

Explaining “Scope 1” Carbon Offset Credits and “Scope 3” Supply Chain Reporting Assets in ESMC’s Program

To combat climate change, the international scientific community has detailed the need for all sectors to reduce greenhouse gas (GHG) emissions as quickly as possible, recommending a hierarchy of avoided energy waste, efficient energy conversion, the use of renewable energy, and lastly, offsetting remaining GHG emissions that cannot otherwise be reasonably eliminated in the near-term.¹ Private corporations who voluntarily reduce their GHG emissions or are subject to legal or compliance GHG reduction requirements typically start the process by assessing their full GHG emissions inventory. The [Greenhouse Gas Protocol](#) (GHG-P), developed by the World Resources Institute (WRI) and its partners, is the global standard guidance used by corporations to assess their GHG inventories and to subsequently account for emissions reductions achieved within their inventories. A corporate GHG inventory is categorized into 3 *scopes*, or categories, by GHG-P, as follows:

- **SCOPE 1:** Scope 1 emissions include GHG directly emitted by an organization’s facilities or operations. Examples include GHG emitted from a company’s own facilities and vehicles.
- **SCOPE 2:** Scope 2 emissions come from power generation, usually purchased from public utilities, to fuel a company’s operations. This is a form of indirect GHG emissions for companies.
- **SCOPE 3:** Scope 3 emissions are those a company causes indirectly via its supply chain. A food company, for example, would include emissions generated in the production and transport of raw materials or ingredients it purchases such as wheat, flour, butter, and sugar as part of its Scope 3 emissions footprint.

In ESMC’s innovative market program, we quantify emissions for two of these categories. We generate carbon offset credits – which companies can use to reduce part of their direct Scope 1 GHG inventory – and what we call analogous (‘compliance grade’) water quality credits. ESMC also generates agricultural supply chain emissions reductions in the form of reportable assets that food companies can purchase to make claims towards indirect ‘Scope 3’ emissions reductions they achieve within their supply chains. ESMC’s program thus helps food companies meet two different categories of GHG emissions in their corporate inventories: Scope 1 and Scope 3. ESMC does not generate credits that would assist in reducing Scope 2 indirect energy footprints.

¹ https://www.panda.org/discover/our_focus/forests_practice/climate_change_and_forest/?362819/First-Things-First-Avoid-Reduce--and-only-after-thatCompensate

ESMC's Program: Ecosystem Services from Agriculture

Through the course of managing their lands, agricultural producers can create beneficial environmental outcomes that are in high demand from consumers and corporations, their shareholders, and customers. These outcomes include increased soil carbon, reduced GHG emissions, improved water quality and water-use conservation, and habitat that supports increased biodiversity. ESCM's market program enables producers to undertake the systems changes that can create these outcomes, and we quantify, verify, and certify the monetized credits and assets, and stack and sell them to corporate buyers in private voluntary ecosystem services markets. We operate collaboratively to help corporates achieve their climate goals.

ESMC's market design includes a technologically advanced infrastructure and innovative protocols to generate credible, standards-based, and science-based outcomes that meet requirements of offset markets and supply chain reporting programs. ESCM's market program monetizes results from producers' stewardship practices into ecosystem services credits and assets. Our protocols and programs are based on the latest science, measurable results, and broadly accepted market-based standards. We quantify and verify the credits and assets using approved protocols that reflect real increases in soil organic carbon, reductions of GHGs, reductions of agricultural run-off that impact water quality (including nitrogen, phosphorus, and sediment), as well as improved water conservation. In this context of agricultural ecosystem services, ESCM's protocols are structured to generate carbon offset credits to meet corporate Scope 1 direct GHG emissions reductions, or indirect Scope 3 assets or claims for corporate supply chain reporting, explained below.

Carbon Offset Markets: Compliance Markets and Voluntary Markets

Many companies have assumed voluntary commitments to reduce their Scope 1 GHG inventories. Some are subjected to jurisdictional regulatory or legal requirements to reduce their direct GHG emissions. For example, California created its 'cap and trade' system to cap corporate GHG emissions at set levels that decline over time, and created a trading system, or 'compliance market', to allow entities to purchase carbon offsets to account for some portion of their annual required GHG reductions. Most regulatory GHG systems like California's allow companies to reduce some portion of their Scope 1 footprint – but not all – through the purchase of carbon offset credits generated by other non-capped sectors. These compliance carbon markets allow emitters to purchase offset credits created by more readily available and cost-efficient carbon reduction practices to mitigate their carbon footprints in the early years of their compliance requirements. This helps them meet regulatory compliance in the short-term while making longer-term capital turnover investments that will reduce their direct GHG emissions in later years.

Voluntary carbon markets operate in the same way, but without statutory requirements, and can help corporations to voluntarily reduce their direct GHG emissions inventories by purchasing offset credits from another party whose emissions reductions are properly quantified, verified, and certified.

The Clean Water Act similarly regulates effluent emissions into water sources, creating a ‘compliance market’ for water quality credits in local jurisdictions, typically at the state level but also at regional and watershed levels. In the same way that GHG emitters may struggle to meet statutory requirements to reduce GHG emissions at early stages, a municipal water authority may have trouble removing excess nitrates, phosphorus, or sediment from their water supply to the levels required by regulations. Instead of extensive capital investments in water treatment technology and equipment, a market can incentivize entities in their watershed - including agricultural producers - to reduce release of nitrogen, phosphorus, or sedimentation into waterways. ESMCs program can generate water quality credits in these ‘compliance markets’.

Corporate Supply-Chain GHG Emissions and Emissions Reductions Reporting

Separate from reducing their direct Scope 1 GHG inventories, many companies have also pledged to reduce their indirect Scope 3 supply chain emissions by undertaking interventions with their suppliers to reduce their own direct GHG emissions. This practice is sometimes referred to as “insetting.” These supply chain emissions reductions are not offsetting emissions from elsewhere – they are emissions reductions voluntarily achieved to reduce a corporation’s indirect environmental footprint.

In the agriculture sector, food and beverage companies can work with the farmers and ranchers they purchase goods from to achieve lower emissions and make claims about these reductions in their annual ESG reports. Since few corporate food companies produce their own raw materials – and many agricultural products have large GHG footprints, many of these companies have significantly higher Scope 3 supply chain emissions than Scope 1 operational emissions. It is not uncommon, for instance, for a food and beverage companies’ supply chain GHG footprint to account for 90% of its total GHG inventory. ESMC’s market program enables food and beverage companies and their agricultural suppliers to reduce this footprint and generate quantified, verified outcomes that meet corporate reporting requirements on an annual basis.