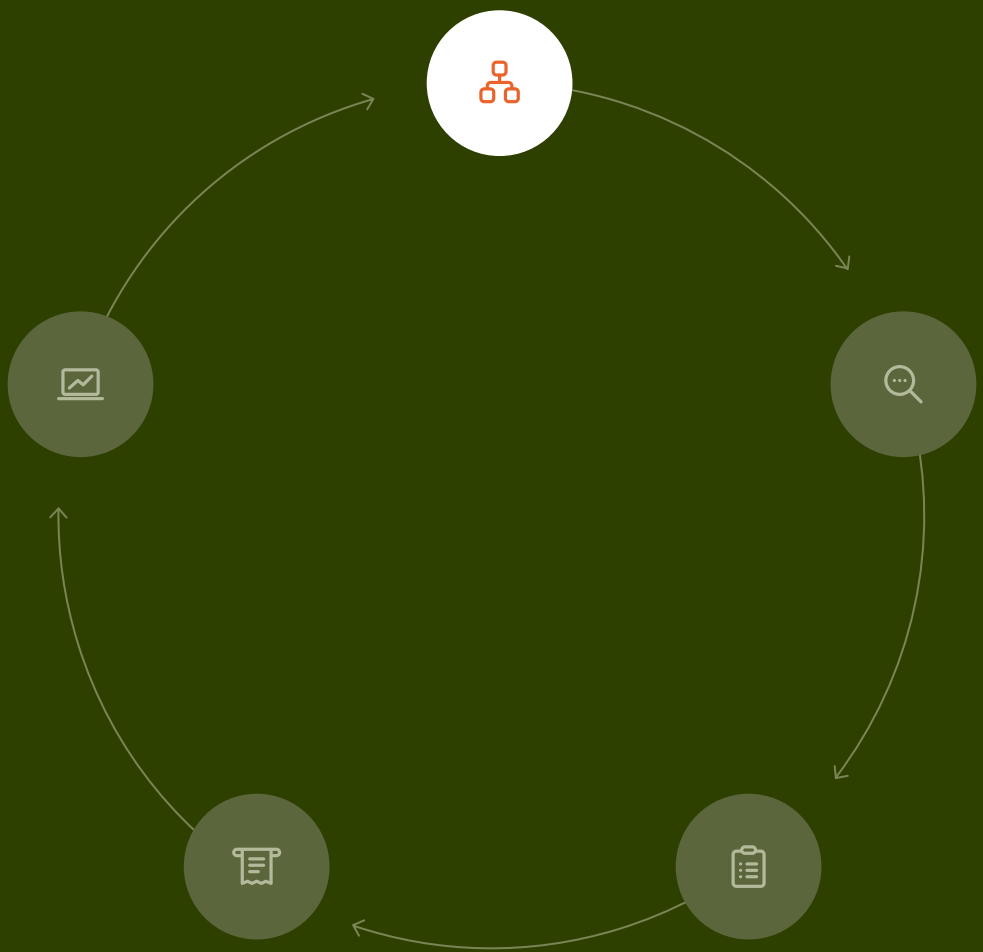
If enough buyers can solve these friction points, we're convinced they can rapidly accelerate the pace at which private capital can flow to climate solutions with integrity.

In this report, we'll look at each phase through the lens of real, anonymized quotes from our conversations with carbon credit buyers, as well as quantify some of the pain points using data from the Patch platform.

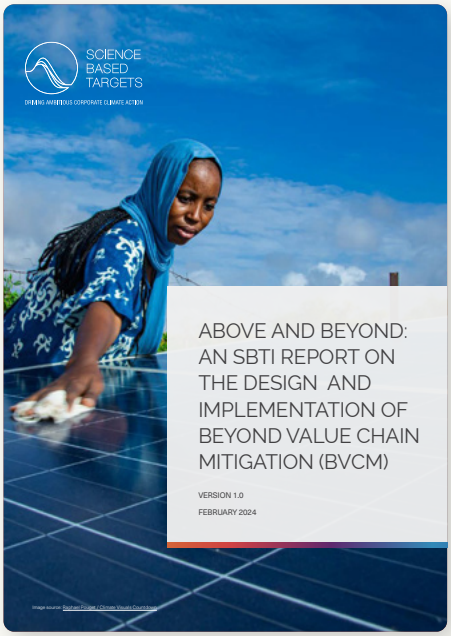




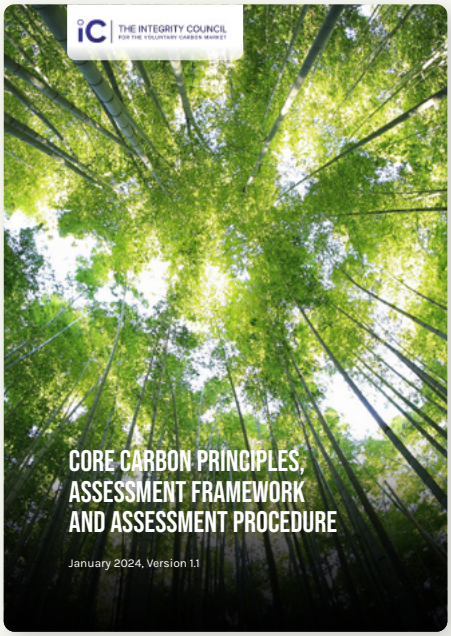
01 Strategy



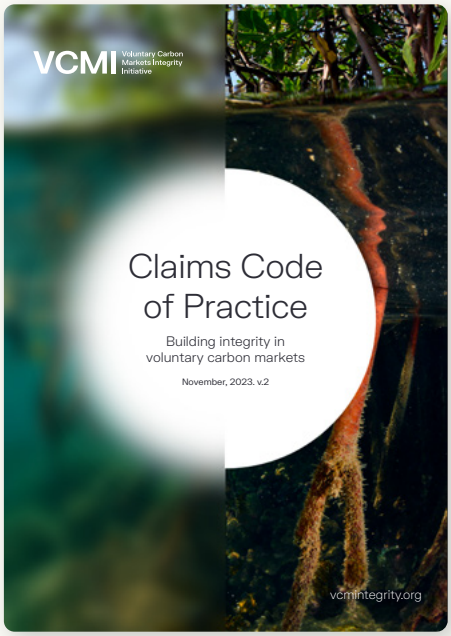
The last several years have seen voluntary carbon markets dramatically evolve. The standards landscape has seen the release of SBTi's Beyond Value Chain Mitigation (BVCM) framework, ICVCM's Core Carbon Principles, and VCMI's Claims Code of Practice.



The Science-Based Targets Initiative (SBTi) is primarily concerned with creating accountability around corporate decarbonization goals — in other words, reducing carbon emissions within a company's value chain. But for contributing to climate impact outside of that value chain, BVCM offers a framework for how to fund carbon credit projects and other activities with integrity.



The Integrity Council for the Voluntary Carbon Market (ICVCM) has developed a set of 10 science-based principles to determine which carbon credits create real and verifiable climate impact — and which don't. These include governance and verification, additionality and permanence, transparency, leakage, double counting, safeguards, and other sustainable development benefits.



The Voluntary Carbon Markets Integrity Initiative (VCMI) is a global non-profit organization that provides comprehensive guidance on integrating carbon credits into broader climate strategies, while offering clarity on how to make transparent and consistent claims about their usage.

The Claims Code of Practice offers three levels of Carbon Integrity claims (Silver, Gold, and Platinum) aligned to scientific best practices for climate action.

Disclosure laws around the use of carbon credits in corporate climate claims are in effect in various jurisdictions in the U.S. and Europe. Increased disclosure requirements means increased public scrutiny over the types and quality of credits purchased. And the market is responding by increasingly separating into two tiers of carbon credit quality — a trend referred to as bifurcation.[8] First, there's a higher priced tier consisting of nature-based projects with strong integrity credentials, engineered solutions for carbon removal, and several other types of highly rated projects including destruction of high-global warming potential greenhouse gases. Then there's the rest, including a large number of older forestry credits at lower price points.

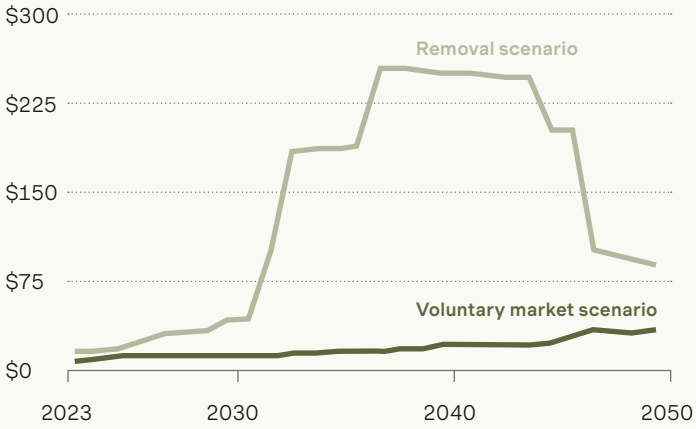
How companies approach this complex, dynamic market requires a sophisticated, thought-out strategy.

For a company like Microsoft, developing this strategy makes use of large teams of full-time employees dedicated to understanding the standards landscape, policy and market trends, and the science and research surrounding hundreds of unique projects across dozens of methodologies.

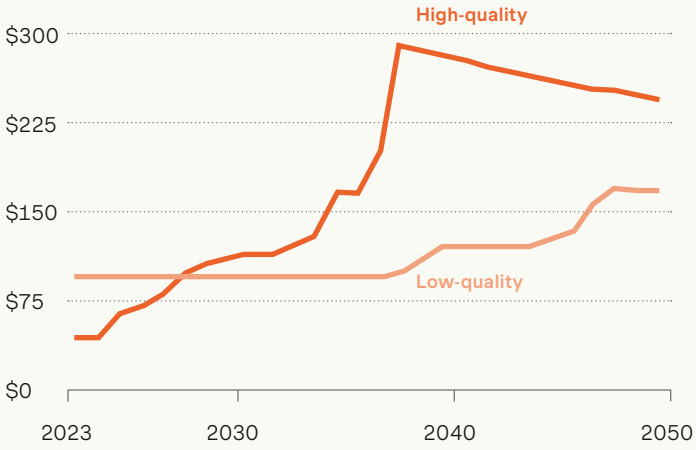
Most sustainability leaders — even at large multinational enterprises — simply don't have those kinds of internal resources. In our conversations with these leaders, we found that devising the right carbon credit strategy for their business's company-level sustainability goals was a major obstacle to deploying funds to carbon credit projects.

In some cases, these companies were making the decision to wait to engage despite having budget allocated. In others, they would work backward from existing budgetary limitations and public climate claims, ending up with a very narrow range of possibilities for action.

Carbon credit prices: Removal and voluntary market scenarios
(USD/tonne)



Carbon credit prices: Bifurcation scenario
(USD/tonne)



Source: Bloomberg NEF

8 "Long-term carbon offsets outlook 2023 | Insights." 2023. Bloomberg.

"I wanted [our company] to be seen as an innovator. We had an existing commitment to achieve carbon neutrality by 2025, but I knew that would not necessarily lead to the greatest impact. As we shifted to align our approach with science-based targets, the question for me was: what's a better way for us to catalyze new climate solutions?"

— Sustainability leader at a global enterprise software company

Buyers with dedicated carbon teams

15%

We surveyed 100 of the largest carbon credit buyers. Only 15% have a full-time employee or team dedicated to carbon markets

"[We] need to have a strategy on how much we're going to need to use carbon [credits]. Once we understand this allocation, [we will need to understand] what does the portfolio look like?"

— Climate leader at a global mining company

How often is strategy a concern for buyers?

82.1%

Based on Patch's conversations with hundreds of buyers, over 80% mention strategy as a concern

"[I need help] trying to visualize the glide path for 2030, then 2040. [...] And it would be helpful to discuss the ideal balance of forward versus spot purchases."

— Climate leader at a global food & beverage company

Regulations relevant to voluntary carbon markets[9]

Number of regulations:

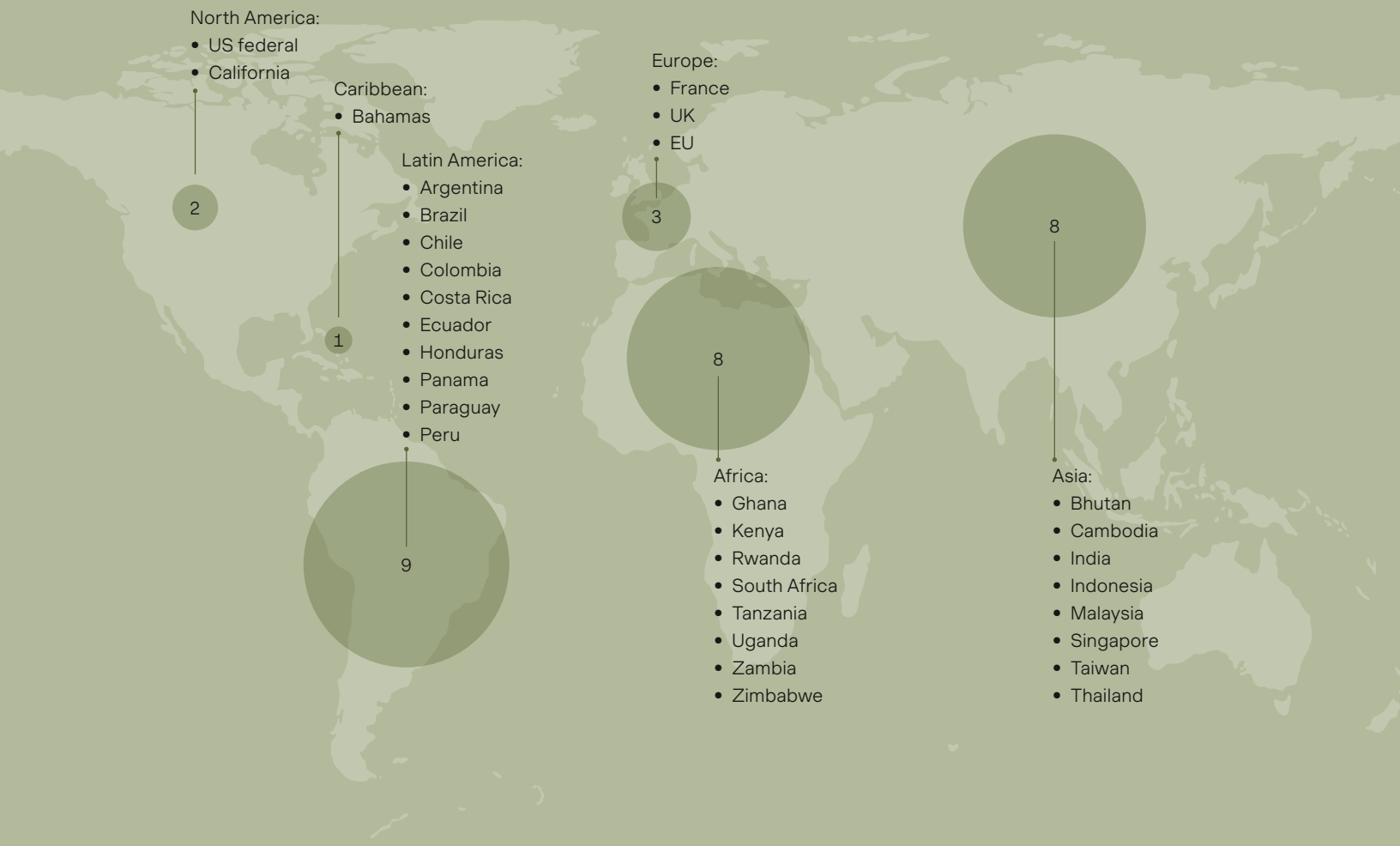
45 total

In force: 38 regulations
Proposed (formally): 3 regulations
Other status (or N/A): 4 documents

Geographic distribution:

32 countries

1 subnational jurisdiction (California)
1 supranational jurisdiction (European Union)
1 international scheme (CORSIA)



9 Gold Standard, German Federal Ministry for Economic Affairs and Climate Action, and South Pole. 2024. "Carbon Market Regulations Tracker." Gold Standard.

Key roles and overlaps in the shifting VCM ecosystem

- Standards for how corporations can pursue decarbonization
- Standards for how carbon crediting programs should operate
- Standards and programs certifying carbon credits at the project level
- Independent reviewers (ratings agencies, certifiers, and verifiers)

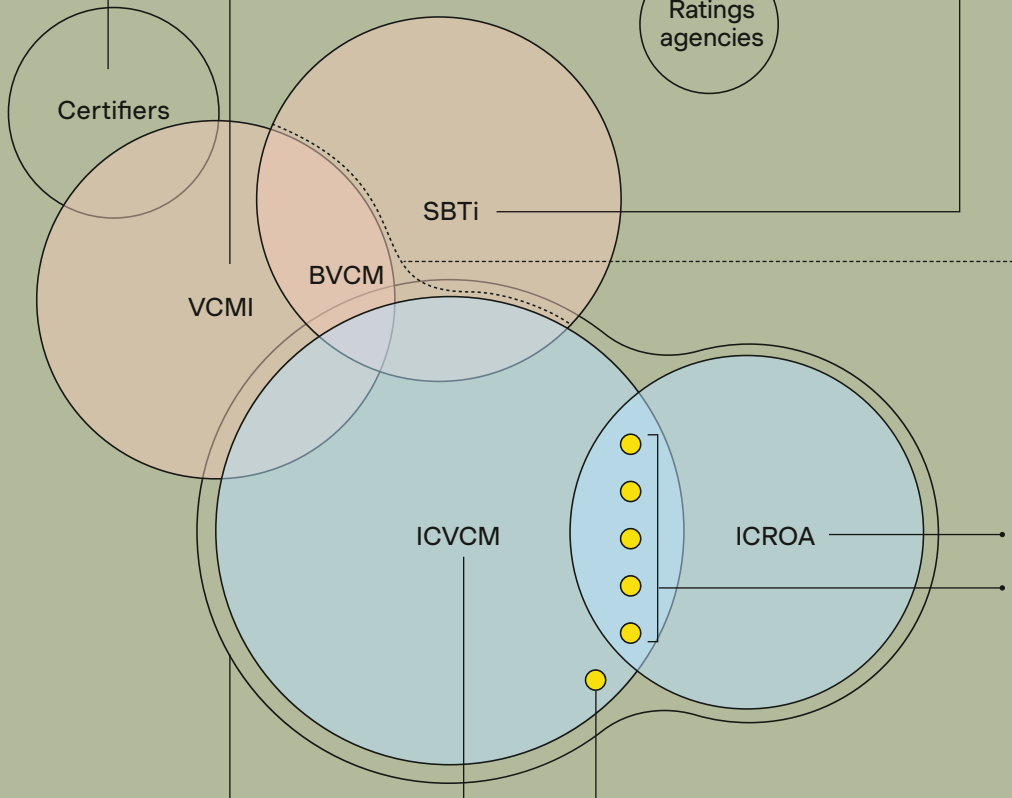
Certifiers validate corporate decarbonization claims, which can include plans set through VCMI or SBTi (though SBTi verifies its own targets).

Ratings agencies provide additional diligence beyond certification, further highlighting project strengths and weaknesses based on project data.

VCMI provides "levels" of corporate climate claims that can be made based on a combination of internal decarbonization and investment in carbon credits.

SBTi provides pathways for businesses to reduce emissions in line with the Paris Agreement.

SBTi's Beyond Value Chain Mitigation (BVCM) defines corporate recommendations for carbon credit purchases and other climate investments, overlapping with VCMI and ICVCM. Currently in development.



ICROA endorses carbon credit programs.

Gold Standard, Puro.earth, Verra, etc. are programs that certify projects against traditional methodologies. These projects and credits are verified by an independent third party and listed on the program's registry.

ISO provides a verification path for projects that cannot certify with a traditional methodology.

Verifiers are independent third parties who confirm that a project had its intended impact.

ICVCM establishes criteria for high-quality credits and certifying credits accordingly. Its Core Carbon Principles-approved credits are a key component of VCMI's guidance.

Solving the strategy part of the process is paramount. Sustainability leaders need to have confidence they're making the right decisions before they'll act at scale. This is one of the most common phases where demand is being stifled by fear of doing the wrong thing or from lack of experience and expert guidance.

How Patch is working to solve the strategy phase:

01 Translating the standards landscape, policy, and market trends into actionable guidance across spot purchases and multi-year offtake agreements

02 Defining detailed requirements that projects must meet to achieve a carbon credit strategy within budget

03 Ensuring that projects selected match company-level sustainability strategy as part of a cohesive portfolio

The structure of strategy
Best-practice carbon market strategy incorporates these factors into a holistic plan:

Business case

Build an internal case for why leveraging market-based mechanisms is going to help your company execute its sustainability strategy and achieve climate goals.

Claims and budgeting

Determine which claim aligns with your climate goals then build a budget and timeline towards that claim.

Market landscape review

Understand the market and what peers in your space are doing to inform a best-practice strategy.

Scenario planning

Explore how carbon credits can enhance your active or forecasted decarbonization portfolio.

Procurement strategy

Define the best procurement strategy between spot purchase, multi-year agreement, or direct investment based on your criteria and the market landscape.

02 Source

Once buyers have designed a strategy, they need to source carbon credits aligned to that strategy. This is easier said than done.

Carbon markets aren't like stock markets — they're extremely fragmented. There aren't central exchanges that are sure to have all or even most of the existing inventory in the market available for perusal. The most sophisticated buyers still tend to rely on first hand research and their own institutional knowledge of the markets. Newer buyers tend to rely on intermediaries like brokers and aggregators — who are also unlikely to have a comprehensive view of all the credits that are out there and who lack transparent reporting on project quality.

And because carbon markets are so dynamic, understanding the real-time prices and inventory at any given moment is extremely difficult. The lengthier the sourcing process, the more likely that supply of a given project sells out or else the price goes up and no longer meets the buyer's requirements.

Many buyers are looking to run competitive sourcing processes to make sure they're getting the widest possible view of the market and the most competitive prices — typically through request for proposal (RFP) or "tender" processes. However, disseminating and reviewing detailed submissions can be a time-consuming endeavor, and still yield incomplete results. Very few buyers have the resources to systematically query enough vendors to get a complete view of the market.

In our conversations, we found that buyer demand was being slowed or blocked by this friction. They had firm requirements for a comprehensive sourcing process, but many found it overwhelming to comb through hundreds of projects to figure out which ones meet their criteria and refine that list down to their best fits for deeper diligence and negotiation.

"On the one hand, I want to be sure that I'm looking at enough of the market to know that I'm going to find the right projects. But on the other hand, it can be really overwhelming to look at dozens of projects and try to compare them and pick the right ones."

— Sustainability leader at a European private equity firm

“I need to get a snapshot of how the market looks: first of all, is there enough supply? And how are the prices?”

— Climate leader at a global food & beverage company

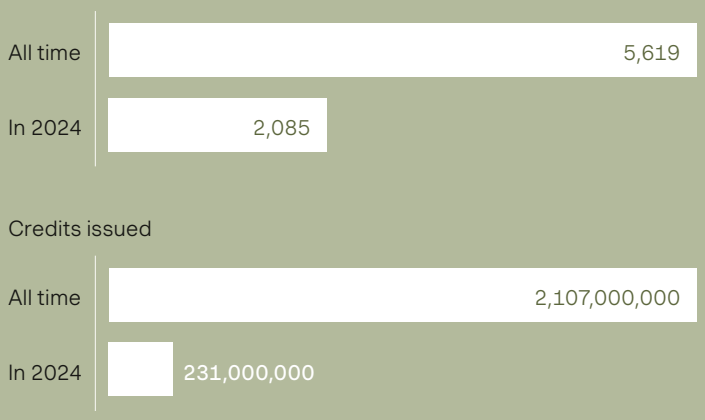
“We wanted to run a quarterly procurement process, but the RFP is so time-consuming that we are only able to do it annually.”

— Sustainability leader at a European retailer

“We no longer run a formal RFP because we found it was a ton of work for suppliers, and when we got to the point where we were ready to buy, the credits we wanted were no longer available, so it was a huge waste of time.”

— Sustainability leader at a global financial services firm

A snapshot of the VCM (as of November 2024)[10]



“I get two to three emails a week from project developers and marketplaces, but I don’t have time to engage with them. I just work with a couple of partners I know and trust, but I’m sure that means I’m missing out on some great projects or better pricing.”

— Sustainability leader at a global shipping company

How often is sourcing a concern for buyers?

48.2%

Sourcing was a concern in 48.2% of analyzed conversations between Patch and buyers.

10 Mikolajczyk, Szymon, and Jesús Mallol Díaz. 2024. “The Voluntary Carbon Market Dashboard.” Climate Focus.

Without a comprehensive view of what's available and at what price, many buyers do not have enough confidence in their ability to purchase carbon credits that match their organizational strategy. That money is slowed or blocked from flowing to the markets and ultimately from accelerating climate solutions.

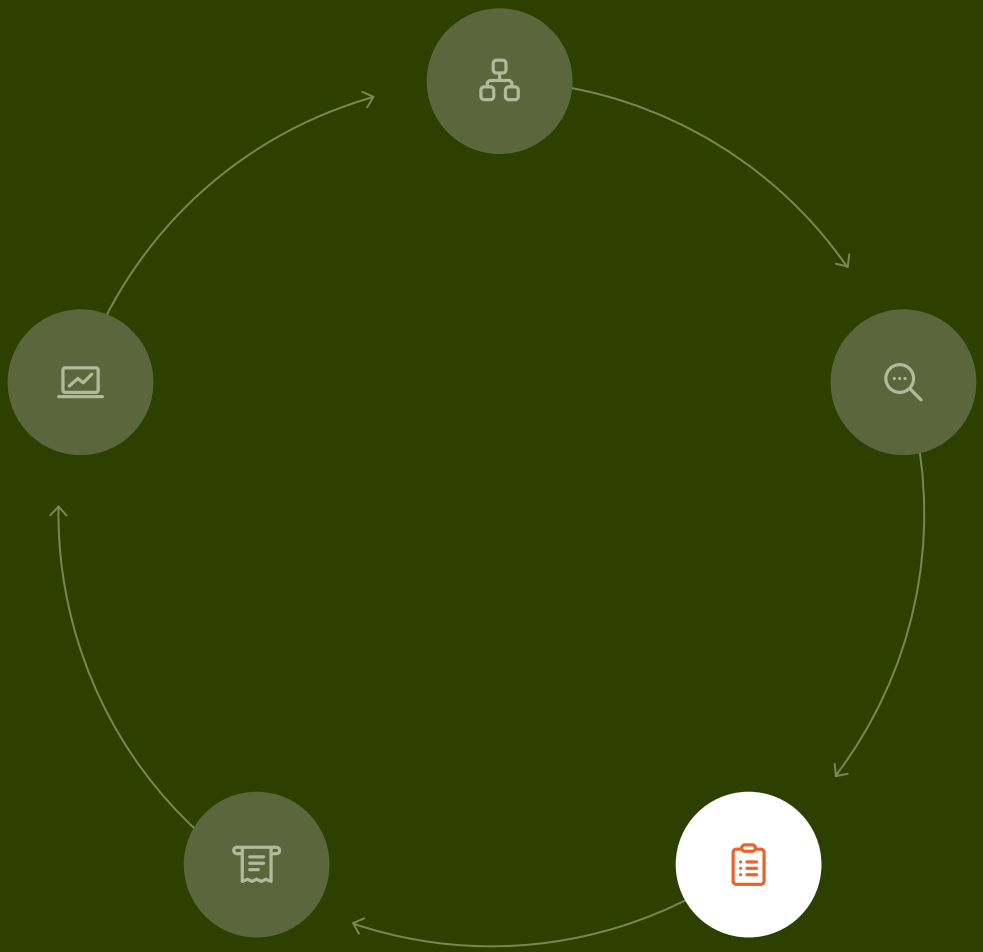
How Patch is working to solve the source phase:

01 Patch has developed a sourcing platform capable of querying a comprehensive database of high-integrity credits available from project developers and intermediaries across the VCM, instantly surfacing current inventory and pricing for the credits aligned to buyers' requirements. This unprecedented level of visibility into the market enables Patch to run an extensive and competitive process for buyers to secure the right credits at the right price.

02 The platform is able to add and include any vendor known to buyers, inviting them to submit proposals based on their requirements for a consistent, systematic evaluation

03 Patch experts can guide buyers through a comparison view to help them refine down vendors and projects to a shortlist

03 Diligence



The most sophisticated carbon credit buyers conduct extremely deep due diligence on the science, efficacy, and risks for every project they consider.

Given the scrutiny carbon credits have seen in the past years, buyers want to protect themselves from reputational risks — as well as financial risks. But they also want to feel confident that the projects they work with will deliver the promised climate impact, have high scientific integrity, and are aligned to their organization's goals.

At the heart of the matter are the questions of integrity (does one carbon credit equal one tonne of CO_2 avoided, reduced, or removed from the atmosphere?) and quality (what are the durability, additionality, and co-benefit attributes of the project?).

Defining these terms is complicated. They're not universally standardized, and without dedicated resources to answering those quality and integrity questions, companies find it difficult to establish a strong point of view. And even if experienced buyers do have clear thresholds, the amount of data and documentation on any given project can be massive. That data is not standardized and is typically very dense. It can be a massive project to conduct diligence on just one, let alone a bevy of projects under consideration.

That's why the largest credit buyers deploy well-staffed teams — including internal and external agents — with deep carbon expertise whose diligence can take weeks or months to complete. For many companies, this process has meant they have missed out on fast-moving inventory, and importantly it diverts resources from other important sustainability initiatives.

Ratings can be a helpful proxy for understanding a project's integrity, but not all projects are rated. Or they may be rated differently by different agencies, which can be confusing. Ratings also may not tell the whole story about how a project fits into a balanced portfolio mapped to a company's sustainability goals. That makes them useful data points, but by no means a silver bullet for solving diligence.

It's hard to overstate how much diligence blocks companies from engaging in carbon markets. It is often the largest drain on human resources in the procurement process. Even companies outsourcing the task find the time periods to be long and the outputs complicated.

"Is there an option to just pick one project? I know diversification is important, but then there's more due diligence to be done, more comfort to be taken, spread across four projects versus one."

— Sustainability leader at a UK-based property management company

Diligence and data

The diligence process for a carbon credit project involves researching a wide variety of criteria to ensure the project meets or exceeds the buyer's standards. This information often lives in multiple — often dense — documents and sources. A sample selection of data sources:

- Project design documents (PDDs)
- Methodology
- Verification report
- Lifecycle Assessments (when relevant)
- Non-permanence report (forestry projects)
- Profit sharing documentation
- Social and community impact reports
- Financial additionality reports
- Environmental impact assessment
- Monitoring report
- Project type-specific calculation spreadsheets (lab results, biomass calculations, etc.)

Data fields per project

239

Patch aggregates and analyzes 239 total data fields as part of our Project Acceptance Criteria.

50-60

A typical project evaluation includes an analysis of 50–60 data fields based on the project's type (blue carbon, biochar, enhanced rock weathering, etc.)

We also evaluate additional project data beyond these fields when we diligence projects based on the buyer's criteria and priorities.

"Last year, we spent a lot of time reading through project documentation we found through the registries, so that we could feel confident in our selection. [...] We really care about reviewing and selecting projects ourselves so we can feel sure that they meet our requirements, but we're also a team of two sitting across our entire sustainability program, so it was a lot to take on."

— Sustainability leader at a European private equity firm

"Projects that we invest in above a certain amount need to be approved by an executive committee that really digs into the project details and risks. We need to be very prepared for these reviews, meaning we feel very confident in our understanding of the projects and how they meet our detailed criteria. As a small team, we rely heavily on our partners to help us with this."

— Sustainability leader at a global consulting firm

How often is diligence a concern for buyers?

Based on Patch's conversations with hundreds of buyers, 48.8% mention diligence as a concern

48.8%

Sample portfolio review process

53 hours

We estimate that diligence, on average, takes 53 employee-hours to complete, based on the fact that the average portfolio review requires 11 project assessments with 53 data points per project, totaling 583 data points.

How AI can speed up diligence

25% faster

Using Patch's AI-powered platform, the same diligence took 40 hours — in other words, was 25% faster.

"Looking at a bunch of projects at once is overwhelming, especially when some of them seem really similar. [...] We really rely on Patch experts to do the pre-work, make sure these projects are solid, and then recommend a few portfolios for me to look at."

— Sustainability leader at a European private equity firm

"I prefer to buy credits with a firm that can also conduct the due diligence and make a recommendation, because it gives me peace of mind with procurement. If I go out to brokers, it's hard to have the confidence I need because I don't have time to do the diligence on my own."

— Sustainability leader at a global private equity firm

The problem of diligence is a problem of both scale and expertise. It requires deep knowledge to thoroughly and consistently assess carbon credit projects, and it takes a lot of time. This deters or delays buyer demand from the market. But since it's so critical to the procurement process, the phase can't be skipped or skirted.

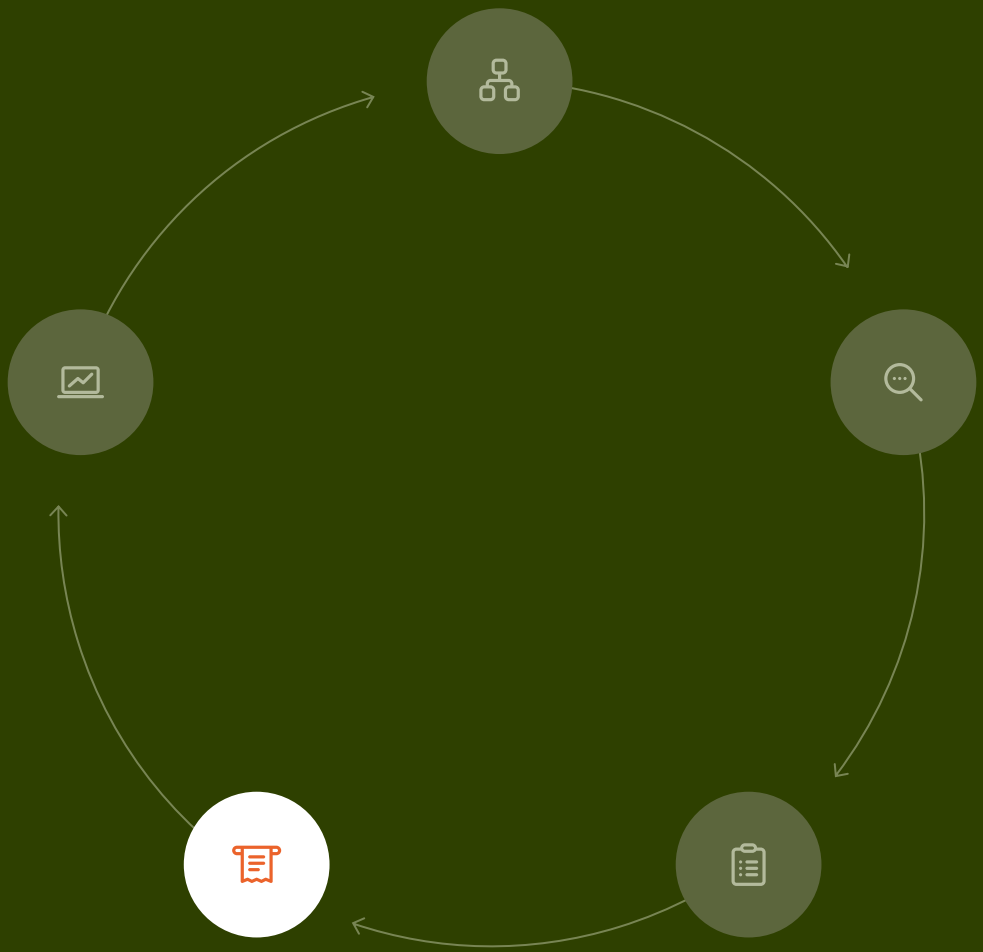
How Patch is working to solve the diligence phase:

01 Patch has created a stringent Project Acceptance Criteria, which evaluates 200+ project attributes against the latest science, methodologies, and standards. Our criteria was designed to be best-in-class through consultation with experts from Climate Focus, MSCI, and the ASU Center for Negative Carbon Emissions.

02 The Patch platform uses AI to translate disparate project documentation, third party ratings, and information from verifiers into standardized data, resulting in faster, more consistent diligence and easier comparisons across projects.

03 Patch's carbon market experts translate project data into digestible diligence evaluations and analysis to streamline the matching process.

04 Purchase



From a climate perspective, the science is clear: it's extremely unlikely any single solution is the answer to this crisis. Likewise, for carbon credit buyers, no single carbon credit project should make up a whole portfolio. Diversification is critical for mitigating the financial and reputational risks of any one project, as well as directing capital toward the variety of solutions it will likely take to address climate change.

But diversification also creates major obstacles to fast and seamless transacting when it comes to carbon credits. It all comes back to the fragmented nature of the markets.

Here's an example of the transaction process through retirement for a single project:

01 Negotiate tonnage, pricing, and delivery schedule

02 Contract the transaction

03 Invoice and payment

04 Delivery

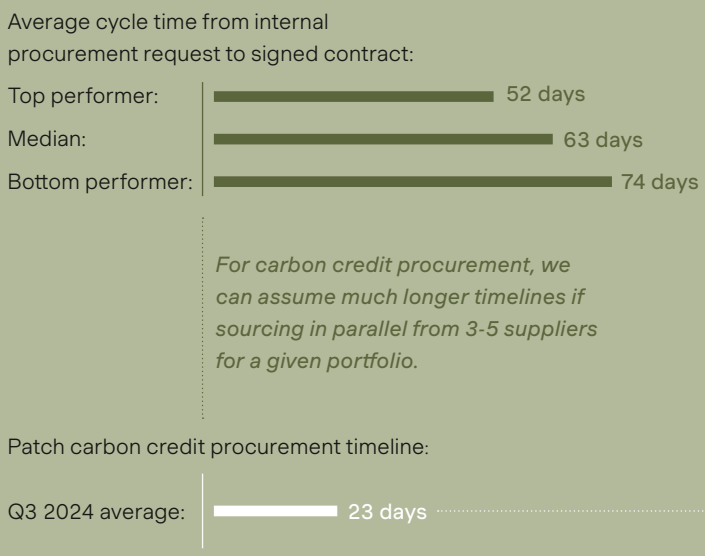
05 Retirement

Each one of these steps is discrete, and for some buyers, each could involve multiple contractors, internal departments, and intermediaries. Now multiply this process for a portfolio of three to five projects or suppliers. Altogether, transacting often represents a large investment of time and resources for buyers.

The purchase phase is one of the most purely operational and logistical challenges of the buyer journey. It requires legal expertise, market expertise, and technical expertise. Procurement departments are often involved, and strict processes must be followed to ensure both payment and credit delivery. And more and more buyers are moving toward complex, multi-year offtake agreements that ensure predictable supply and pricing for the buyer as well as revenue for the project developer.

The challenges of transacting complicated deals are only compounded when suppliers or project developers follow inconsistent procedures between them. The less standardization there is in a market, the more that market relies on trust. If buyers are delayed at any phase of their journey, suppliers may choose to hold inventory they could otherwise sell based on trust in the buyer — or in the absence of trust, they could move on from the deal.

Average supply chain vs. Patch procurement timelines[11]



Patch procurement timeline

63.5%

Compared to the median supply chain procurement cycle, carbon credits on the Patch platform are transacting 63.5% faster.

Carbon credit buying cycles are accelerating as buyers look to lock in fast-moving inventory and as processes become more standardized and repeatable. Technology and expertise are the edge when it comes to securing in-demand projects and transacting quicker.

"I want to limit the risk that by the time we finally get to contract, this one project that is providing us with these really high-quality credits of the vintage we need to meet the brief is suddenly gone."

— Sustainability leader at a U.K.-based property development company

11 Brown, Marisa. 2020. "Metric of the Month: Spend Your Time Wisely in Sourcing to Build a Strong Supply Chain." Supply & Demand Chain Executive.

"We are trying to [close contracts] as soon as possible because we know a lot of good projects are selling out really quickly and we want to avoid [missing out] this year."

— ESG procurement leader at a European pharmaceutical company

The registry landscape and process
Patch has partnered with these registries to streamline the delivery and retirement process:

VERRA
ACR AT WINROCK INTERNATIONAL
CLIMATE ACTION RESERVE
puro.earth
CSA GROUP
Gold Standard
ISOMETRIC
CARBON STANDARDS international

"That's where the pain has been. We've provided [a project proposal to the Executive Committee] and they haven't responded fast enough, so when we go back to the supplier, the project has changed. [...] They ran out of inventory, price change — anything and everything, so then our business case is gone."

— Sustainability leader at a U.K.-based financial institution

How often is purchasing a concern for buyers?

17.3%

Purchasing was a concern in 17.3% of analyzed conversations between Patch and buyers.

Streamlining the operational hurdles in the purchase phase represents one of the most clear-cut cases for scaling through software. Technology is uniquely suited to consolidating and standardizing these operations. For example, power purchase agreements (PPAs) for renewable energy helped contribute to the rapid scaling of the solar industry by reducing demand-side friction and unlocking huge amounts of capital. When buyers can clear purely logistical tasks from their plate, capital can flow faster and they can reserve more time for their broader sustainability goals or for the strategy phase of the carbon credit buying journey.

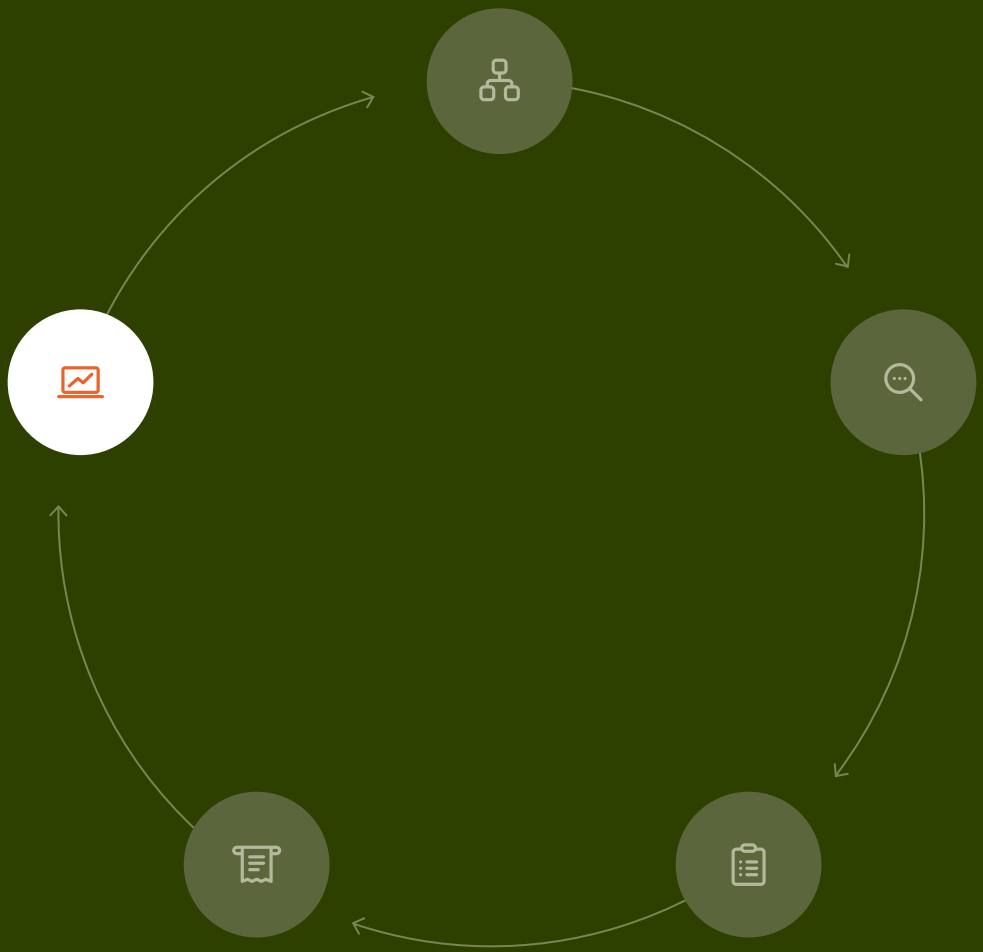
How Patch is working to solve the purchase phase:

01 Patch works on buyers' behalf to both negotiate and draft contracts for purchases ranging from straightforward spot purchases to highly complex, multi-year, multi-project offtakes with fair terms for both suppliers and buyers, saving time and money.

02 When purchasing a diversified portfolio, Patch provides buyers with *one* consolidated contract and payment — no matter how many projects.

03 Patch tracks delivery status for every purchase, and manages retirements on the buyer's behalf as credits are delivered.

05 Manage



Many of the blockers of corporate action in the voluntary carbon markets have everything to do with what happens after the purchase of credits.

Buyers are very concerned about recent scrutiny of certain projects, and are going to great lengths to ensure the carbon credits they engage with don't carry risks to their company. One of the biggest fears many buyers have is learning through the press that a project they've supported has integrity issues. Of course, the most obvious course of action for risk-averse buyers is to disengage entirely, which is perhaps the single greatest limiter of scale for the voluntary market.

In addition to post-purchase monitoring around quality, buyers are equally occupied with regulatory compliance — especially disclosure rules like the European Union's Corporate Sustainability Reporting Directive (CSRD) and California's AB 1305. Reporting on their climate activities is a huge part of the corporate sustainability role, so any friction around carbon credit disclosure can ultimately lead to more friction around engaging with carbon credits at all.

More transparency from corporations around their carbon credit purchases is overall positive for voluntary markets. It creates pressure toward more quality and drives consumer confidence in corporate climate action. On the other hand, if companies at large perceive the reporting process as too difficult, it could chill interest in the voluntary carbon market as an avenue for immediate investment.

Lastly, many carbon removal projects are looking to scale by selling credits against future climate impact. These credits are referred to as ex-ante. These projects need revenue streams against which to raise capital or to reinvest in their solutions in order to get to commercial scale. This meets both sides of the market where they're at, since buyers have shown growing demand for these emerging approaches.

Ex-ante credits, however, carry risk that ex-post credits (credits where the climate impact has already occurred) don't have: the risk that the project can't deliver either the tonnage or the level of impact promised. Buyers are very hesitant to take on that risk unilaterally — especially since sometimes, these more novel projects are more expensive.

This has led to the rise of insurance schemes or credit swapping agreements baked into contracts.

"And then we have the CSRD coming, as you know. Like all big firms, we are understaffed for that."

— Sustainability leader at a global financial services firm

> "Our big focus is CSRD prep. So we're spending a lot of time with auditors as opposed to focusing on exciting programs."
>
> — Sustainability leader at a global retailer

Data points required for reporting compliance
Fields specific to the carbon credit purchase:

California AB 1305:

- Methodology
- Location
- Project timeline
- Vintage
- Type of project (removal vs. avoidance)
- Project durability in years
- Explanation of that durability
- Third party validator
- Annual reductions/removals
- How does project approach risk of reversal?
- What happens in case of reversal?
- Calculation methods

EU CSRD:

- Standard
- Project ID
- Project name
- Vintage
- Tonnage
- Project tech type
- Project mechanism
- Location
- Project methodology
- Duration of carbon removal (permanence)
- Future agreed-upon tonnage
- Validation/Verification body name
- Retirement serial number

"One of the worries that we have as a buyer is: we make a contract for a certain amount of credits, but what if it's not delivered?"

— Sustainability leader at a global electronics company

Default protection on the Patch platform

10,670

To date, Patch has replaced 10,670 tonnes for project defaults, of which there have been 12.

Running Tide case study

In June of 2024, the marine carbon project developer Running Tide was unable to secure investment to continue funding its projects. As a result, Running Tide ceased its global operations and ex-ante credits defaulted.

- 64 unique buyers who purchased through Patch were impacted by the Running Tide default
- 1,692 tonnes were replaced by Patch

"With media scrutiny, what would happen if there is some kind of negative news article? What kind of support can we expect?"

— Sustainability leader at a US software company

"We have a growing number of projects in our portfolio, and we need a trusted source of data so we aren't relying on a manual spreadsheet to keep track of delivery schedules and retirements."

— Sustainability leader at a global pharmaceutical company

"It's one thing to have a robust diligence approach up front to filter for only the most high integrity projects, but it's inevitable that a few years out, something changes and now suddenly maybe some of the projects are bad. Now what?

— Sustainability leader at a global hospitality company

How often is management a concern for buyers?

32.1%

Management was a concern in 32.1% of analyzed conversations between Patch and buyers.

While post-purchase risk is a reality for almost every asset, there are lots of methods that are practical for both mitigating and more evenly distributing risk that are applicable to carbon credits. Real-time monitoring of the latest science at the project level can help buyers get ahead of reputational risks from media and academic scrutiny. Software can likewise streamline the information gathering process to make reporting simpler. And insurance and credit swapping lessens delivery risk around ex-ante credits.

How Patch is working to consolidate the manage phase:

01 Patch monitors project risks across buyers' portfolios — including new scientific or media scrutiny. Our experts also provide updates and advice on navigating risks.

02 The Patch platform centralizes and organizes all the information necessary for complying with the requirements of net-zero claims and reporting policies.

03 If a project fails to deliver a future credit vintage, Patch will replace the credits with an equal number of a similar type and vintage for no additional fee.

04 Patch enables buyers to get a full view of their portfolio, including past purchases made outside of the Patch relationship, to inform their long-term strategy.

NOTE

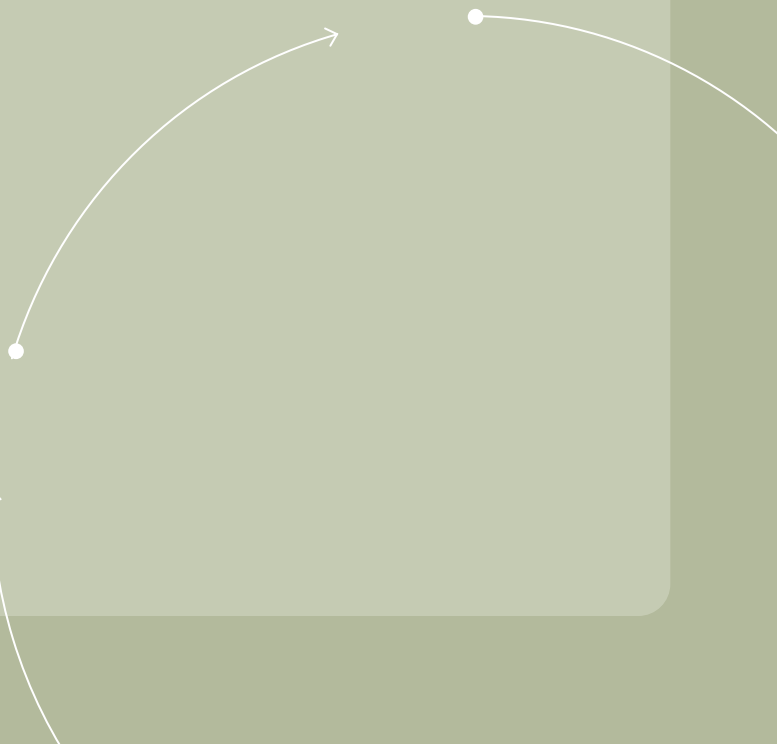
From annual cycle to virtuous cycle

The largest, most sophisticated buyers have moved from only engaging with carbon credits through the lens of tonne-for-tonne accounting on an annual basis toward building, managing, and retiring multi-year portfolios. What was once a bracketed, annual exercise in neutralizing yearly emissions using ex-post credits is moving toward a more proactive, day-to-day operation.

In this new world, the post-purchase period isn't just about risk mitigation and compliance. More companies find themselves managing a highly valuable and complex portfolio of assets at various stages of delivery. They need a way to keep tabs on project updates, delivery timelines, and new issuances from projects they're interested in.

Moreover, the most experienced companies are using the data generated through their buying journey to feed back into the next procurement cycle. Those learnings enable them to act opportunistically throughout the year as opposed to only buying against end-of-year deadlines.

As buyers gain experience and data through their purchasing processes, they can act with greater ambition and strategic clarity to scale the voluntary carbon market.



Conclusion

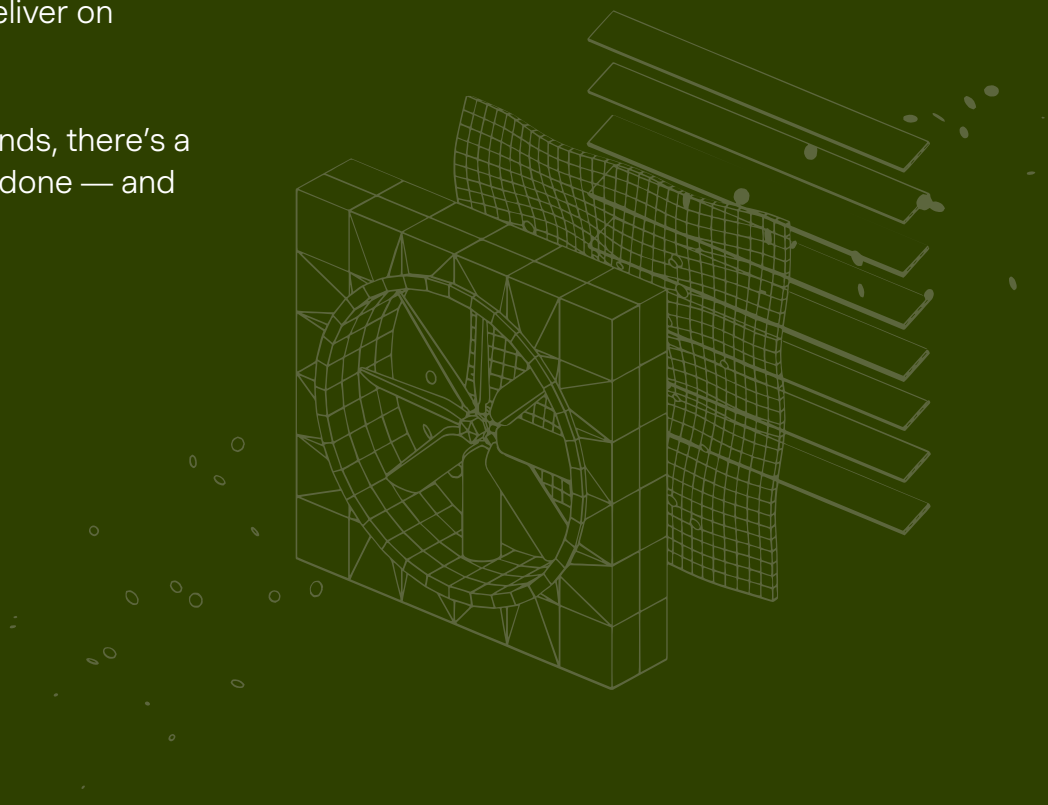
The problem of acceleration can be reduced to headwinds and tailwinds.

In the case of driving voluntary demand for carbon credits, stronger tailwinds are only going to come from layering on political, economic, and social pressure to fund climate solutions. Beyond policies that directly incentivize carbon credit demand, consumers can signal demand for companies to invest in effective climate action, companies can challenge their peers and competitors by marketing and winning on a sustainable brand, and employees can hold their leaders accountable to make and then deliver on climate commitments.

But when it comes to the headwinds, there's a lot of work that can and must be done — and the private sector is leaning in.

As long as the friction companies feel at each phase of their carbon credit buying journey is stronger than the pressure to engage, we'll see slow and stymied growth in carbon markets. Patch is working to make it easier than ever for corporate sustainability leaders to accelerate climate solutions with full confidence in their integrity.

Contact us to talk to a carbon market expert today.



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Patch

Get in touch with our climate team
Whether you have an established climate strategy or are just getting started, let's talk.

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