

For individuals or larger entities interested in reducing and mitigating their impact on the environment, there are three important strategies. One is reducing energy use. This includes reducing energy use, by implementing energy efficiency measures. The second is changing sources of energy sources to reduced emissions options like alternative fuels. Third is using renewable energy sources like wind and solar. This can include onsite renewable energy and offsite renewable energy like purchasing certified renewable energy distribution companies. A fourth strategy for reducing one's emission footprint is acquiring emission offsets. Offsets are reductions in emissions in one place that can be used to compensate for emissions elsewhere, and are usually denominated in metric tons of a reduced emission or megawatt hours of renewable energy produced. By purchasing an offset, one is in essence paying someone else to reduce their emissions, and the purchaser then owns that environmental benefit. If the purchaser uses the offset to reduce their own inventory of emissions, they must permanently retire it so that it can never again be purchased or sold.

### Emission Reduction Projects

- **Renewable energy projects.** Sources include wind, solar, hydro, and other forms of renewable energy. These projects reduce emissions by replacing electricity from conventional power plants. Power plants typically combust fuel that releases a variety of greenhouse gas and other emissions related to health. Replacing this electricity with renewable generation serves to offset all of these emissions. These offsets are called Renewable Energy Certificates (RECs) and are measured in megawatt-hours.
- **Energy efficiency projects.** These projects create offsets (also called white tags) by reducing energy use below a "business as usual" baseline. These projects also offset the whole range of emissions that would have otherwise resulted from energy use.
- **Methane destruction.** Methane (CH<sub>4</sub>) is a greenhouse gas 25 times more potent than carbon dioxide. Methane is emitted in large quantities from landfills, coal mines, and animal waste in agricultural operations. When this methane is collected and flared, it is largely converted to CO<sub>2</sub>, and therefore results in a reduction in greenhouse gas emissions.
- **Alternative fuel projects.** Good examples are converting power plants from coal to natural gas fuels and converting trucks from diesel fuel to compressed natural gas.

### Sequestration projects

- **Forestry and agricultural soil projects.** Vegetation absorbs CO<sub>2</sub> from the air, and

forestry projects include both the sustainable management of existing forests as well as the establishment of new forestland. Agricultural soil projects involve the employment of farming practices that increase the ability of the soil to sequester carbon, such as decreasing tillage and planting grasses.

- **Carbon capture and storage.** In carbon capture and storage projects, CO<sub>2</sub> emissions are collected and transported to underground geological or ocean formations where they cannot impact the atmosphere.

As in all voluntary markets, it is up to the buyer to make sure that what is purchased is of high quality. Standards (e.g. Green-e Climate, Gold Standard, Voluntary Climate Standard, LEO-001) are available to assure this quality for emission offsets.

See the Leonardo Academy Emissions Consulting Services web page.

For additional information contact Leonardo Academy at:

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