

Transportation and Greenhouse Gas Emissions

Exploring Opportunities for the Clean Development Mechanism in Chile



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Transportation and Climate Change

The transportation sector is responsible for approximately 25 per cent of carbon dioxide (CO₂) emissions worldwide. This share is increasing annually in many countries, particularly those in the developing world. In Chile, for example, transportation represents the second largest source of greenhouse gas (GHG) emissions.

2001 Global CO₂ Emissions by Sector (IEA, 2003)

Transportation	24%
Electricity and Heat Production	39%
Industry	18%
Other	19%

Source: *CO₂ Emissions from Fuel Combustion 1970/2001 – 2003 Edition*. Paris, IEA/OECD.

Growth in the transportation sector and in related emissions is projected to rise in Santiago as in many other urban centres. Efforts to curb the rate of growth—for climate change-related reasons as well as for other local co-benefits—are key components of sustainable development.

The primary entry point to the Kyoto Protocol for developing countries remains the Clean Development Mechanism. Credit for emissions reduced in the transportation sector could conceivably contribute to a more sustainable pattern of growth in this sector. However, of the methodologies and projects currently in the CDM pipeline, none address the key issue of transportation demand.

Project Overview

Current and projected future growth in the transportation sector makes the issue of monitoring and reducing greenhouse gas emissions a concern for developed as well as developing countries. One of the options available to policy-makers in developing countries interested in reducing transportation emissions is the Clean Development Mechanism (CDM). To date, however, the transport sector has received less attention than other sectors because of the challenges associated with these projects. The International Institute for Sustainable Development (IISD), Climate Change and Development Consultants (CC&D) and the Center for Clean Air Policy (CCAP) are undertaking a joint project to analyze this issue.

The project examines possible scenarios for using the Clean Development Mechanism (CDM) as a tool to promote sustainable development in the transportation sector. Working with Chilean government agencies, private sector stakeholders and non-governmental organizations, the project is developing methodologies for assessing potential transportation-related GHG reduction initiatives eligible under the CDM.

The unabated growth of the transportation sector in developed and developing countries highlights the importance of monitoring and reducing greenhouse gas emissions for a wide range of reasons. In Chile, without mitigative efforts, the total number of tonnes of CO₂ from transportation is projected to almost double by 2020. The Clean Development Mechanism (CDM)



offers the possibility of increasing funding for transportation projects, enhancing local planning and project evaluation capacity, and expanding technology transfer opportunities.

This project addresses technology and demand-side solutions to transportation challenges, and examines how the CDM may contribute to more effective sustainable transportation initiatives in the future. It delves into key CDM questions including project baseline, additionality, methodology, monitoring and leakage of emissions from the transportation sector. It also aims to shed light on how a range of transportation projects fits with the current CDM and what creative solutions exist for encouraging the use of CDM in this sector in the future (policy or sector-wide initiatives).

Case Studies

Technological and demand-side approaches to GHG reduction from transportation are included in the three case studies:

1. **Bicycle infrastructure** – examining the methodological challenges involved in baseline, measuring and monitoring emissions reductions from potential new bicycle lanes, as well as from complementary policies such as bicycle storage, and encouragement of a shift from other transportation modes.
2. **Bus technology switching** – examining the potential GHG benefits from switching bus technologies in Santiago (e.g., diesel to hybrid electric), and analyzing the “CDM-ability” of this type of initiative given current guidelines. The methodologies for this study are tied to the new system-wide Transantiago plan and the project is working closely with stakeholders from government as well as the private sector.
3. **Location efficiency** – examining the GHG impacts from particular land development strategies aimed at



reducing travel demand and the potential use of the CDM to attract financial resources to “location efficient” urban development. The ultimate goals of this case study are to identify opportunities for “transit-oriented development,” quantify the travel behaviour impacts of those developments and estimate the net impacts on transportation greenhouse gas emissions of the developments if they were to be realized. The study also identifies how the CDM could be used to attract financial resources to urban development projects of this kind, in order to make them more attractive investments and encourage their associated co-benefits.

Cross-Cutting Issues

Despite the potential offered by the CDM, projects in the transportation sector have been slower to develop than those in other sectors—due in large part to the difficulty of fitting transportation into the current CDM rules and modalities.

The project addresses a number of cross-cutting issues that have an impact on transportation CDM projects:

- a) **Structure of projects:** In practice, how can the CDM encourage better transportation projects? What are the mechanics of project design options?
- b) **CDM Projects vs. Sectoral CDM:** Can individual CDM projects be part of broader sectoral policies? Are transportation sector-wide CDM initiatives a viable option?
- c) **Development Dividend:** How can we account for local development goals in the price per tonne of carbon in transportation projects? Can we use Official Development Assistance creatively to encourage GHG reductions in the transport sector that are also CDM eligible?



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Join the Discussion: International Transportation and CDM Workshop

The Chilean government welcomes participants to Santiago to share in the results of this project and to expand dialogue on the crossover of climate change, transportation and the CDM.

When? August 25–27, 2004

Where? Santiago, Chile

Who? The international workshop will include key participants from governments and NGOs working on the issues of climate change, transport and the CDM from developing and developed countries. Limited travel subsidies are available for developing country participants.

Why? The primary goal of the workshop is to bring members of the transport, development and climate change communities together to advance the discussion of the fit between the Clean Development Mechanism and the transport sector with a focus on the following:

- bringing international experience and expertise to bear on the cutting edge analysis currently being conducted as part of the transport and CDM project in Chile;

- furthering discussion on limitations of the current CDM rules, and what types of creative solutions might better facilitate sustainable transport initiatives; and
- providing constructive suggestions to policy-makers and transport planners on how to incorporate emission reductions considerations into transportation planning in both developing as well as developed countries.

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