CANDRIAM
A NEW YORK LIFE INVESTMENTS COMPANY

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THE USER'S GUIDE TO CARBON OFFSETTING

Voluntary Carbon Offsetting consists in funding projects that seek to reduce or sequester greenhouse gas emissions. Such projects are financed via the purchase of carbon credits. Each tonne of greenhouse gas avoided by an offset project , expressed in tonnes of CO_2 equivalent, is certified by a carbon credit. Elisa Vergine, Senior ESG Analyst at Candriam, explains its workings and the different stakeholders of a system that is still largely a mystery.

Elisa Vergine
Lead ESG Analyst on
Environmental Investment & Research

WHY CARBON OFFSETTING?

Whether it be for the purposes of manufacture or heating their premises or in the business trips made by their staff, companies produce carbon dioxide (CO_2), which, when released into the air, helps increase volumes of greenhouse gas (GHG), the biggest cause of global warming. Voluntary carbon offsetting seeks to neutralise those activity-generated emissions that cannot be completed eliminated.

Any business intent on complying with the 2° objective of the 2015 **Paris Agreement** is duty-bound to reduce to a maximum its CO_2 emissions. Whether this be via increased energy efficiency or renewables, it may take a while to achieve carbon neutrality. In the meantime, the business can opt to offset those stubborn residual emissions. Carbon offsetting is no substitute for the efforts made to cut energy consumption and CO_2 emissions; rather is it an ancillary activity.

Carbon offsetting is therefore an essential factor in financing energy transition and limiting global warming to 2 degrees.

France's *Autorité des marchés financiers ("AMF")* has drafted a definition of offsetting designed to help investors better understand the concept: *" The emission reductions and sequestrations allowed by a project correspond to the difference between emissions and absorption over the project's lifetime and those that would have resulted had the project not been put in place, based on a baseline scenario. Once they have been formally approved, carbon projects can place a value on emission reductions and absorption by issuing carbon credits, which reflect the carbon savings made by the project and can be sold on carbon markets..".*

> *Voluntary carbon offsetting seeks to neutralise those activity-generated emissions that cannot be completed eliminated.*

WHICH MAJOR STEPS IN CARBON OFFSETTING MUST A FUND COMPLY WITH?

To implement a carbon-offsetting mechanism, a fund should proceed as follows:

1 Calculate its Carbon Footprint

This phase consists in evaluating the level of CO_2 emissions of the fund that is to be offset. A portfolio's carbon footprint is reflected in the level of CO_2 emissions generated by companies in which the fund invests in proportion to its holding. This means, for example, that a fund that holds 1% of a company is seen as "emitting" 1% of that company's emissions.

A signatory to the Montreal Carbon Pledge of 2015, Candriam has, every year since, published the carbon footprint of all of its SRI funds, whose footprint is, on average, 47% lower than their respective benchmark market footprints!

2 Selecting carbon offset schemes

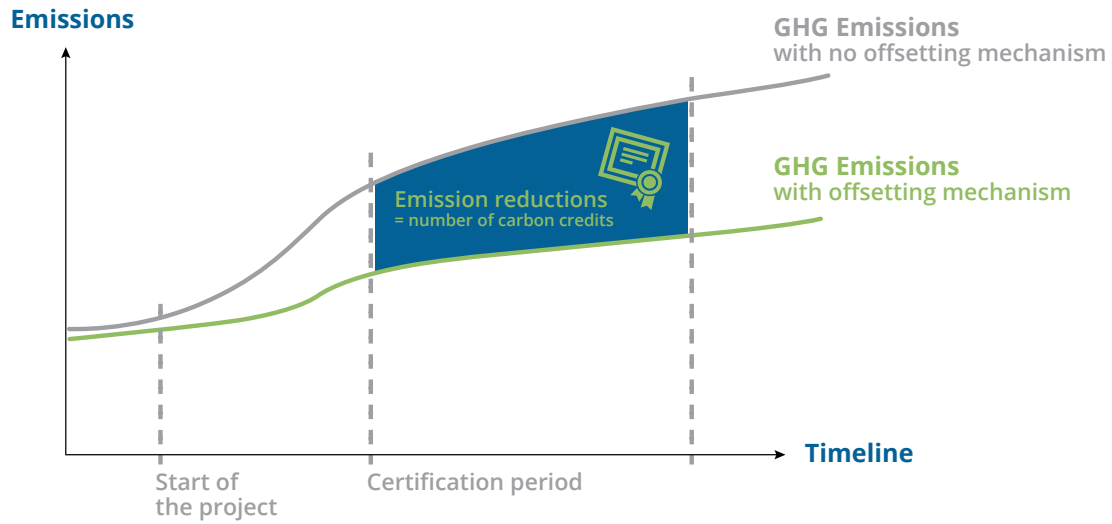
Here, we have an embarrassment of riches: renewable energies, energy efficiency, reforestation, waste management, ... It is therefore important to carefully select only projects that meet our objectives, in terms of value, level of intermediation, ...

3 Operational implementation

Once a project has been selected, the modus operandi comprises:

- The payment made to an operator, an intermediary specialised in carbon offsetting who grants us access to many projects;
- Registration of the carbon certificates on behalf of Candriam in a national register;
- The "cancellation" of carbon credits, which involves having the registrar withdraw carbon credits from the market in order to prevent their subsequent disposal/resale.

REFERENCE SCENARIO



Source : www.info-compensation-carbone.com/les-projets-sud/

N.B., each company's Scope 1 and 2 emissions are taken into account, in other words, its direct emissions (Scope 1) and the indirect emissions generated by the electricity, heat or steam imported for the company's Scope 2 activities. The methodology used for the calculation is the methodology per amount invested.

(1) Copyright 2014 | Montreal Pledge : The Pledge was launched on 25 September 2014 at PRI in Person in Montréal, and is supported by the Principles for Responsible Investment (PRI) and the United Nations Environment Programme Finance Initiative (UNEP FI)."

IS THIS NEW MARKET REGULATED ?

HOW CAN CO_2 EMISSION REDUCTION AND PROJECT QUALITY BE VERIFIED?

The market is not regulated but there are labels that, governed by very strict rules based on 4 clearly defined criteria, guarantee project quality:

1 Measurability:
GHG savings occasioned by the project have to be **measurable**.

2 Verifiability:
annually, an independent auditor audits and validates the project's CO_2 emissions and ensuing savings. The auditor, accredited by organisations such as the Board of Directors of the United Nations' Framework on Climate Change, drafts a periodic verification report certifying that the project effectively reduces or sequesters a teq CO_2 annually.

3 Sustainability:
the project should have a minimum lifespan of 7 years.

4 "Additionnality":
the project has to prevent GHG emissions in relation to a **reference situation**. The project lead also has to show that his project could not have been implemented without funding derived from the sale of carbon credits.
Example: almost 80% of India's electricity production comes from coal-fired power plants, which, to produce one megawatt hour (MWh), emit an average 820 kilos of CO_2. This is the baseline scenario. An electricity-production project in that same country based on photovoltaic panels emitting an average 48 kilos of CO_2 for a similar production level thus enables a reduction of around 772 kilos of CO_2 equivalent.""
NB., the reference changes from one country to another and depending on its energy-production mix: hydraulic, nuclear, ...

THE LABELS

There's no shortage of certification standards. Among the best-known are the Voluntary Carbon Standard, the Gold Standard and the REDD. They all vouch for the effectiveness of the project's carbon reduction efforts and for its compliance with the four aforementioned criteria. Carbon credits can only be issued by these organisations post-approval of the verification and audit reports.

WHICH VARIABLES HAVE A BEARING ON THE PRICE OF A PROJECT?

As with all markets, carbon-credit prices vary, and quite understandably so, depending on different factors:

- **Project technology / classification** (forestry, renewables, energy efficiency, water access, ...). Reforestation projects are usually more expensive.
- **Co-benefits of the project:** projects (apart from carbon reduction) that bring other benefits (socioeconomic and environmental) to the local populations usually cost more.
- **Certification standards:** registration costs, project follow-up costs, audit costs, etc., vary depending on the standard chosen and on any additional norms such as the Social Carbon or CCBA standards, which certify the co-benefits of the project.
- **Project size:** projects are either micro, small, classic or large-scale. Usually, micro-project carbon credits are more expensive, as they generate a lower credit volume (the cost price per tonne exceeds, in particular, the fixed certification costs).
- **The geographical location of the project:** some countries are more popular than others with clients: as mentioned above, cutting the CO_2 emissions generated by electricity production is easier in India than in France.
  In certain highly popular countries, the law of supply and demand strongly impacts the price. NB., other factors related to geographic location influence the price. Some countries, for example, lack the infrastructure or resources to set up projects.
- **Purchased volume:** understandably, the higher the volume purchased, the more competitive the price. The project lead can more easily sell heavy volumes of credits than he can a pile of small transactions. This makes the prices on offer more attractive.
- **Committed duration:** to ensure the sustainability of their projects, project leads often look for the buyer's commitment to acquiring the same quantity of credits for the same project over time (at least 3 or 5 years). The longer the commitment, the more seductive the price.
- **The vintage:** this is the date as of which CO_2 emissions started to drop. Even if some participants say that older projects should be less costly, the difference is becoming negligible. The fact that a CO_2 emission remains for several years in the atmosphere is, on the contrary, supportive of older projects.

STAKEHOLDERS IN CARBON OFFSETTING

- The project **developer** implements the project.
- The project **lead** assumes the financial risk.
- **The operator** has an important role in that he is the one who purchases the carbon credits from project leads before selling them on to the final clients.
- **The carbon auditor** audits and validates the quantity of project-related emission reductions achieved.
- The **standard** certifies that the project's carbon credits meet specific criteria and that each project is issued its own **quality labels**.
- The **register** is an accounts-based system that can be used for the **tracking and transparency** of transactions. The register records all purchases, sales and cancellations of carbon assets, and can therefore check that carbon credits are sold only once, thus guaranteeing their **uniqueness**.
- The **final client** buys carbon credits to offset his own emissions or, in the case of a fund, his holdings.

IN WHICH COUNTRIES ARE THESE PROJECTS BEING ENACTED?

Funded projects are usually implemented in developing countries. This is due to the predominance of historical Kyoto Protocol CDM (Clean Development Mechanism) offset projects. As projects in these countries have a considerable impact in terms of cheaper CO_2-emission reductions, the projects help them adopt energy-efficiency measures and their own means of electricity production.

Although most projects have admittedly taken place in developing countries, carbon certificates can be associated with projects implemented in industrialised countries, of which France is one of the most advanced. In April 2019, the Minister for Ecological Transition launched the low-carbon label, which certifies voluntary projects designed to reduce GHG emissions and additional carbon stockpiling in locally promoted sectors (agriculture, forestry, etc.).

HOW DOES CARBON NEUTRALITY RECONCILE WITH THE OBJECTIVES OF YOUR ESG MANAGEMENT STRATEGY ON THE SUBJECT OF CLIMATE CHANGE?

Our strategy involves investing in companies that offer solutions to the major climate-change challenges, especially in sectors linked to the development of renewable energies, electricity storage and energy efficiency that would enable a maximum reduction of CO_2-emission levels.

That said, investing in companies that offer solutions to the fight against global warming does not mean automatically investing in non-CO_2-emitters. Even the manufacture of solar or insulation panels (which, during their lifespan, prevent a huge volume of CO_2 emissions) is itself a source of CO_2 emissions, especially via the electricity on which manufacture depends.

Our ambition: offset this carbon footprint by financing certified green projects in order to offer a twice-as-green management style, one that is carbon-neutral while investing in energy-transition-supportive schemes.

WHICH PROJECTS HAVE YOU DECIDED TO INVEST IN?

We have chosen projects certified by **Gold Standards**[2], a standard originally created by WWF and a pool of NGOs, academics and private-sector players. This label applies not only to CO2 emissions, but also seeks to benefit a country's socioeconomic development and involve the local population in offset projects.

All Gold Standard-certified projects have to include sustainable benefits that far exceed their mere environmental impact, through, for example, the positive effect they have on local communities.

To fall into line with our portfolio investment choices, we have elected to finance 3 projects: renewable energy, energy efficiency and reforestation.

We are going to commit to these projects for 3 years. Such an engagement will help us give project developers increased visibility on their project's viability.

Gold Standard®

Climate Security & Sustainable Development

(2) © Copyright 2019 GOLD STANDARD: see www.goldstandard.org

south pole

CANDRIAM'S OPERATOR

Out of all available operators, we have asked South Pole to partner us in our carbon-offsetting journey. South Pole is an old hand in offsetting, in which it has been involved since 2006. With more than 700 projects world-wide, South Pole offers an extensive range of top-quality offset projects..

EVERBRIGHT LANDFILL GAS

CHINA

This project captures the **methane emissions** from a landfill and uses it for **clean power generation**, improving the lives of locals and contributing to sustainable development in China.

24 992 MWh
of sustainable electricity exported on average annually to the grid

24 jobs
created permanently for project operation

Waste
management promoted by this project

136 794 teqCO_2
reduced annually on average

THE CONTEXT

In China, more than 80% of total electricity is generated from coal-based power plants. With China's growing cities and economies, not only is the supply of energy and goods becoming a logistical challenge, but so is its disposal and the implications of growing landfill. One example of this issue is the decomposition of organic materials in landfills, which generates large amounts of methane, a greenhouse gas 25 times stronger than CO_2.

THE PROJECT

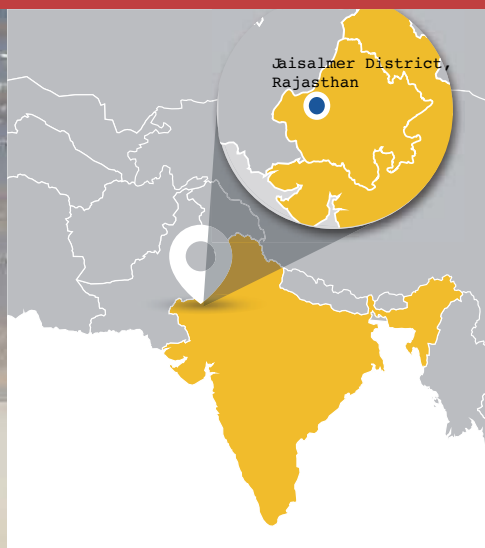
To keep methane from damaging our climate and to make use of its potential as a sustainable energy source, this project has set up a landfill gas collection system to manage both solid waste disposal and local energy supply in a sustainable way. The landfill is covered, and via wells and pipes the captured methane is then fed into gas processing systems and finally burnt in four incineration units, each with an installed capacity of 1.25 MW. In the end, the generated electricity is fed into the grid to supply the inhabitants of Suzhou with clean, non-fossil energy.

THE BENEFITS

Beyond contributing to climate action, this project benefits local communities in a range of ways. The project has created 20 regular employment positions in the plant operation and during the construction period, up to 54 people were employed. The project owner offers jobs for local people and all workers receive regular training. Trained local employees had the opportunity to exchange experiences with representatives from Australia and New Zealand, to learn from each other and support international technology exchange. The project owner has also provided funding for a Master course of Engineering with the School of Environmental Science and Engineering of Qinghua and a scholarship program for the local business school to support higher education in the region.

GODAWARI GREEN ENERGY SOLAR THERMAL POWER

INDIA



60 local people
hired from surrounding communities to assist with upkeep of facilities

118 866 MWh
of renewable energy generated on average annually for India's Combined Regional Grid

109 people
currently employed in management, sales, technician work and administration, who receive extensive training in project technology

Solar thermal 'parabolic trough' technology transferred to India; an environmentally sound, state-of-the-art technology

113 160 teqCO_2
reduced on average each year

THE CONTEXT

India is the world's second largest country by population, beaten only by China – and it is rapidly catching up. As its developing economy strengthens further and rapid population growth continues, India's energy needs are rising. While the share of renewables in India's energy mix is growing, coal still accounts for over half of its electricity production.

THE PROJECT

Located in Jaisalmer District in North India's Rajasthan State, this large-scale solar thermal power project helps satiate India's growing energy demands. The 50 MW-capacity solar thermal plant uses parabolic trough technology to generate almost 119,000 MWh of clean energy for the Combined Regional Grid annually, further diversifying India's electricity mix away from fossil fuels.

THE BENEFITS

On top of supplanting fossil fuels with clean electricity to reduce emissions, the project proponent commits 2% of Carbon Emission Reduction (CER) sales to community welfare and sustainable development projects. The social benefits of this include local employment opportunities that alleviate regional poverty, as well as better roads and improved basic infrastructure. The project also contributes to the transfer of environmentally sound, state-of-the-art thermal solar power generation technology in India, and encourages further investment in the renewables industry.

TROPICAL MIX LAND RESTORATION

PANAMA

Sustainable income sources from sale of certified tropical timber, carbon credits, cocoa and seed materials

Environmental education programmes and training

150+ jobs
created for locals in project operations, including scouting and fire prevention

1,3 million teqCO2
mitigated over the project lifespan of 30 years

13 385 ha
of land protected and restored by the project

+ de 7,5 millions
trees planted to date

THE CONTEXT

Panama is losing more than 1 percent of its primary forest cover every year. Once a rich biodiverse forest, the project area was converted into pastoral agricultural land for intensive cattle ranching, destroying the existing ecosystem.

THE PROJECT

The primary aim of the project is to reforest the 13,385 ha with mostly native tree species reestablishing a mixed tropical forest. The project areas are divided between several fincas (small-scale farms), which are all managed using the same forestry management plan. The project also establishes areas that are used for the fair production of organic cacao and sustainable timber; the forest management received FSC certification (Forest Stewardship Council), the cocoa production is UTZ certified.

THE BENEFITS

Thanks to its sustainable management, the project ensures biodiversity protection and ecosystem restoration while providing opportunities to locals for sustainable livelihoods. All the 150 project employees receive a wage above the legal minimum, including health insurance and a pension fund. They also have optional benefits including life insurance, training and further education and for the poorest quarter of the local population, school fee subsidies are available through the project.

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