



The Navigator

Distilled insights to navigate rapidly evolving
carbon markets | October 2025



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Letter from the editor

Every fall, carbon market activity snaps into a familiar frenzy. Budgets racing to be spent, pilots pushed live, deals inked before the calendar resets. This year is no different, even as uncertainty hangs over policy, supply chains, and standards. I'm heartened to see that momentum doesn't have to wait for clarity.

In policy, we're learning new four-letter words as FEOC rules rewrite eligibility for major federal clean energy credits, dramatically shifting the playing field for materials sourcing, licensing, and contracts ([pg. 6](#)). At the same time, federal agencies are pausing or canceling clean energy awards, raising execution risk across batteries, solar, hydrogen, and carbon management ([pg. 9](#)). Not every signal is red, though, as Germany moves toward federal CDR procurement, joining Denmark and others in sending durable demand cues even as US funds stall ([pg. 10](#)).

In science, we examine why biodiversity isn't just a side quest for nature-based CDR. We dig into the data on biodiversity metrics in carbon protocols and outline what credible measurement could look like ([pg. 12](#)). We also unpack new research insights on scaling: a so-called geologic CO₂ storage "limit," a century of data on megaproject overruns, and a better social assessment model that moves beyond box-checking ([pg. 15](#)).

Finally, we're tracking promising signals that compliance and voluntary carbon markets are converging. Proposals to integrate CDR into both the UK ETS and EU ETS will unlock steady demand, but their impact will depend on how integrity is defined and enforced ([pg. 18](#)). And the GHG Protocol's scope 2 update, paired with ISO harmonization, is steering companies toward clearer claims and smarter procurement strategies ([pg. 20](#)).

Thanks for reading this issue of The Navigator. As the year races to a close, momentum and clarity remain unevenly distributed. Our goal is to help you find both.

Bodie Cabiyo, PhD
Editor and Director of Interdisciplinary Science

Acronyms and abbreviations

BECCS: bioenergy with carbon capture and storage
BSI: British Standards Institute
CCfD: Carbon Contracts for Difference
CCS: carbon capture and storage
CCUS: carbon capture, utilization, and storage
CDR: carbon dioxide removal
CO₂: carbon dioxide
CRCF: Carbon Removal and Carbon Farming
DAC: direct air capture
DOE: Department of Energy
ETS: emissions trading system
EU: European Union
EU-ETS: European Union Emissions Trading System
FEOC: foreign entity of concern
FIEs: foreign-influenced entities
GDP: gross domestic product
GHG: greenhouse gas
GGR: UK Greenhouse Gas Removals
IJJA: Infrastructure Investment and Jobs Act

IRA: Inflation Reduction Act
IRS: Internal Revenue Service
ISO: International Organization for Standardization
LCFPP: Low-carbon Fuel Procurement Program
mCDR: marine carbon dioxide removal
MWh: megawatt hour
NDC: nationally determined contribution
NECCS: negative emissions via CCS
OBBB: One Big Beautiful Bill Act
PFE: prohibited foreign entities
SFEs: specified foreign entities
UK: United Kingdom
UK-ETS: United Kingdom Emissions Trading Scheme
US: United States
VCM: voluntary carbon market

Credits

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Policy insights

FEOC rules rewrite the playbook for US clean energy developers

Rory Jacobson

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Bottom line: It is essential for clean energy companies wishing to thrive in a shifting policy landscape to proactively adapt to the new, more restrictive FEOC rules under the OBBB. These restrictions will have far-reaching effects on clean energy project supply chains—especially for battery, solar, and wind projects. However, the rules will be implemented as part of a years-long process, which may be further slowed by legal challenges. These issues are dynamic and rapidly evolving. Carbon Direct is positioned to help guide companies through the complexities of compliance and supply-chain adaptation.

The big, the beautiful, and the FEOCs

The recently enacted reconciliation legislation, commonly referred to as the One Big Beautiful Bill Act (OBBB), incorporates new foreign entity of concern (FEOC) restrictions into many of the [clean energy tax credits](#) created or enhanced by the Inflation Reduction Act (IRA) of 2022. The OBBB defines FEOCs as entities with ties to China, Russia, North Korea, and Iran. Unlike the FEOC restrictions [initially included for the EV tax credit \(30D\)](#) in the IRA to reduce reliance on foreign battery suppliers, the OBBB's new FEOC restrictions apply to a much wider scope of clean energy technology credits.

These new FEOC restrictions could derail many projects crucial to the clean energy transition and, in doing so, reshape the clean energy supply chain worldwide. Project developers that once relied on FEOC-linked supply chains may now find their projects ineligible for the tax credits they need to stay profitable. To stay competitive, project

developers and investors must quickly assess how these rules will apply, confirm compliance, and secure new supply chains and partnership strategies where necessary.

Brave new alphabet soup: PFEs, SFEs, and FIEs

Congress and the Trump administration intend to limit FEOC involvement in US energy supply chains and promote domestic sourcing instead. However, the new FEOC restrictions established in the OBBB are not uniformly applied to all tax credits, and restrict multiple forms of engagement with FEOCs (such as material assistance, licensing agreements, and significant payments).

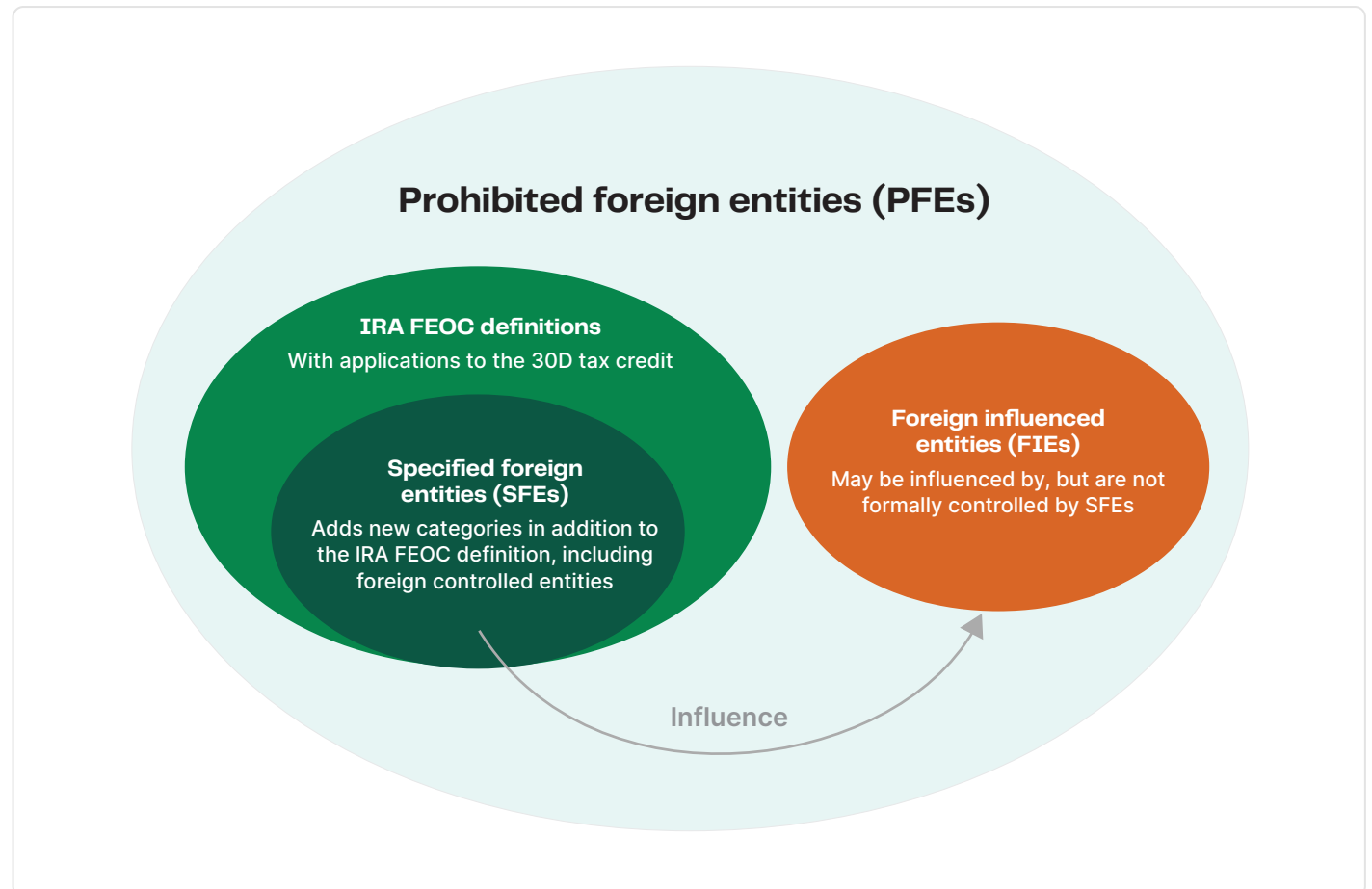
The OBBB introduces multiple new terms in addition to FEOC, including prohibited foreign entities (PFEs), which are further divided into specified foreign entities (SFEs) and foreign influenced entities (FIEs).

PFE operates as an umbrella term within the OBBB, including the full FEOC definition from the IRA,* expanding the criteria and categories under SFEs to include a wider scope of producers. Further, the OBBB also attempts to restrict entities that may be influenced by SFEs, including through the appointment of covered officers, ownership of a significant portion of the entity or its debt, or the payments that would enable the SFE to exercise effective control over a qualified facility or eligible component.

* Under the IRA, FEOC included designated foreign terrorist organizations, entities included on the Specifically Designated Nationals and Blocked Persons List, entities owned by, controlled by, or subject to the jurisdiction or direction of a foreign government, entities involved in criminal activity under various US national security laws, and entities that are engaged in conduct detrimental to US national security or foreign policy.

The OBBB expands FEOC restrictions beyond finished products to include upstream inputs (called “material assistance”) like raw materials and manufactured components. For credits such as the technology-neutral electricity investment (48E) and production credits (45Y) or the advanced manufacturing credit (45X), entities that source a certain percentage of value or inputs from a PFE will no longer be eligible to receive the credit.

Companies must conduct supply-chain due diligence and meet traceability standards to comply. These new reporting requirements are designed to increase supplier transparency and accountability. In the near term, however, these restrictions are likely to delay and disrupt energy projects that are now facing tighter construction and service timelines under the OBBB’s accelerated deadlines.



The prohibited foreign entity (PFE) definition provided in the OBBB adds additional categories and criteria to the IRA’s FEOC definition. The two subcategories include: (1) specified foreign entities (SFEs), which include foreign controlled entities, and (2) foreign influenced entities (FIEs), which include entities that may be influenced by, but are not formally controlled by SFEs. Source: Carbon Direct.

Who feels the pain first?

Certain energy technologies will face bigger impacts than others. US battery supply chains remain highly dependent on FEOC linked anode, cathode, and separator supplies, [which overwhelmingly come from China](#). The domestic solar market faces similar challenges due to [FEOC controlled polysilicon, wafer, and ingot manufacturing](#). Likewise, [US wind energy projects rely on imported rare earth magnets](#). These are typically sourced from FEOC countries, with limited alternatives. Technology sectors with established North American or allied suppliers will be less impacted and are better positioned to rapidly comply with these new restrictions.

Up next: guidance, delays, and lawsuits—oh my!

Implementing FEOC rules under the OBBB will be an evolving process. In the coming months, regulatory agencies such as the Department of Energy and the Department of Commerce will issue guidance and rulemaking in phases, establishing final compliance over several years. Legal challenges and official comments may slow the rollout and enforcement of these new FEOC provisions. After the passage of the IRA in 2022, the DOE did not [release guidance on the 30D FEOC restrictions](#) until nearly two years later—and those rules were both simpler and applied to only a single technology. Still, it would be

a tremendous misstep for business leaders to sit on their hands while we await guidance from the IRS and other agencies. Developers and manufacturers can obtain a competitive advantage by expediently reviewing and mitigating their supply chain, licensing, and contracting liabilities.



Legal challenges and official comments may slow the rollout and enforcement of these new FEOC provisions.

When Washington walks away: clean energy without a safety buffer

Rory Jacobson

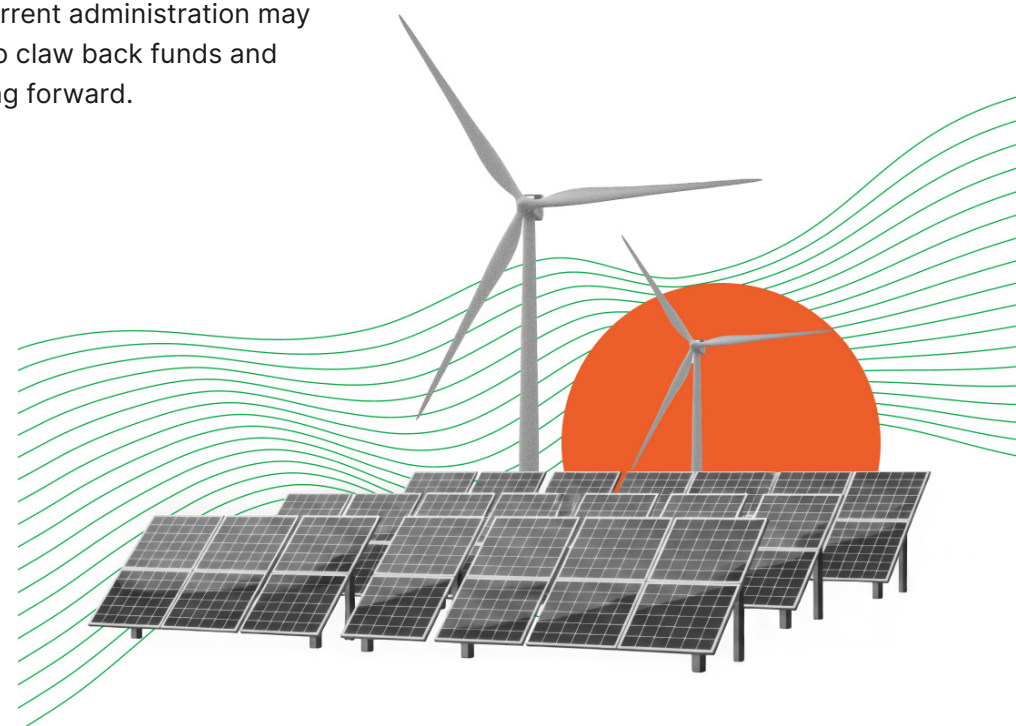
Thad Woody

Why it matters: Federal cutbacks are dimming the outlook for clean energy developers and investors. Projects that once relied on predictable support now face intensified scrutiny at every stage, from milestone reporting to compliance verification. Abrupt funding cancellations can delay or halt even the most promising initiatives, especially for the non-dilutive capital of Federal grants or incentives from the Treasury, putting years of development and investment at risk. The sharp turn in federal policy means that clean energy and CDR entities must now pursue vigilance, clear communication, and robust compliance like never before if they hope to retain federal assistance. As legal challenges loom, the fate of several high-impact projects hangs in the balance.

Federal agencies are pausing and terminating grants, loans, and other financial support for clean energy projects, raising concerns across the sector with increasing scale and frequency. In recent months, the DOE and other agencies have canceled multiple high-profile funding awards to clean energy initiatives. So far in 2025,* the Administration has canceled more than [US\\$22 billion](#) in clean energy investments. Affected projects span advanced battery manufacturing, solar deployment, and hydrogen infrastructure.

The trend also includes several [carbon management](#) and [CDR initiatives](#), which often rely on significant government funding for demonstrations and deployment at commercial scale. Several promising direct air capture projects and engineered carbon sinks have faced grant suspensions or heightened scrutiny over project milestones and eligibility.

Agencies cite missed progress milestones, changes in project scope, and compliance violations as the primary reasons for grant terminations. While development setbacks are common, previous administrations were more likely to work with project developers to reach an agreement and allow the projects to continue. The current administration may use available mechanisms to claw back funds and prevent projects from moving forward.



* At the time of publishing this issue of The Navigator, the US Office of Management and Budget and DOE terminated another ~US\$8 billion in funding. Carbon Direct will continue to monitor and report on this issue.

Germany joins government CDR procurement push

Sarah Braverman

Germany's 2025 draft federal budget, introduced in July, marked the first-ever inclusion of CDR at the federal level. In early August, the federal cabinet [approved the allocation](#) of nearly €500 million for CDR through 2033; with the intention of allocating €111 million in funding for CDR in 2026 and procuring €11.5 million in CDR credits. The German government hasn't yet specified a technology preference for the CDR credits, but it has earmarked €44 million in direct funding for soil CDR projects. However, the federal budget has not yet been finalized and must first undergo parliamentary debate, which is likely to occur [by the end of 2025](#).

If passed, Germany would rank second to Denmark in total CDR procurement expenditure, surpassing the US, which now faces funding freezes under the new federal administration. These two countries are the global leaders for national CDR credit procurement, but they are not the only countries advancing public CDR procurement. In the table shown here, we compare Germany's efforts to the largest national and regional CDR procurement efforts globally.

Why it matters: Many countries have funded CDR projects through RD&D grants or pilot prizes, but few have committed dedicated funding for CDR credit procurement. Procurement sends an important signal and broadens the funding base for projects, making the CDR ecosystem more resilient. Germany's support for CDR in both the federal budget and in the [draft amendment to the Carbon Dioxide Storage Act](#) demonstrates that Germany considers these technologies as necessary for meeting [national climate goals](#)—and that demand-side policy support can be a key driver to scale CDR. These recent actions are particularly notable given that they came from a coalition government [expected to deprioritize climate policy](#), demonstrating that carbon management is viewed favorably in Germany's pluralistic political landscape.

A comparison of national procurement of CCUS or CDR

Country or region	Germany	Denmark	European Union	United States*	Canada
Funding mechanisms and programs	Carbon credit procurement, direct funding	Fund for Negative Emissions via CCS	Innovation Fund, Pilot Procurement	Carbon Dioxide Removal Purchase Pilot Prize via the Infrastructure Investment and Jobs Act (IIJA)	Low-carbon Fuel Procurement Program (LCFPP) within the Greening Government Strategy
Coverage period	2026–2033	2026–2046	Policy under review	2024–2029	2024–2030
Committed funding amount	€500 million (~US\$578 million) for CDR, ~€11.5 million (~US\$13.5 million) for CDR credit procurement	CCS Fund tender: DKK 28.7 billion (US\$4.2 billion)	No EU-specific CCUS fund yet; Innovation Fund pilot	US\$35 million, total (IIJA) + US\$20 million in FY2024 appropriations	CA\$10 million (~US\$79.5 million)
Core incentives and specifications	All funding for CDR is primarily administered through the Ministry for the Environment. CCUS is handled by the Ministry of Economic Affairs.	In addition to the CCS Fund, Denmark also provides direct subsidies (e.g., Ørsted BECCS, est. €1 billion) for CDR.	Carbon Contracts for Difference (CCfD) and pilot procurement under review	Grant funding administered by the DOE; funds currently frozen	Procurement of CDR to meet Canada's "goal of net-zero emissions in Government operations by 2050."

* Several US State governments have introduced noteworthy policies for government procurement of CDR. Most recently, the California State legislature [passed SB 643](#); however, the bill was [vetoed by Governor Newsom](#). SB 643 would have established a \$50 million Carbon Dioxide Removal Purchase Program.

Science insights

The long road ahead for biodiversity in carbon markets

Becca Morrow

Sarah Federman

Bottom line: Biodiversity is essential to resilient ecosystems and durable projects, but the way carbon projects measure it is still rudimentary because it remains a co-benefit rather than a core product. Our review of forest carbon projects reveals that most biodiversity claims rely on carbon removal metrics, such as the number of trees planted or hectares managed, rather than ecological outcomes. That leaves a wide gap between today's narrative co-benefits and the vision of tradable biodiversity credits. Buyers should view current offerings as pilots that test methods, rather than as assets that prove recovery. Moving from intent to evidence will require a standardized framework that guides the selection of locally relevant, outcome-oriented indicators. Until those steps are taken, biodiversity credits will remain important experiments in market design, but not yet a currency for nature recovery. It's difficult to price what is priceless.

[The Kunming–Montreal Global Biodiversity Framework](#) commits signatory countries to halt and reverse global biodiversity loss by 2050, with interim targets for 2030 to track progress. The financing required to meet that global target falls short by an estimated US\$700–900 billion each year. Historically, public funding has been unable to close that gap. Private markets may help, but only with the right metrics. Carbon markets, nature-based projects especially, could play a role in bringing private finance to biodiversity commitments.

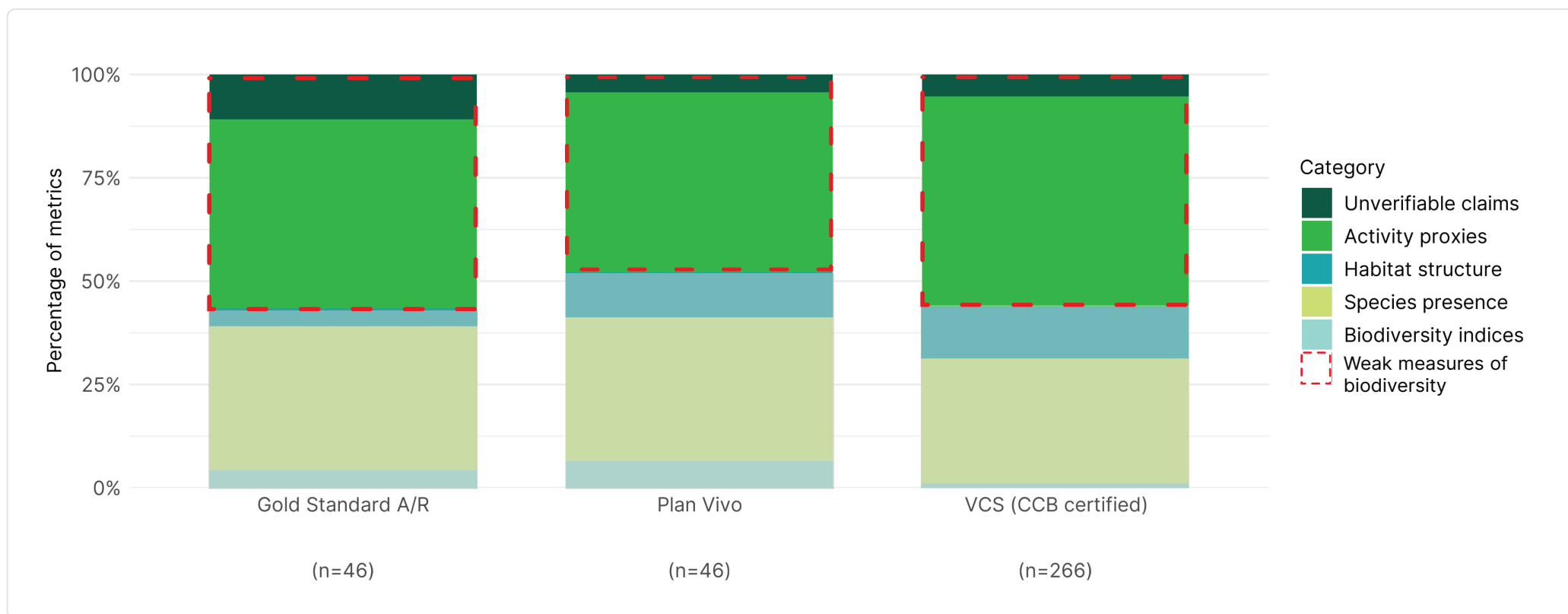
Carbon markets already price a tonne of CO₂. But how do you price life itself—the species, genes, and ecosystems that make climate stability possible? The next frontier could be creating “biodiversity-positive” carbon credits. Yet biodiversity, or the variation within and among living things, is hard to quantify and commodify in a globally consistent manner because it is not measurable by a single outcome or metric. A site may gain species while losing functional diversity, or habitat structure may improve while genetic

variation declines. In the context of carbon market projects, the goal would not be to create separate assets, but to enrich the carbon market with robust and quantifiable biodiversity co-benefits. Defined well, these credits could channel finance toward real biodiversity gains. Defined poorly, they risk repeating the [weaknesses of earlier nature-based markets](#). Because nature and climate are inextricably interlinked, the business case for integration can be clear, in many instances, although increased monitoring requirements will come with added costs.

Diversity is durability in carbon projects

For a carbon project, integrating biodiversity isn't just an academic exercise, but is a prerequisite for durability, ecosystem health, and resilience. [Low-diversity ecosystems lack redundancy](#), so when one species fails, no other species fills its role. Soils lose nutrients, structure declines, and the underlying assets erode.

By contrast, [diverse ecosystems buffer shocks](#) and stabilize ecosystems against disturbances, including those related to climate change. That resilience extends directly to carbon and carbon projects. [A recent meta-analysis](#) found that aboveground carbon stocks in mixed planted forests were, on average, 70% higher than those in monocultures, suggesting that *richer biodiversity drives stronger carbon outcomes*. Moreover, structural diversity reduces pest outbreaks, stabilizes soil function, and maintains nutrient cycling; all processes that support sustained carbon uptake and project permanence. When biodiversity is lost, those functions erode, leaving projects exposed to higher reversal risk and weaker long-term returns. Therefore, embedding rigorous biodiversity outcomes into carbon projects is not just a climate action but is a strategic mechanism for leveraging private finance to achieve [Global Biodiversity Framework targets](#).



Distribution of biodiversity metrics by registry and indicator category across three registries: Gold Standard (18 projects), Plan Vivo (15 projects), VCS (18 projects). Source: Carbon Direct.

Today's VCM metrics fall short on biodiversity

While current carbon registries lack a standardized framework for quantifying biodiversity, many projects still claim qualitative co-benefits. To understand what these claims represent in practice, supported by AI, we reviewed 51 forest CDR projects and extracted 356 indicators from their documentation.

Our analysis identifies a fundamental weakness in how biodiversity is measured in ongoing carbon projects: most claims are based on carbon removal metrics (activity proxies) rather than biodiversity-positive metrics (habitat structure, species presence, biodiversity indices, and ecosystem function). Activity proxies track actions undertaken solely for CDR, measuring things like the number of trees planted, the number of hectares under protection, or the survival rates of seedlings. These are

straightforward metrics to measure and report, but *they say little about whether the biodiversity of an ecosystem is functionally more resilient*. For example, a plantation of a single fast-growing species may score well on a number of trees planted metric, but do little for a site's overall biodiversity.

A glimmer of progress in new projects

The aggregate data shown in the figure above paints a static picture of reliance on simple

proxies. However, a qualitative review of projects claiming biodiversity co-benefits registered under major standards reveals a shift toward an intent to incorporate more complex, biodiversity-positive metrics, such as species inventories and biodiversity indices. The trend is promising, but remains in its early stages; these metrics are applied unevenly and inconsistently across projects. The journey from intent to consistent, evidence-based practice is a long one, and the market is only just taking the first steps.

What's the over-under for biodiversity credits?

The central uncertainty is whether the carbon market can evolve to successfully incorporate and value verified biodiversity outcomes within its assets. Our research suggests the distance between that ambition and current practice in carbon projects is

large. It is important to note that within the scientific community, there remains active debate on the ideal set of universal biodiversity metrics (e.g., [SEED](#) and [Essential Biodiversity Variables](#) are two emergent frameworks), or whether such metrics could even exist. Against this backdrop of evolving academic rigor, the metrics found in carbon project registries appear particularly narrow and unsystematic. Where these scientific frameworks demand standardized, outcome-oriented indicators of species identity, functional traits, and ecological processes, carbon registry reporting remains fragmented and inconsistent. The problem stems from a fundamental mismatch of tools and tasks. Carbon registries and methodologies were designed specifically to measure and verify carbon, not biodiversity.

Structural change is necessary to move from a narrative co-benefit to a tradeable unit, but the distance between the two is still wide. Closing this

gap would require concrete measures like minimum standards for indicator selection, consistent definitions of target outcomes and appropriate science-based metrics, and verification protocols that generate data credible enough to underpin transactions.

Therefore, in the near term, buyers should view biodiversity claims not as verified outcomes, but as market signals. The most impactful action buyers can take is to preferentially select projects and methodologies that are piloting more rigorous, science-based approaches to embedding biodiversity metrics.

For a carbon project, integrating biodiversity is a prerequisite for durability, ecosystem health, and resilience.



New research highlights

Shirin Mavandad

The geologic storage ceiling for CDR?

[A prudent planetary limit for geologic carbon storage](#) ↗

Context tl;dr

Geologic carbon storage is critical for both emissions abatement and durable carbon removal. While often assumed to be vast, storage is limited. This study establishes a “prudent planetary limit” based on a risk analysis of sedimentary basins worldwide. It argues that storage should be treated as a finite, intergenerational resource that requires explicit trade-offs in use.

What they found

The theoretical global storage potential of about 11,800 GtCO₂ drops tenfold when exclusion criteria are applied, yielding a “prudent limit” of roughly 1,460 GtCO₂. That’s still massive (equivalent to 40 years of today’s emissions) and enough to reduce peak warming by around 0.7°C. The study shows storage is unevenly distributed, with countries like Australia, Brazil, Russia, and the US retaining the largest reserves.

The wonky details

Exclusion layers (e.g., seismic risk, protected areas, depth cutoffs, population buffers) shrink global storage dramatically. But these layers rest on arbitrary criteria that don’t match real-world CCS practice. For example, they excluded injection below 2,500 m depth, when roughly 50% of the CO₂ injection wells in operation today exceed that depth. Importantly, the study only assessed sedimentary basins, ignoring other large potential sinks like basalts, peridotites, and coal seams. In short, the restrictions in the paper are arbitrary.

Implications

This claim of a “prudent planetary limit” is misleading and overstates the findings. The paper is better understood as a reassessment of the lower bound for sedimentary basins, not a true limit. To be clear, even at 1,400 Gt, capacity is vast. Storage is dynamic, underexplored, and extendable with mineral options. For CDR, the takeaway isn’t panic, but prioritization. Use storage wisely, keep diversifying pathways, and push forward on better characterization.

Planning for overruns in global energy projects

[Beyond economies of scale: Learning from construction cost overrun risks and time delays in global energy infrastructure projects](#) ↗

Context tl;dr

Large-scale energy infrastructure projects are central to the energy transition but are plagued by chronic cost overruns and time delays. This study tracked 662 projects between 1936 and 2024, covering US\$1.358 trillion in investment. The goal of this paper was to identify patterns, thresholds, and conditions that escalate overruns, especially in emerging technologies like hydrogen and CCS.

What they found

More than three fifths of projects experienced cost overruns. Nuclear and hydro were the worst offenders, averaging 102% and 36.7% overruns respectively, and geothermal came in third at 20.7%. By contrast, solar and transmission often came in under budget. Time delays were equally substantial. Nuclear projects saw the longest lags (64%), followed by geothermal (59%) and hydro

(42%). Taken together, these findings highlight how large-scale builds consistently struggle with both cost and timing.

The wonky details

Projects above 1,560 MW were far more likely to face escalating costs, showing that the biggest builds are the riskiest. Solar's modular design helped avoid these pitfalls, while nuclear costs ballooned under regulatory ratcheting since the 1970s. Learning effects varied: hydro, wind, and CCS improved over time, but nuclear and thermal projects did not. High-income countries saw higher overruns, while transmission projects funded by multilateral development banks sometimes came in under budget due to rigid scope control.

Implications

For CDR megaprojects like BECCS or DAC, the warning is clear: bigger isn't always better. Large, centralized builds [carry familiar risks](#) long known in project management, now validated with global data. Modular, distributed designs are more resilient and scale more reliably. Investors and policymakers must plan for overruns and delays. Project assurance can help to navigate the technical, economic, commercial, operational, and political issues that arise in these projects.

Why social impact tools are falling short

[Beyond impact assessment: an iterative model of social assessment for the climate transition](#) ↗

Context tl;dr

The climate transition demands a rapid buildout of infrastructure (e.g., energy, land, materials) that can bring major social consequences. Existing social impact assessments were never fully institutionalized and are poorly suited for the scale, speed, and complexity of transition technologies. Communities, policymakers, and investors are seeking better tools to anticipate both harms and benefits.

What they found

Current social assessment practices often legitimize projects rather than empower communities, missing cumulative, systemic, and distributional impacts. To address this gap, the authors propose a new social assessment: a "spiral model" that links project-level insights to system-wide planning and embeds social considerations into policy scenarios.

The wonky details

The "spiral model" unfurls in phases: project-level study, scale-up analysis, alternative scenarios, deliberation, and policy/programming. What's new about this model is the feedback loop. Project data informs large-scale planning, while policy and

scenario work shapes project assessments. Three required "building blocks" support this model: project-level social impact data, scale-up modeling, and standardized socio-political scenarios. Without these, social impacts remain underrepresented, fragmented, and contested.

Implications

The paper shows why social assessment must move beyond box-ticking. Local opposition and legitimacy gaps can delay or derail CDR deployment. Many CDR pathways (e.g., DAC, BECCS, mCDR) face social risks, both place-based (e.g., local community, land, resource) and pathway-based (e.g., lock-in, equity, legitimacy). Building CDR markets requires anticipating impacts across scales and supply chains, and engaging affected communities early to avoid repeating past extractive harms.

Current social assessment practices often legitimize projects rather than empower communities, missing cumulative, systemic, and distributional impacts.

Market insights

Voluntary and regulatory markets converge in Europe

Chimdi Obienu

European policymakers are laying the groundwork to scale the CDR market by sending regulatory signals that create stable, long-term demand. This year has brought concrete proposals to integrate CDR units into the UK ETS, the EU ETS, and the EU’s 2040 climate target. Below, we take a close look at the UK and EU schemes. We dive into how these schemes could take shape once implemented, how regulators are defining quality criteria, and what the implications may be for the CDR market—both within Europe and globally.

The UK playbook

What’s the opportunity?

The UK government intends to allow regulated UK ETS entities to compensate for their emissions with CDR by 2030. Initially, a percentage of the ETS emissions cap will limit the number of CDR allowances in the system. As the cap will be around 50 million tCO₂e in 2030, even moderate integration (e.g., 5%) could transform the scale of demand for

Bottom line: No longer limited by the “V” in VCM, regulatory support for CDR is sending positive signals for the European market. Legislation could shift CDR from a discretionary action to a compliance-driven necessity—but only if its credibility is secured. Under the proposals, CDR procurement would be an optional route to compliance rather than mandatory. As buyers won’t pay premiums without confidence in quality, rigorous standards will be critical to unlock investment and trust. The outcome of ongoing negotiations, consultations, and legislation will determine whether CDR becomes a durable pillar of Europe’s decarbonization strategy.

UK versus EU: ETS proposals to integrate VCM credits into compliance markets

Market	UK ETS	EU ETS
Proposal	Allow eligible VCM credits to be used toward ETS compliance.	
CDR eligibility	To follow UK Greenhouse Gas Removals Standard; BECCS and DAC specifications in draft	TBD; likely to follow EU Carbon Removals and Carbon Farming framework; BECCS and DAC specifications in draft
Other CDR criteria	200 years minimum carbon storage duration	TBD
Timeline	Integration operational by 2029	Policy evaluation expected in July 2026
Demand scale	TBD; ETS emissions cap expected to be roughly 50 million tCO ₂ e in 2030	TBD; ETS emissions cap expected to be roughly 800 million tCO ₂ e in 2030

CDR in the UK. Over time, the permitted share of UK Greenhouse Gas Removals (GGR) allowances will rise, and the government has suggested removing the cap entirely in the future. Project developers will be able to sign offtake agreements or use alternative routes to the compliance market, such as auctions facilitated by the government.

What does quality look like?

There are questions about why, given the choice, regulated entities would pay for expensive CDR allowances over traditional units. Part of the answer lies in confidence that eligible CDR is of unimpeachable quality. The British Standards Institute (BSI) is developing technical specifications

for DAC and BECCS under the UK GGR Standard. In response to a draft of these specifications, [Carbon Direct found](#) significant areas of alignment with our [Criteria for High-Quality Carbon Dioxide Removal](#), but also potential for strengthening.

What does this mean for the domestic market?

These developments come alongside publication of the [GGR Business Model](#), a framework under which domestic CDR projects can receive price support under fixed-term contracts for difference. This adds to existing contracting models available to power generation and industrial carbon capture facilities connected to selected CO₂ transport and storage networks. Together, these mechanisms are beginning to form a cohesive national CDR framework that aligns market incentives with infrastructure development.



The EU playbook

What's the opportunity?

In another boost for the market, the EU has announced plans to allow companies to use permanent CDR credits for EU ETS compliance. Further details are pending legislative approval and policy evaluations, but the same broad dynamics seen in the UK will apply here—though in a market that is an order of magnitude larger.

Consequently, the EU ETS is poised to become a leading source of demand for credits issued under the EU Carbon Removal and Carbon Farming (CRCF) framework, especially because negotiations on the Green Claims Directive have stalled. This regulation was also expected to generate secure CDR demand, by stating that only CRCF or equivalent carbon credits could contribute to valid corporate climate claims.

What does quality look like?

In a saturated market, much of the CRCF's value will lie in the confidence it provides through EU-backed accountability and the credibility of endorsed projects. Things are not off to a great start, given the response to draft technical specifications for DAC, BECCS, and biochar projects. Carbon Direct experts found, and highlighted to the EU, that the biochar standard [requires a more conservative quantification approach](#) if integrity is to be maintained. Several NGOs have also raised

concerns, arguing that one cannot properly assess whether CRCF credits are additional until they have concrete use cases. As a result, the rules governing the scale and form of the CRCF's integration into the EU ETS will be critical in determining the framework's credibility.

What does this mean for the domestic market?

The EU is adopting a receptive approach toward tradable CDR, as shown by the ETS announcement and proposal to use Article 6 credits toward the [EU's 2040 climate target](#), starting in 2036. This shift reflects the progress made since UN Clean Development Mechanism credits were banned from the EU ETS in 2020 over justified environmental integrity concerns. This momentum will only hold if CRCF methodologies are designed to match or exceed the standards set by existing frameworks.

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[EU 2040 climate target: Implications for carbon dioxide removal](#) ↗

Future-proofing your scope 2 power math

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Bottom line: The GHG Protocol's scope 2 updates will encompass comprehensive revisions to both location-based and market-based methodologies, implemented through phased approaches. The direction is clear: more precision in matching electricity consumption to clean generation, more options for organizations making voluntary clean energy claims, and more implementation flexibility. The new ISO-GHG Protocol partnership signals these changes are part of a larger shift toward harmonized, globally consistent carbon accounting standards. For organizations serious about climate commitments, this represents more than compliance; it's an opportunity to align accounting practices with how electricity markets actually work. Companies that understand these changes and prepare accordingly won't just meet reporting requirements; they'll make better strategic decisions about clean energy investments and capitalize on emerging opportunities in clean electricity markets.

The long-awaited scope 2 shake up

The GHG Protocol is updating its scope 2 guidance for the first time since 2015, and billions of dollars in corporate reporting and renewable procurement decisions are hanging in the balance. When companies make climate commitments or investors size up sustainability performance, scope 2 methodology isn't just technical accounting; it's the foundation that makes those commitments credible. The revision aims to enhance accuracy and consistency of scope 2 emissions accounting while examining how market instruments, including mechanisms like EACs, can reduce scope 2 emissions, addressing criticism that existing market-based mechanisms aren't cutting it.

The process has been anything but quiet. Following stakeholder disagreement and 343 methodology-focused public comments, the GHG Protocol continues to deliberate on which methodologies will be included, with significant recent changes. The updated draft will be released for public comment this October.

Another crucial development is the [landmark partnership](#) between ISO and GHG Protocol to harmonize GHG standards, adding complexity and opportunity to these changes. Let's break down what's actually changing and why it matters for your organization.

The new standards landscape

Under an ISO-GHG Protocol agreement, the organizations will combine their leading GHG standards into harmonized co-branded international standards. This includes the ISO 1406X family, alongside the GHG Protocol Scope 2, Scope 3, Corporate, Product, and Project Standards.

This partnership addresses [standards fragmentation](#). For companies wrestling with upcoming scope 2 changes, the methodological updates are part of a broader harmonization effort that could fundamentally reshape how carbon accounting standards are developed globally.

Two axes, multiple approaches

Revisions will encompass both location-based and market-based methodologies. Think of it as updating the rulebook on two playing fields: how you account for the source of your electricity, and how you match your consumption with clean energy generation.

Location-based methodology will feature a hierarchical emission factor system, enhancing accuracy across temporal and geographic dimensions, requiring detailed data only when it's readily available and publicly accessible at no cost.

The market-based methodology will strengthen clean energy inventory claims through hourly and geographic matching requirements. Hourly matching applies exclusively to organizations making voluntary clean energy claims. In tandem, consequential accounting is being developed as a complementary methodology to the scope 2 update.

Three flavors of electricity matching

The following methodologies represent the core approaches under evaluation by the Scope 2 Technical Working Group. Each tackles the same fundamental question differently: How do you prove your electricity consumption is actually matched to clean generation?

Annual power matching (current methodology):

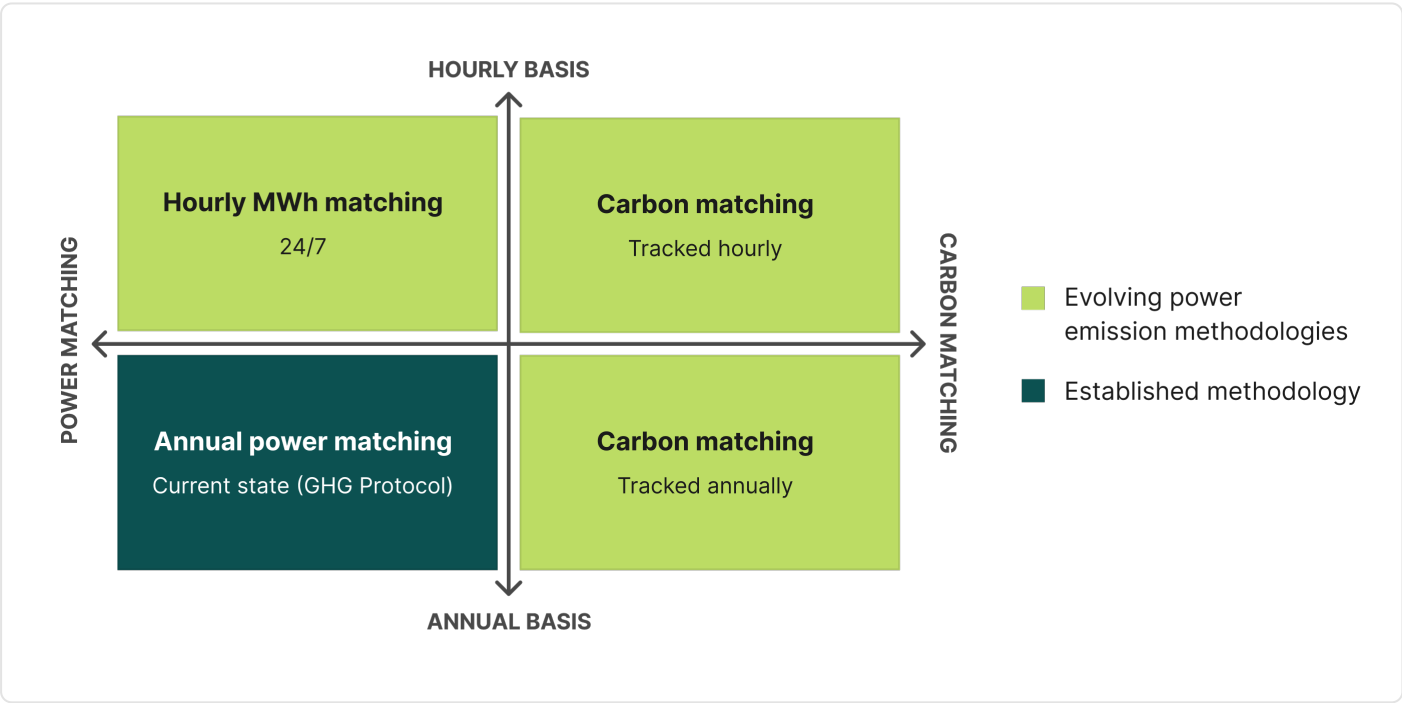
Sums all electricity consumption over a year in MWh, then matches it to the sum of all low-carbon power generation over the year, regardless of timing. Like balancing your checking account at year-end, timing doesn't matter.

Hourly power matching (24/7 matching): Matches MWh consumed to MWh generated over a defined time period in a fixed place; requires all electricity consumption within an hour at a location to be matched against low-carbon power generated for the corresponding hour and location. If you use power at 3 pm on Tuesday in Texas, you need clean power generation at 3 pm on Tuesday from Texas.

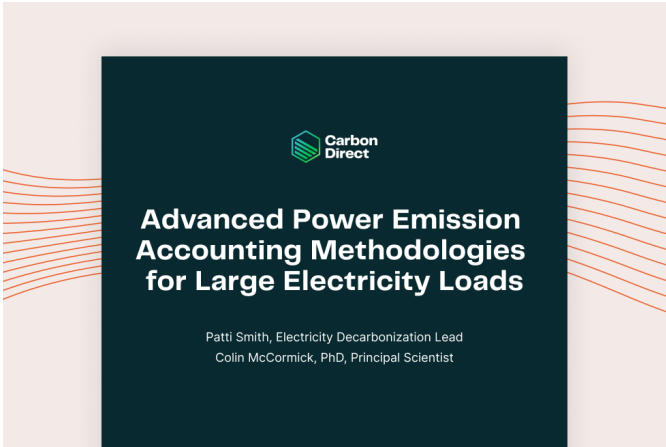
Emissions impact accounting (consequential approach): Estimates GHG emissions caused by a power load and matches this to estimated emissions avoided by using low-carbon power generators.

Focus on actual carbon impact: what emissions did your electricity use cause, and what emissions did clean energy prevent?

Each approach reflects different philosophies about what it means to “match” electricity consumption to clean generation, and the choice between will fundamentally shape how companies invest in clean energy.



Scope 2 emissions accounting methodology matrix. Source: Carbon Direct.



How to future-proof your power math

- 1. Don't panic, don't wait.** Organizations have adequate preparation time. Two years remain before GHG Protocol publishes the finalized Scope 2 Standard and a phased implementation approach will provide additional transition flexibility.
- 2. Take stock of what you have.** Evaluate your current scope 2 methodologies and develop a strategic approach to renewable energy certificates, guarantees of origin, power purchase agreements, and other market-based instruments that ensure future compliance alignment.
- 3. Stay plugged in.** Proactively follow market developments and GHG Protocol guidance updates, ensuring organizational readiness for methodological changes. With the new ISO partnership, staying informed means watching both GHG Protocol announcements and the harmonization process.

This isn't just about compliance; it's about aligning your emission accounting practices with how clean energy actually works and positioning your organization for smarter investments.

What's next on the timeline?

[Public consultation](#) will open this October for 60 days. Revised guidance is expected by mid-2026, with a finalized Scope 2 Standard scheduled for release by the end of 2027.

This timeline gives organizations breathing room, but the debate will continue for another two years. The ISO partnership adds another consideration: these scope 2 updates are happening within a broader context of standards harmonization that could influence how future revisions are developed and implemented across different jurisdictions and reporting frameworks.

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[Electricity emissions accounting: GHG Protocol and LCA explained](#) ↗

This isn't just about compliance; it's about aligning your emission accounting practices with how clean energy actually works and positioning your organization for smarter investments.

Don't panic, don't wait.

Take stock of what you have.

Stay plugged in.





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