



Forest carbon markets for forest landowners

What is a carbon offset?

A *carbon offset* – also referred to as a carbon credit – is a reduction in GHG emissions in one location that compensates for or "offsets" GHG emissions made elsewhere.

A carbon offset is also called an emission reduction ton (ERT) because a metric ton of CO₂ is the standard unit for carbon accounting. While CO₂ is the most abundant GHG, a carbon offset can apply to other GHGs as well – like methane (CH₄), nitrous oxide (N₂O), and ozone (O₃). Each GHG has a different global warming potential (GWP), which is based on how long the GHG stays in the atmosphere and how strongly it impacts atmospheric warming. For simplicity, all GHGs are compared to CO₂ and expressed in the same unit: metric tons of carbon dioxide equivalent (Mt CO₂e). Carbon dioxide has a GWP of 1, while methane has a GWP of 25. This means that 1 Mt of CH₄ is equivalent to 25 Mt of CO₂e or 25 ERTs.

What is the purpose of carbon offsets?

As businesses, municipalities, organizations, and individuals make efforts to reduce their GHG emissions, reductions can be difficult, costly, and take time. Carbon offsets are intended to help these entities reduce their emissions through the purchase of offsets while they work to reduce the sources of emissions.

In addition to the carbon taken in by forests, carbon offsets can be generated by reducing emissions or increasing sequestration from a variety of sources, like agricultural or industrial processes; for example, capturing methane emitted from a dairy farm or a coal-fired power plant. Regardless of the type of carbon offset, it must represent a direct and quantifiable reduction in emissions or an increase in sequestration.

Natural climate solutions

Forests are considered a natural solution to climate change because they remove CO₂ – a potent GHG – from the atmosphere and store the carbon in wood and soil. Increasing the amount of carbon stored in forests and harvested wood products can reduce the amount of CO₂ in the atmosphere while providing the other critical ecosystem services that forests provide. New carbon offset markets allow landowners to sell the carbon taken up by their forest to another entity to compensate for emissions made elsewhere. Because of the interest in forest carbon offsets from landowners and emitters, new opportunities for selling forest carbon are rapidly developing. Forest carbon offset projects can include improved forest management practices, avoided deforestation, or tree planting. Programs are open to all forestland owners, including family forests, municipalities, tribes, non-profit groups, and public entities. Selling forest carbon can provide an additional source of revenue to a landowner and the long-term commitment keeps forests intact, but carbon projects are complex and may not be suitable for all forest parcels.