BRAINBOX AI

Becoming a net zero company

A step-by-step guide to measure, reduce and offset your carbon emissions

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Introduction to the net zero cycle

As much as we might like it to be, the road to net zero isn't linear. Instead, it's more of a continuous loop of measuring, reducing, and offsetting to achieve consistent emissions reductions.

This loop is known as the "net zero cycle" — and it's easily the most sustainable way for organizations to reach and maintain net zero status.

The net zero cycle is a flexible framework that can be applied in different ways depending on where your organization stands in its decarbonization journey.

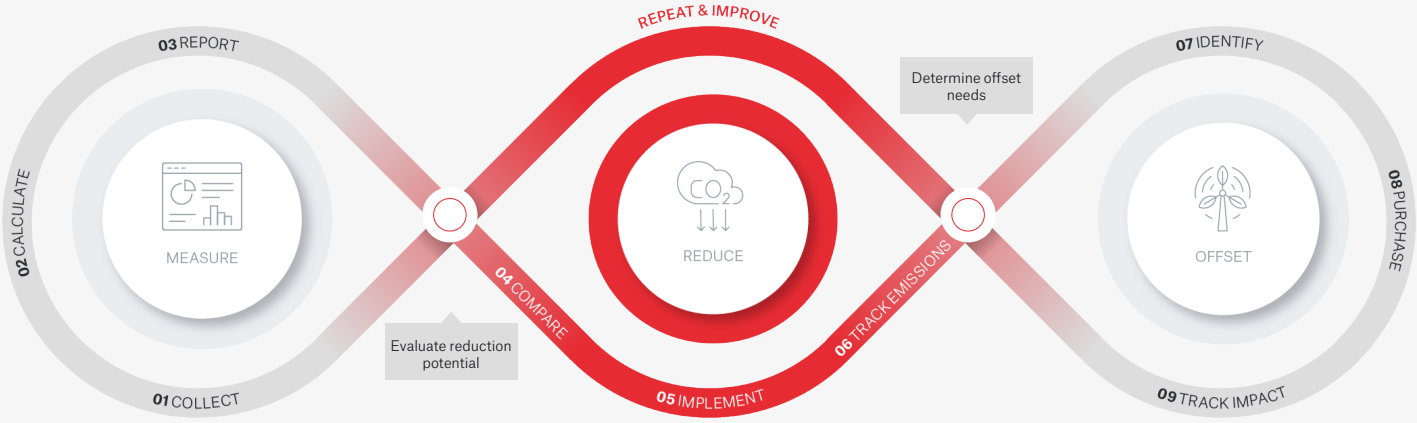
If your organization is at the very beginning, you can go through the nine steps focusing on a singular emissions category (i.e. fleet) or on a single scope (i.e. scope 1). Starting small is a good strategy to ensure you see emissions reductions quickly while you take more time to figure out the more complex portions of your net zero journey (i.e. scope 3 emissions measurement).

Make this framework your own by adapting it to fit your organization's needs

As your organization matures, you can increase the number of emissions categories and scopes until you've included everything. At that stage, you'll probably find that you're tackling multiple net zero cycles concurrently. For example, you can be implementing an HVAC optimization project (scope 2) while offsetting your gas boiler emissions (scope 1) and measuring the environmental impact of your product's packaging (scope 3). The nice thing is that, whichever phase your company's at, you can make this framework your own by adapting it to your organization's needs.

Of course, we know this is all easier said than done, that's why we've created a no nonsense guide to navigating the entire net zero cycle, outlining all the steps you'll need to take (and keep taking) on your road to net zero. We hope that you'll revisit it often on your path to sustainability success.

The net zero cycle explained



Measure

01 Collect

Collect activity data for all your GHG emissions sources over a period of 12 months, in line with your baseline.

02 Calculate

Each activity data point collected must be multiplied by the corresponding emissions factor to produce your GHG emissions inventory data.

03 Report

Present the data collected and calculated in an easy-to-understand, actionable report designed to inform your stakeholders and drive your decarbonization initiatives.

Reduce

04 Compare

Based on your company's priorities and constraints, research, evaluate, and prioritize your next decarbonization projects.

05 Implement

Roll out the decarbonization project you've selected and ensure it makes the biggest impact as quickly as possible.

06 Track Emissions

Use an effective tracking mechanism to ensure you can attribute the reduction results to the appropriate project(s).

Offset

07 Identify

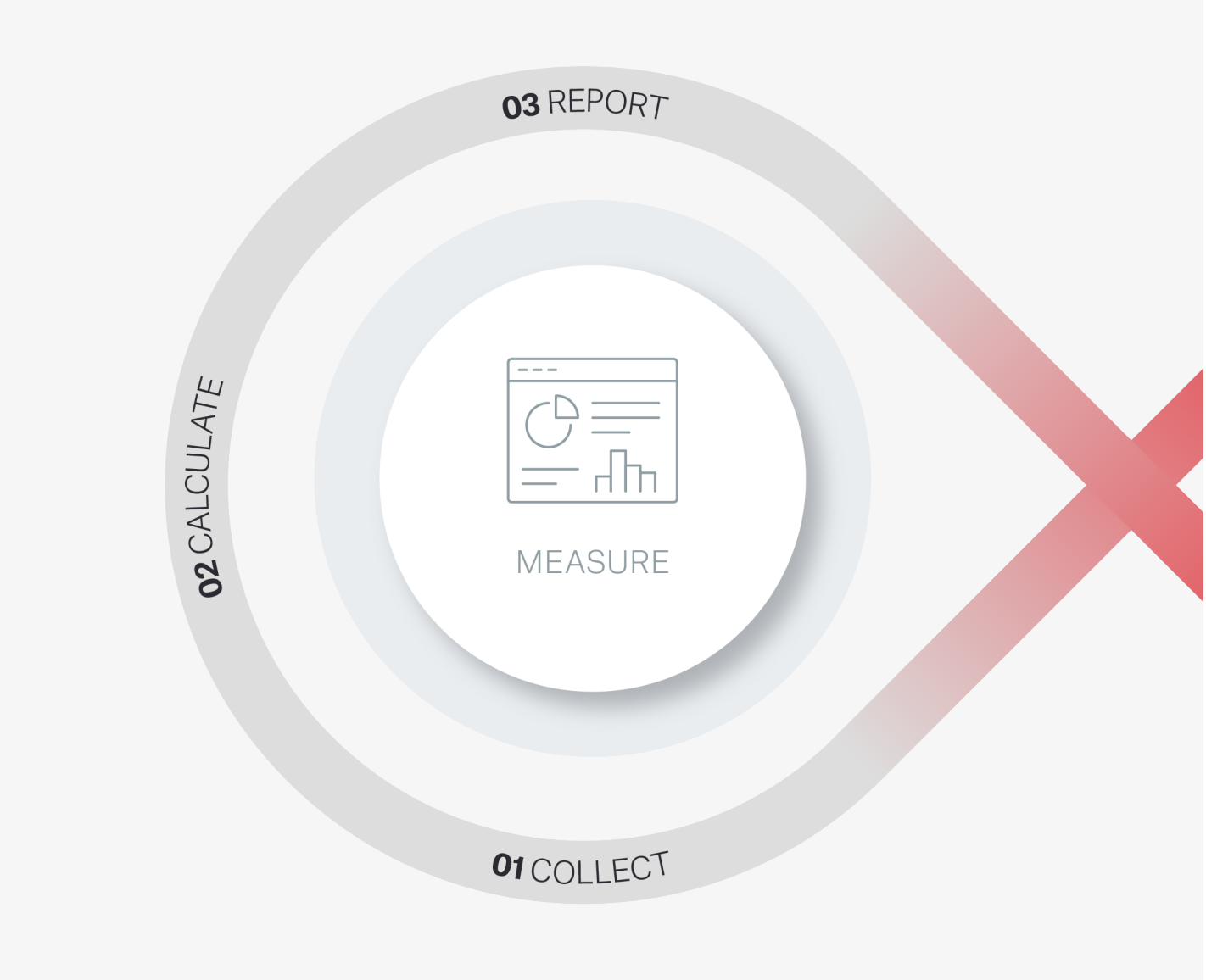
Establish what type of offsetting projects best fit with your corporate mission, values, and unique organizational requirements.

08 Purchase

Access the carbon credit market and purchase the offsets you've identified using a reputable exchange platform.

09 Track Impact

Establish a system to monitor the effectiveness of your purchased offsets and use this information to inform next year's offsetting investment decisions.



Measuring GHG emissions

Measuring your company's GHG emissions on a yearly basis after your baseline has been set is key to understanding your organization's emissions reduction journey.

This involves a recurring process of data collection, emissions calculations, and emissions inventory report creation, enabling you to compare your current and previous GHG emissions, track your progress, and set informed targets and strategies.

Collecting activity data

To get started, you need to collect all the activity data possible on your organization's scope 1, 2, and 3 emissions, and use the corresponding emissions factors to calculate its footprint. The first time you do this will be the most labor-intensive, but don't worry, it gets easier once you've laid the groundwork.

You can find your activity data in:

Utility bills

Rustle up your company's energy bills, including electricity, natural gas, oil, or other fuels, then record your consumption data.

Fuel consumption records

If your company has a fleet of vehicles or owns fuel-guzzling machinery, you can find records of their consumption details in fuel receipts, invoices, or fuel tracking systems that capture the volume of fuel used.

Metering and monitoring systems

Water meters, energy meters, sub-meters, or data loggers can provide some detailed information on energy usage.

Production data

When it comes to your manufacturing processes, production records, equipment logs, or process flow diagrams might give you a better understanding of where your emissions are stemming from, including chemical reactions and combustion.

Transportation and logistics logs

For companies involved in transportation and logistics, you can estimate your transportation activity emissions by gathering data on distances traveled, modes of transport, fuel consumption, and payload weights.

Vendor and supplier data

To source your upstream emissions, you can reach out to your vendors and suppliers for information on their own emissions associated with the goods or services they provide.

Internal surveys and audits

Gathering data from various departments and facilities within your organization may not sound like a walk in the park, but it can be made easier by conducting structured surveys or audits. As much as possible, try to engage directly with those responsible for the specific activities or processes that generate emissions.

Industry databases and reports

When in doubt, look it up. You can refer to industry-specific databases or reports that provide emissions data or benchmarks for similar companies or operations. These resources can help you get a better estimate of your emissions based on industry averages or best practices.

Resource: To start recording your emissions, you can use the World Bank's Energy Balance and GHG Inventory Spreadsheet

Running emissions calculations

After pinpointing the emissions sources and collecting all the data needed, the next step is to calculate your organization's emissions. For this, it's important to know that GHGs are measured in tons (or kilograms) of carbon dioxide equivalent (tCO_2e), and are calculated like this:

activity data	x	emissions factor*	=	GHG emission

*Emissions factors fluctuate from year to year, so make sure you have the most up-to-date conversions to maintain accuracy.

What are emissions factors?

Emissions factors represent the rate or quantity of GHG emissions released due to a specific activity. To find an activity's emissions factor, you'll need to look it up in an emissions factor database, such as the IEA emission factors database or, if you're in the UK, the GHG reporting conversions factors provided by the UK government.

Not into math?

You can simplify the calculation processes by employing a reliable third party like BrainBox AI, which not only automatically collects and aggregates your scope 1 and 2 activity data, but also matches each activity to the appropriate emissions factor (using recognized sources such as the United States EPA's GHG Emission Factors Database) and calculates your emissions in accordance with the GHG Protocol.

To help calculate your company's footprint you can use:

- The GHG Protocol's handy emissions calculation tools, which are separated into cross-sector-, country-, and sector-specific tools.

- This comprehensive emissions calculation cheat sheet, which provides a more holistic list of tools and services to help calculate emissions.

Generating an emissions inventory report

Once you have the results of your emissions calculations in hand, you can compile this information into an annual emissions inventory report, which breaks down your company's emissions for a specific year by scope and activity. This report can be published on your company website, distributed to your shareholders, and/or published in an emissions registry, such as the Climate Registry.

Creating an emissions inventory each year is an incredibly useful undertaking, as it can give you a comprehensive overview of your company's carbon footprint and help pinpoint its most energy-intensive activities. The information it contains can also provide reliable data for tracking emissions reductions, estimating future emissions, helping plan projects and budgets, working to support regulatory measures, and improving stakeholder transparency.

Use this template from the GHG Protocol to get started.

Inventory report examples:

Tesla

Standford University

Evaluating emissions reduction potential

Having sourced your activity data, calculated your emissions, and bundled them into a neat report, you should now be able to identify your greatest areas of opportunity to decarbonize. For example, you might notice that your fleet is responsible for **4%** of your company-wide emissions while your buildings are emitting **19%**. Considering your organization's unique reality including its budget, organizational objectives, resources, and more, it will become clearer which emission activities hold the greatest reduction potential in terms of speed and impact.

Determine which 3 opportunities you'll focus on and move on to "reduce".

Reducing GHG emissions

Not even Dorothy could get to net zero with a simple click of the heels. Cutting emissions requires consistent effort to move you toward your emissions reduction targets. Luckily, reducing emissions doesn't have to be costly or time intensive.

In fact, it could end up being good for business, helping you lower your energy costs, improve your brand reputation, meet stakeholder expectations, and attract and retain talent.

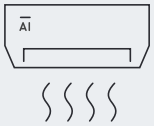
Comparing carbon reduction solutions

Based on your emissions reduction potential assessment, you can begin evaluating various carbon emissions reduction solutions. Start by establishing your organization's evaluation criteria based on its priorities, budget, and constraints. After that you can begin researching and selecting the project(s) that'll have the biggest impact on your company and the environment.

Decarbonization solutions to explore

LED lighting

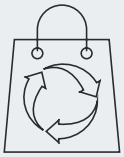
hvac optimization



waste mgmt

electric fleet

green procurement

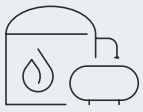


Renewable energy solutions to explore

solar

wind

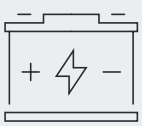
biomass



hydropower

geothermal

energy storage



Implementing emissions reduction projects

Now that you've decided which reduction solution fits best, it's time to plan and implement it. Having a concrete, attainable, and viable plan that details how the solution will be deployed and how it aligns with your company's overall sustainability strategy is key. Based on our experience with large-scale deployments, we've identified four key actions you'll need to take to help ensure smooth project implementation:

01 Establish your project's scope

- Flesh out your objectives: What are your emissions reduction goals for this project? Which departments within your organization will be implicated or affected?
- Select partners and providers: Who'll be providing the service, solution, or technology? And who'll be collaborating on the project?
- Define who'll be involved: Will you choose a single department to spearhead your company's carbon reduction efforts? Will you choose someone from each department to make up a team of differently skilled experts? Or will you hire a third party with expertise in this area?
- Set a timeline: Break the project down into phases (such as pilot, scale up, and full deployment) and set realistic targets for each. This will make the goals you set for each phase more achievable.
- List the resources you'll require: Make a detailed list of everything your project needs to be successful, including financing, how many employees you'll require, and the technology you'll need to integrate.
- Set KPIs and ensure you have a reliable system to track the project's results.

02 Involve your key stakeholders

- Pitch the project to your stakeholders. Include all the details you've worked on when establishing the scope of the project so they have as much information as possible to make an informed decision.
- Get feedback on any perceived risks your stakeholders may have identified
- Get stakeholders to commit early. This will make it easier to budget, gain momentum within your organization, and implement the reduction plan.

03 Develop the plan together

- Involve your teams to find solutions for the important identified risks. Make sure these are well-researched and fit into your budget.
- Don't underestimate the changes that will impact your teams — from taking on new roles, to training, to time delegation.
- Plan for training sessions, if required.
- Make resources easily available. These can be in the form of coaches, processes, instructional material, etc.
- Prepare an internal and external communications plan to broadcast your emissions reduction goals and plan. This will help you gain momentum and hold you responsible for your promises.

04 Execute your new emissions reduction plan

Tracking emissions reductions

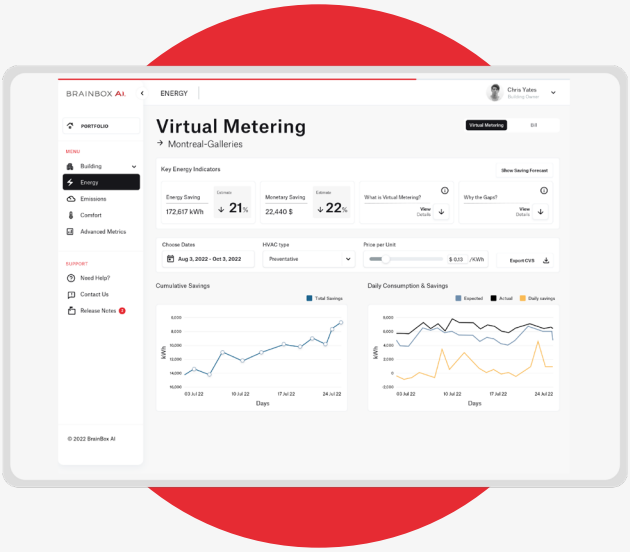
Continuously monitoring the progress and effectiveness of your emissions reduction projects using key performance indicators (KPIs) can go a long way to ensuring you're still on track to meet your targets. Additionally, it helps you understand the speed at which you're making progress, communicate the results of your efforts with confidence, and evaluate the project's efficacy and ROI.

Although some project reduction results are easy to track, such as the gas you've saved from fleet electrification, many other projects are much harder to keep track of. For example, if you switch out your plastic packaging for a more sustainable alternative, it'll be more challenging to determine how much you've reduced your carbon footprint by.

With this in mind, it's recommended to start with projects that produce easily or automatically tracked results. This will make the reporting easier and more precise.

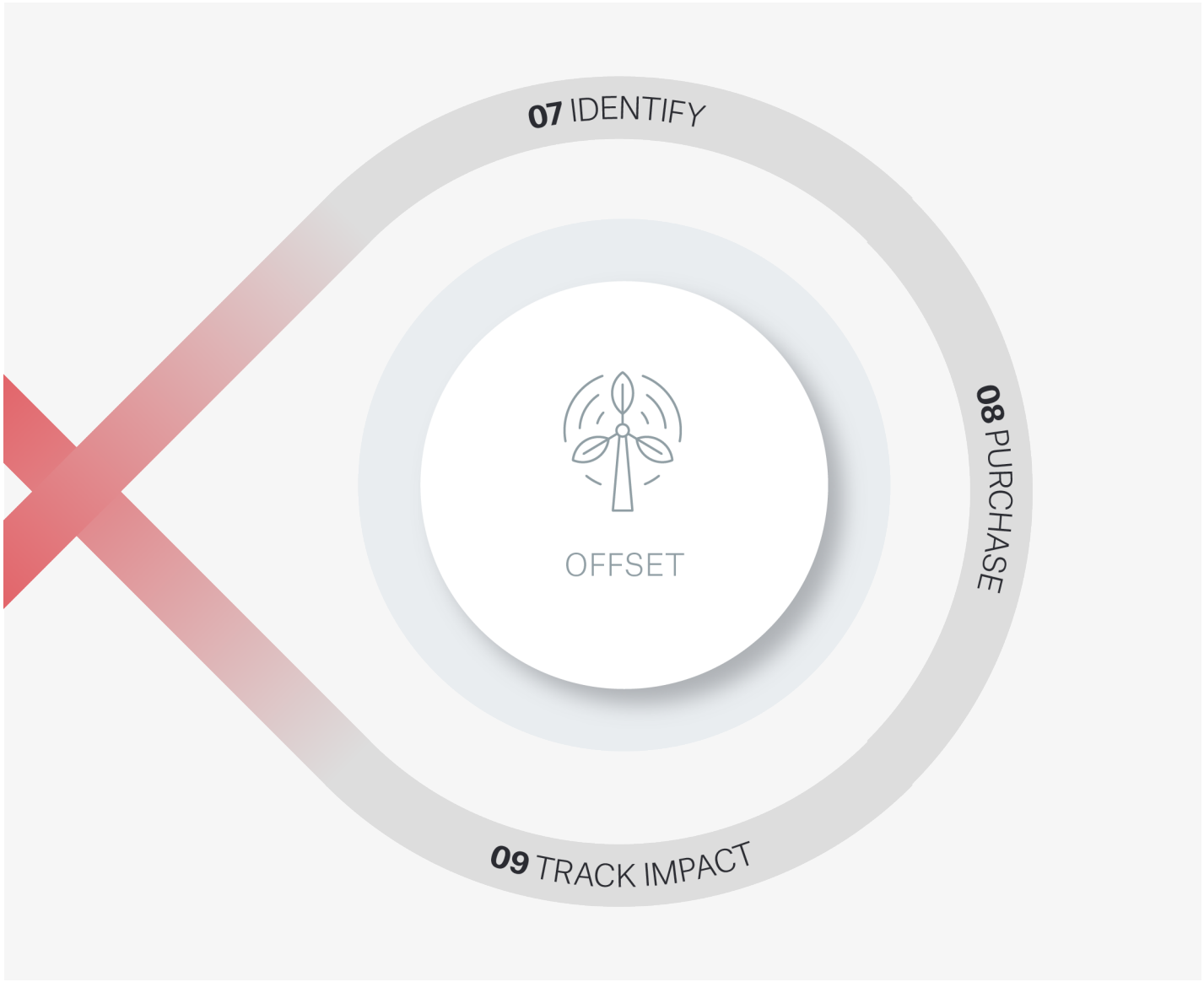
An example of a system that can automatically track emissions reduction results is a virtual meter. This tracking method can be used, for example, to measure the efficacy of an HVAC optimization solution, automatically creating a baseline of current energy consumption and comparing it to how much energy would have been consumed without the solution.

The results are then displayed on a dashboard, enabling sustainability teams to easily view their progress and compare it to their baseline.



Calculating your offsetting needs

Once you've figured out your carbon footprint and taken measures to reduce it, remaining carbon emissions can be offset. This requires calculating the number of tons of carbon your company continues to emit so you can purchase the equivalent through the carbon market.



Offsetting remaining emissions

Offsetting is accomplished by buying carbon offset credits, which can be put towards sustainability projects such as planting trees or conserving wetlands.

Identifying reputable carbon offset projects

Before investing in any initiatives, it's important to ensure that the ones you choose are managed by reputable organizations that produce actual, meaningful environmental benefits.

Here are some important things to consider before investing in an offsetting project:

Location

The project's location and whether your company would rather invest in projects closer to home or further afield (where they could potentially have more of an effect on rural communities).

Values

Whether its causes are aligned with your company's values.

Method

Whether the project avoids or removes carbon, and which best suits your company's values.

Track record

Whether it has a proven track record of success and longevity.

Certification

If the project is certified by recognized third-party organizations such as Verified Carbon Standard (VCS), the Climate Action Reserve (CAR), the Climate, Community & Biodiversity Standards (CCB), the American Carbon Registry (ACR), and the Gold Standard.

Credibility

Whether its methodology is backed by reputable research and proven technology.

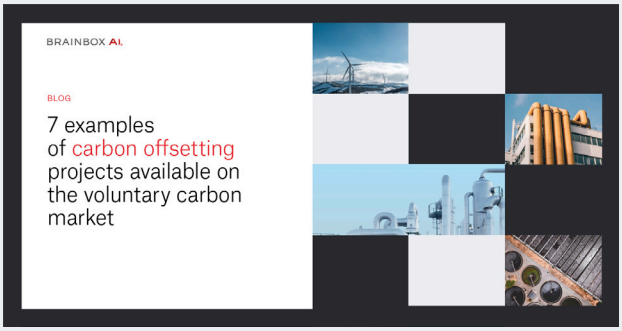
Permanence

The project's length and permanence (how long the CO2 that's removed or avoided will be kept out of the atmosphere).

Diversity

Whether it's contributing to a diverse offsetting portfolio that's both current and effective.

Discover your next offsetting investment with these 7 examples of carbon offsetting projects available on the voluntary carbon market.



Purchasing offsets

Now that you've done your research and chosen the offsetting project that best suits your business, you'll no doubt be thinking about the financial costs you'll be taking on to purchase them. So, as you sit down with your finance team, you might want to pose important questions, including:

What's the budget?

There's a huge range of carbon offsets to choose from, which also means there's a large variation in price and quality. The amount of CO2e your company emits will dictate your offset requirements, and from this you'll be able to calculate what your cost will be per ton of carbon offset.

Do we qualify for any tax credits or grants?

Some governments offer tax credits, grants, and incentives to support carbon offset projects. So, when budgeting for your offsetting project, first find out if you qualify for any financial assistance.

What are our financing options?

If your business is unable to fork out the entire cost of the carbon offset upfront, consider exploring financing options. Some carbon offset providers offer installment plans or financing arrangements to help businesses spread out the costs over time.

Which carbon market platform should we use?

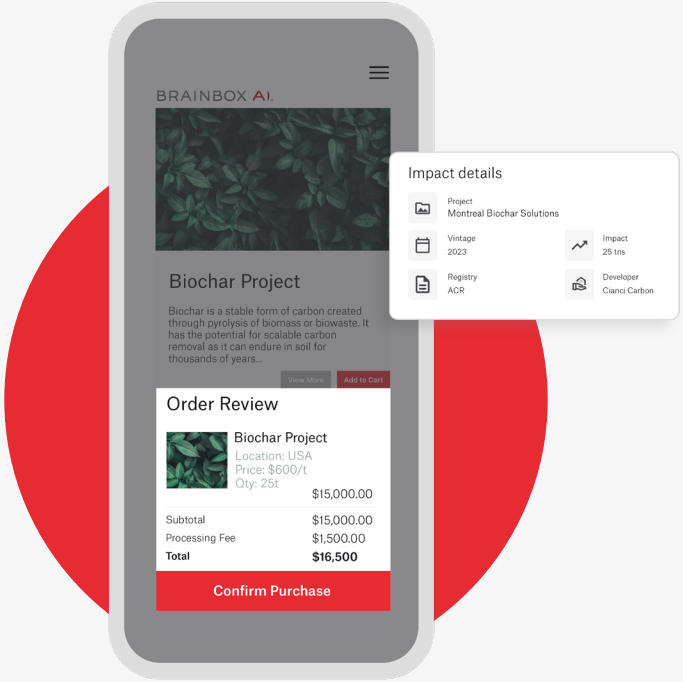
Reliable carbon market platforms securely connect buyers with various carbon offset projects, making it safer and easier to find and purchase offsets. Look for a platform that has experience, a good track record and that adheres to internationally recognized standards like the VCS, CAR, and Gold Standard.

Should we consider a long-term commitment?

Some carbon offset projects offer discounts or other incentives for long-term commitments. If your budget allows, consider making multi-year commitments to reduce costs and provide more stable support for your offset projects.

Should we employ a credit rating firm?

Reputable carbon credit ratings firms, like Sylvera Ltd. and BeZero Carbon, can help you assess whether carbon projects deliver on their claims. They can also provide information about the carbon credit market, including pricing and supply and demand trends.



Tracking the impact of your offsets

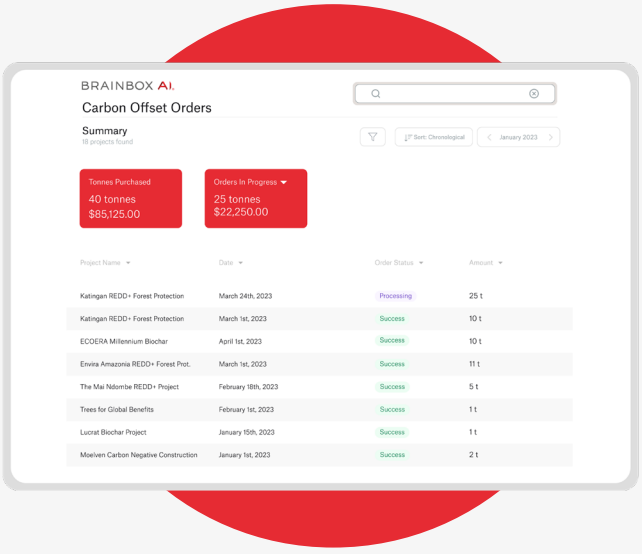
After you've chosen your projects, be sure to track their environmental and societal impact to determine whether you'd like to renew your investments or re-invest in something else.

Having a dashboard that provides a visual representation of which carbon offsetting projects a company has invested in, their progress over time, and the impact they're making is crucial for tracking offsetting investments and ensuring the reputability of each project.

Moreover, it encourages transparency and engagement, turning investors into more active participants in the carbon market.

A good dashboard should include:

- How much carbon has been offset through each project. This would be measured in tons of CO2 or CO2 equivalent and should be regularly updated to reflect the ongoing impact of the project.
- The environmental impact of each offsetting project, which can be illustrated in the equivalent number of trees planted or cars taken off the road. Tangible examples like these can help companies grasp the significance of their contribution. It could also include showcasing improvements in local air quality, biodiversity conservation, or community development initiatives.
- The social impact of each chosen project, including any benefits the project has brought to a local community, such as job creation, access to clean energy, or education programs.



Repeat & improve

Emissions reduction is a never-ending process. As new business divisions are added or removed, supply chains mutate, and new technologies deployed, your carbon footprint will evolve.

That's why it's important to consistently re-measure, re-calculate, and re-assess, your organization's emissions and reduction efforts, evaluating them regularly to ensure they're still in line with your organization's goals.

This process of evaluation, refinement, and reduction is known as the net zero cycle loop - and it's currently one of the most effective approaches to ensuring your organization reaches and maintains net zero.

That's because, each time you come to the end of the cycle, it starts over, constantly fine-tuning your emissions reduction processes to become more effective.

What's more, the cycle is designed to wean your organization from its reliance on carbon offsets by continually increasing its reductions until net zero is officially met. After that, it helps your company maintain its net zero status, facilitating a truly meaningful contribution to our fight against climate change.

There's a lot to achieving net zero, so treat it like eating an elephant:

Take it one bite at a time, breaking up your scope 1, 2, and 3 emissions and focusing on getting each one to net zero separately.

By the time you're done, you'll be ready for dessert.