

Could benefits overcome costs when adopting low carbon transport systems? An estimation of co benefits and regional integration in America's South Cone.

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Abstract—America's South Cone countries (Argentina, Brazil, Uruguay and Paraguay) present alternative energy sources that, if well explored, should be viewed as a direct way to achieve a sustainable development, increasing welfare and environmental protection. Policy making should aim more than just achieve economic feasibility, but also catalyze additional benefits that can possibly rise from renewable sources adoption. This work aims to evaluate such benefits for the South Cone sub region, considering some policy options in the transportation sector due fuel substitution. The objective is to estimate changes in three main dimensions: (1) Environmental (GHG emissions); (2) Economic (Fuel Expenses); (3) Societal (Job creation). Then, a variety of policy scenarios will be defined and simulated for a midterm time period. It is expected that hidden co benefits of renewable energy adoption in the South Cone will raise interest, especially by strengthening regional integration and inverting the traditional idea that costs overcome benefits when adopting modern technologies fueled by renewable resources.

Keywords—Co benefits, Renewables, South Cone, Transport, biofuels

1. Introduction

The need for changes in the economic and social development model towards a sustainable development requires innovative initiatives and policies. Such policies should create incentives to agents for a self sustained process of development. America's South Cone countries (Argentina, Brazil, Uruguay and Paraguay) present alternative energy sources that, if well explored, could be viewed as a fast lane to achieve a sustainable

development, increasing welfare and environmental protection. Depending on the kind of policy adopted, a different future pathway would be determined, and if the environmental agenda is the guiding one, renewable energy sources would be preferred. Biofuels are viewed as an available and concrete alternative for energy consumption, specially at the transport sector, which is highly dependent on oil derivatives. However, in most of the cases incentives should be created for production and consumption of such fuels in order to overcome in the early stages economic disadvantages and eventual barriers (regulatory, lack of infrastructure, etc.) which do not exist in the case of established fuels. The South Cone region presents remarkable experiences of policies in this direction. With a great agricultural potential, national energy security could be strengthened, while creating local jobs and mitigating greenhouse gases (GHG).

This paper aims to evaluate potential benefits from biofuels consumption and production in the South Cone sub region. To overcome conventional cost-benefit analysis limitations, alternative variables are selected for policy decisions such as job creation, GHG emission mitigation and impact in national fuel expenses.

The main objective is to reveal potential benefits and their distribution among those countries in order to promote diversification in fuel portfolios and discuss trade integration in the South Cone.