

Renewable Energy

An opportunity to mitigate greenhouse gas emissions, generate clean energy and drive revenue through carbon finance.

Carbon Dioxide (CO₂) is a natural by-product of fossil fuel combustion and the most important man-made greenhouse gas (GHG).

Not only does it account for 77% of global GHG emissions but all other man-made GHG emissions are measured in the impact on global warming in terms of tons of CO₂ equivalent (tCO₂e).

The main sources of man-made CO₂ emissions are¹:

Power Stations	30%
Industrial Processes	21%
Transportation Fuels	20%
Residential/Commercial Land Use	12%
Fossil fuel retrieval processing & distribution	9%

The generation of power from fossil fuels accounts for about one third of all global greenhouse gas emissions.

Harnessing the world's energy has been inextricably linked with the ascent of modern society with CO₂ concentrations in the atmosphere increasing by 25% since the industrial revolution.

What were once considered cheap sources of energy are now revealing their real costs in terms of their impact on the global environment and lack of sustainability.

There are however renewable sources of energy available and we have the proven technology to exploit these. Using renewable energy would lead to reductions in greenhouse gas emissions as well as provide sustainable energy security for our future.

Green Holdings

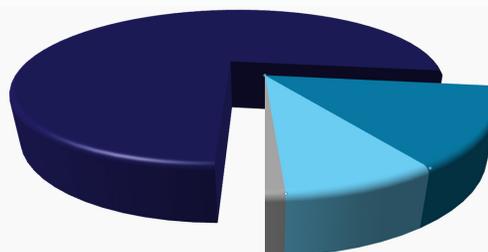
- technical knowledge to help clients identify and assess potential projects
- engineering and financial structuring experience to implement a project
- a clear understanding of the complex registration and reporting processes required to qualify for carbon credits
- expertise in the global distribution of power supply and demand

Benefits

- reduce GHG emissions
- utilise a clean and renewable energy source
- generate revenue
- establish long-term energy security

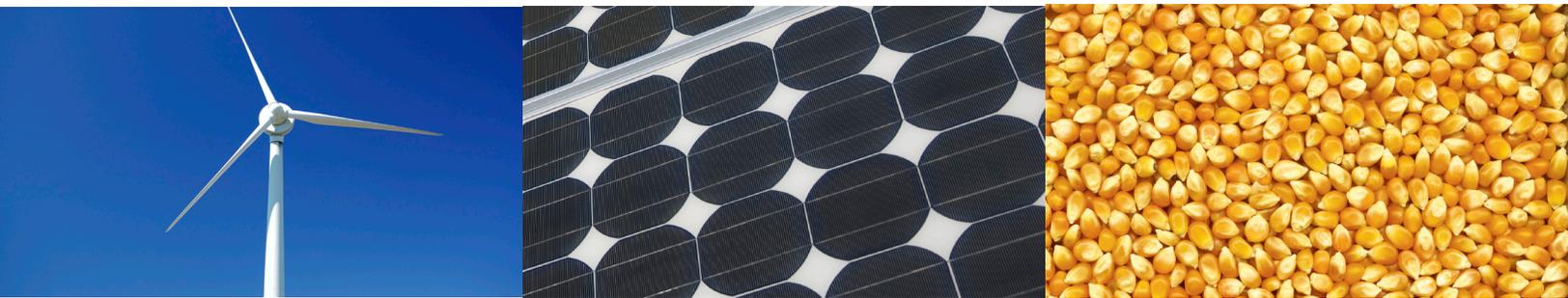
Global Man-made GHG Emissions - 2004

methane 14%
nitrous oxide 8%
carbon dioxide 77%
high global warming potential gases 1%



Source: IPCC Fourth Assessment Report: Climate Change 2007

¹ 'Global and regional drivers of accelerating CO₂ emissions' Raupach, M.R. et al., 2007



Wind

Plentiful, renewable and clean, wind power has the ability to significantly reduce greenhouse gas emissions if used to replace existing fossil-fuel derived electricity.

Wind power is an established, rapidly growing technology currently providing 1% of global energy supply and significantly more for some early adopters – 20% in Denmark, 9% in Spain – demonstrating the huge potential of this energy source.

Wind turbines convert the wind-driven rotation of turbine blades into electricity through an electrical generator. Wind power installations can be large-scale, with off-shore and on-shore wind farms generating energy directly into national grids, or smaller, individual turbines and micro-turbines for isolated use.

Solar

Clean, free and abundant, the sun's energy is so powerful that the amount of energy that falls on the earth in just one hour equals our entire annual global power consumption.

The technology to convert sunlight into useable energy has been investigated for decades. The current main modern large-scale industrial technologies are photovoltaics, solar concentrators and solar thermal water heaters.

With the cost per watt of solar generated electricity steadily declining over the past 25 years, there is significant potential to reduce GHG emissions through the replacement of fossil fuels.

Fossil fuel replacement initiatives, such as solar thermal water heaters, form the basis of most solar CDM projects worldwide.

Biomass

Biomass is organic material made from plants and animals containing stored energy from the sun. Plants absorb the sun's energy via photosynthesis and this energy.

When burned, plants release chemical energy as heat which can be used as direct heating or to produce steam to drive turbines for electricity generation.

Biomass can also be converted into other usable forms of energy such as methane gas or transportation fuels such as ethanol or biodiesel. Burning or converting biomass does release CO₂ but the amounts are much smaller than from fossil fuels and are considered to be negated by the CO₂ absorbed by the plants when they are grown.

Biomass is renewable as more plants can be grown and organic waste will continue to be produced.

Background

The Kyoto Protocol created flexible mechanisms allowing participating industrial nations to meet their GHG emissions reduction commitments by funding projects in developing countries under the Clean Development Mechanism (CDM), and in other industrialised nations through Joint Implementation (JI).

Green Holdings utilizes technical and financial engineering expertise along with its comprehensive understanding of the carbon markets and currencies to reduce greenhouse gas emissions.

Converting existing liabilities into long-term revenue generating assets.