

# Environmental and economic benefits resulting from citizens' participation in CO<sub>2</sub> emissions trading: An efficient alternative solution to the voluntary compensation of CO<sub>2</sub> emissions

Olivier Rousse

*LASER-CREDEN, Research Center on Energy Economics and Law, Faculty of Economics, University of Montpellier I, Av. de la Mer, Site de Richter, CS 79606, 34960 Montpellier Cedex 2, France*

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## Abstract

Over the last few months in the emerging and lucrative carbon project market, a growing number of organizations have proposed to offset citizens' greenhouse gas emissions. The target of these carbon-offset initiatives is to satisfy the increasing demand of individuals wishing to take part in the fight against climate change. In this paper, we review and criticize these carbon-offsetting programs in general terms. We then propose an alternative that, in our opinion, should prove to be a better solution for citizens who are willing to pay for protecting the environment. This alternative is to organize citizens' participation in carbon emissions trading on a large scale in order to purchase and retire (destroy) CO<sub>2</sub> permits. To do so, a benevolent Regulator or non-governmental organization must correct certain CO<sub>2</sub> emissions market failures; this particularly concerns the high transaction costs, which represent an entry barrier and prevent citizens from purchasing and withholding permits. Based on theoretical findings, we demonstrate that implementing citizens' participation in emissions trading is an economically efficient and a morally preferable option.

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## 1. Introduction

Due to the increasing number of information campaigns about the causes, current impacts and future risks of climate change, the percentage of natural and artificial persons with a real energy and environmental awareness has strongly increased over the last few years. Due to personal and economic issues, more and more people are learning about and adopting good environmental behaviors. Amongst these people, some are convinced, whether rightly or wrongly, that they are already doing their maximum for reducing their impact on the environment. These people may wish to do more for the planet and are willing to pay for this purpose. As a result, today, a real demand for pollution control can be identified and the major priority is to satisfy it in a cost-efficient manner.

Although various solutions already exist, they are unsatisfactory from an efficiency and ethical point of view.

The purpose of this paper is to describe a cost-efficient solution for satisfying the pollution control demand from natural and artificial persons, who are willing to pay for reducing the overall level of greenhouse gas emissions. This solution may be summarized as a pollution control service provided by the government or a non-governmental organization (NGO) consisting in buying and then withholding CO<sub>2</sub> emission quotas. In other words, we propose to facilitate the access of pollution victims to CO<sub>2</sub> emissions trading. This type of system firstly involves gathering purchase demands for a small amount of emission permits, then trading by bilateral agreement or on a carbon exchange, and finally withholding these permits from the market.

Before describing this solution, we will present and criticize the recent carbon-offset programs, which have emerged over the last few months from an economic point

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*E-mail address:* [olivier.rousse@univ-montpl.fr](mailto:olivier.rousse@univ-montpl.fr)

of view. This description will facilitate the understanding of our alternative solution and its advantages.

## 2. Carbon-offset initiatives and their drawbacks

Over the last few months, the number of carbon-offsetting organizations has increased significantly. These initiatives started in the United States and are now being carried out in Europe. The aim is to gather a certain capital in the form of donations and to develop emission reduction projects. Potential donators, who possibly have already adopted good environmental behaviors, are informed by carbon-offsetting funds that carbon compensation may represent an additional way of fighting against climate change. This could be done by reducing carbon emissions in countries where abatement costs are lower. From a marketing point of view, carbon offsetting enables donators to become climate neutral or carbon neutral.

### 2.1. Definition of carbon offsetting

At this time, we do not know how many offsets have been sold for carbon neutrality purposes but it is clear that the retail offset market is growing rapidly. Today, about 30 carbon-offset organizations<sup>1</sup> exist in the following industrialized countries: Germany, Australia, Canada, the United States, France, Ireland, the Netherlands, the United Kingdom, Sweden and Switzerland. Detailing each of these initiatives would be too long. Consequently, we have decided to firstly describe the main steps leading to donations, then to give an overview of the various carbon-offset programs and finally to provide a critical analysis thereof.

In the first place, the donation process consists in informing the customer about the climate change issue<sup>2</sup> and suggesting ecological actions enabling to reduce consequences for the climate, such as energy savings, using alternative transportation solutions, waste reduction, etc. In the second place, carbon offsetting is presented as a solution for becoming carbon neutral. Thus, the customer is able to calculate his own CO<sub>2</sub> emission rate using a carbon calculator, which takes into account various pollution sources (cars, airplanes, heating, etc.). At the end of the calculation process, the customer can pay a certain amount of money for the compensation of his emissions and then receive a carbon-offset certificate.

<sup>1</sup>Action Carbone, Atmosfair, Carbon Clear, Carbon Credit Solutions LLC, Carbon Footprint, Carbon Planet, CarbonAided, Carbonfund, Cleanairpass, Climat Mundi, Climate Balance (EDF Energy), Climate Care, Climate Friendly, CO2 Solidaire, D. Suzuki Foundation's Carbon Neutral Program, DriveNeutral, DrivingGreen, EcoNeutral, Green Tags, Greenfleet, GreenSeat, Growaforest, Klimatneutral, My Climate, Native Energy, Offsetters, The Carbon Neutral Company, The Climate Trust, Pembina Institute for Appropriate Development, Sustainable Travel International, Targetneutral (BP), TerraPass.

<sup>2</sup>For example, presentation of the greenhouse effect phenomenon, existing scientific reports, risks and forecasts of ecological and socio-economic impacts.

Based on this main operating principle, practices may vary from one initiative to another. Donor prospecting (donors include individuals, firms, public organizations) is mainly carried out via Internet, and sometimes via information campaigns in the press, on television and also through partnerships with, for example, car manufacturers, traveling agencies, tour operators, etc. As regards the legal status of these entities, they may either be NGOs (associations and foundations) or for-profit organizations (firms), the percentage of non-profit organizations being equal to two-thirds of the total number of organizations. The amount of CO<sub>2</sub> emissions to be offset is calculated based on road transport, air transportation, domestic heating and even on the entire climate footprint of the relevant natural or artificial person. Thus, “car packages”, “airplane packages”, “housing packages” and even “event packages” can be identified. For instance, the FIFA World Cup or even the Oscars Ceremony have chosen to offset their CO<sub>2</sub> emissions. Among current organizations, about one-third is specialized in offsetting emissions from a single type of source, for example, cars. Other structures propose to offset all types of emissions. Moreover, there are also differences according to the type and geographical location of the projects being funded. The projects that are financed include, for example, renewable energies (wind, solar, biomass and hydro), energy efficiency, forestries (reforestation) and waste management. Most initiatives have a diversified portfolio of projects. Most of the time, the donor cannot choose the project that he wishes to finance but some programs propose this possibility. Regarding the geographical localization of the projects, American and Australian organizations seem to favor domestic projects whereas European structures are more interested in implementing emission offsetting projects in developing countries. Lastly, some organizations develop other activities such as consulting services,<sup>3</sup> emissions trading, climate friendly products sales and even advertising campaigns for their partners (energy suppliers, cars, banks, etc.).

### 2.2. Negative aspects of emission offsetting

Considering the great number of practices and initiatives, the following discussion and critics do not concern a specific project. The aim of this note is to provide a general overview and not condemn a particular structure, as this would require carefully reading the general sales terms of each initiative. Based on a general point of view, our criticism shows that certain initiatives could be economically inefficient and involve ethic and moral issues.

Firstly, some donors are unfortunately not familiar with Kyoto mechanisms and carbon finance, and, consequently, they are not aware that carbon-offset sales concern avoided

<sup>3</sup>Consulting services proposed to firms or public entities by emissions offset organizations include training and presentations, greenhouse gas emissions accounting and reporting, feasibility studies of emission reduction projects, marketing and environmental communication.

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