

Getting on Track: Finding a Path for Transportation in the CDM

Executive Summary

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Executive Summary

This report synthesizes the findings of a study undertaken by the International Institute for Sustainable Development (IISD), Climate Change and Development Consultants (CC&D) and the Center for Clean Air Policy (CCAP). This work was funded by the Canadian International Development Agency (CIDA), in cooperation with a number of government agencies in Chile, principally Transantiago. The project examines possible scenarios for using the Clean Development Mechanism (CDM) as a tool to promote sustainable development in Chile's transportation sector. Mobility challenges, strong modelling capacity, commitment to CDM, and excellent data sets all made Chile an ideal location in which to test transportation solutions.

Globally, the transportation sector is responsible for almost one quarter of carbon dioxide emissions. This share is increasing annually, particularly in developing countries where the urban population is expected to double by 2030. This unabated growth, coupled with the many other side effects of growth in transportation including air pollution, health impacts, congestion, noise pollution and traffic accidents, underscores the importance of monitoring and reducing emissions from the transport sector.

The CDM offers the possibility to increase funding for sustainable transportation projects, enhance local planning and project evaluation capacity, and expand technology transfer opportunities. Despite their emission reduction potential, however, projects in the transportation sector have been slower to develop than those in other sectors. Such projects, especially

demand-side initiatives, face significant methodological and financial barriers. This project analyzed three case studies that examined how the CDM may be used to address both technological and demand-side solutions for reducing emissions from Santiago's transportation sector.

The first case study involved a *bus technology switch* and examined the potential GHG benefits of switching bus technologies from diesel to hybrid and analyzed its feasibility as a CDM project. The second case study involved *bicycle initiatives* and assessed the methodological challenges associated with developing bike-ways and networks as CDM projects. The third case study focused on *location efficiency* and involved the measurement of change in travel demand (and GHG reduction) from encouraging infill development, and discusses how the CDM could be used as an incentive for more location efficient urban development.

By delving into the key questions of the CDM including project baseline, additionality, methodology, monitoring and leakage, the case studies shed light on how a range of transportation projects fit within the current CDM and how they might work better in the future, and where other policy approaches may be appropriate. Taking the lessons learned from these case studies along with those that emerged from the International Workshop,¹ and from discussions from other professionals in the field, conclusions were developed regarding how transportation projects currently fit into the CDM framework and potential changes for post-2012. The main conclusions include:

¹ The project partners and the Government of Chile hosted an International Workshop on Transportation and the CDM in August 2004 (Presentations and materials are available on the project Web site at: <http://www.iisd.org/climate/global/ctp.asp>)

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The CDM should accommodate travel demand reduction efforts as well as policy-based and sectoral approaches

- If the CDM is to have a meaningful impact on sustainable transportation it must contribute to fundamental changes in vehicle purchases (e.g., encouraging higher fuel efficiency), fuel use (e.g., lower carbon fuels) and, most importantly, travel behaviour (i.e., slower growth in demand for motorized trips).
- Demand-side projects address the root of the transportation problem and have multiple co-benefits including air, health, noise, etc.
- Policy-based and sectoral approaches can have a major impact on emissions although they may introduce additional uncertainty, especially in forecasting GHG reductions.
- Given the low tonnage and many co-benefits of transportation projects, a unilateral approach may be more suitable for projects focused on bicycle initiatives, public transit or land use.
- Sectoral approaches have the potential to reverse the “perverse incentive” that can dissuade developing countries from pursuing GHG reduction policies and can also reduce emissions “leakage” concerns due to their comprehensive nature.

The project-based framework required by the current CDM rules is limiting and makes quantification complicated.

- Transportation sector emissions come from many small sources, (i.e., individual vehicles) that tend not to be governed or monitored by a central agency, but dependent on personal choice. Multiple small sources prove challenging to capture at the project level.
- The project-based approach may miss many important transportation emissions reductions opportunities, such as fuel economy programs, renewable fuel standards and comprehensive “smart growth” efforts (location efficiency, transit and non-motorized transport policies).
- Changes that could potentially deliver substantial reductions, for example by promoting location efficient development, are too complicated to capture in the required project-based framework.
- Non-motorized transport (NMT) projects, such as individual bikeways, do not work under the project-based framework. A comprehensive bicy-

cle network may be feasible, but would likely fit better in a sectoral or policy-based approach.

- In the transportation sector particularly, requiring project developers to concentrate on what can be confidently quantified leads to discounting benefits from projects with the kind of long-term impact on travel demand that the mechanism aims to promote.

Consideration of emissions reductions should be integrated into long term transportation planning.

- Any project based approach to emission reductions (and likely sectoral and policy approaches if and when they emerge in the future) necessitates measurement of indicators (emissions, trips, mode share) against a business-as-usual projection.
- This measurement requires a clear vision of future transportation plans and their possible related emissions. Therefore, local processes that clarify transportation plans for the future, such as Transantiago, contribute to facilitating this process.

The CDM is only one of many tools to reduce greenhouse gas emissions from the transportation sector.

- Political decisions to channel resources to land use planning, public transit, pedestrian and bicycle infrastructure are more important for long-term sustainability.
- In order to impact transportation emissions in the long term, local initiatives should be supported by international efforts, (e.g., bilateral ODA, GEF funds, etc.).
- Climate change (both mitigation and adaptation) and transportation should be more fully integrated into Poverty Reduction Strategic Papers (PRSPs), as well as into the funding frameworks of the IMF, World Bank, Regional Development Banks and others. The CDM may be used as leverage in cooperation with these other funding sources.

Most transportation projects do not fit well within the CDM as it currently functions.

- Given the high costs associated with transportation projects and the variety of co-benefits driving such investments, it is difficult to prove that the CDM, as it is currently designed, pushes many transportation projects over the margin into feasibility.

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- Although they have the potential to contribute positively to long-term sustainability goals such as travel demand reduction, demand-side projects (NMT, land use, transit) don't fit well with the current structure of the CDM. This is primarily due to uncertainty over implementation of future transport plans, complexity with modelling travel/emissions impacts of policies and monitoring challenges.
- Projects that do fit under the CDM (such as fuel/technology switching) are often characterized by low emissions and typically will have minimal impact on reducing long-term emissions growth.
- Restrictive additionality rules lead to fewer transport projects being put forward for consideration.

Chile represents an ideal testing ground for transportation CDM projects given that its mobility issues and air quality problems are quite similar to other developing countries; its transportation data and modelling capacity is strong; and the Chilean government has a strong commitment to the CDM and addressing climate change.

Despite Chile's high-quality data, advanced models and experienced professionals, transportation projects such as those explored in the case studies, particularly demand-side initiatives, face significant methodological challenges and uncertainty. These challenges could pose insurmountable barriers in the vast majority of developing countries that have poorer data, weaker models and less experience than Chile in modelling and analyzing transportation and land use projects.

Given that transportation sector emissions come from many small sources (i.e., individual vehicles), the

impact of projects will be negligible unless large numbers of vehicles, litres of fuel or passengers are affected. The CDM was designed to address specific projects with quantifiable and verifiable GHG reductions. Yet, this project-based approach may miss many important transportation emission reductions opportunities, such as fuel economy programs, renewable fuel standards and comprehensive "smart growth" efforts (e.g., location efficient land use, transit and NMT policies).

Developing countries need an integrated approach in which transportation is part of a larger focus on sustainable development that also addresses housing, land use and economic development. Current infrastructure, investment and development decisions have a major impact on future emission rates; implementing sustainable solutions now can advance multiple public goals. Short-term benefits (e.g., air quality and health improvement, congestion relief) can help to make long-term sustainability solutions more politically viable. To advance these and other local sustainability goals through CDM, transportation projects and policies must fit better under the parameters of the mechanism.

In the post-2012 context, allowing for policy-based or sectoral CDM could better accommodate system-wide changes such as comprehensive transit and land use strategies, fuel economy standards and renewable fuel standards. In order to ensure long-term impact on transportation emissions, CDM initiatives will need to leverage international assistance through ODA, development banks, and other funding agencies and programs, and work hand-in-hand with local leadership to achieve this common goal.

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IISD

The International Institute for Sustainable Development contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change, measurement and assessment, and natural resources management. Through the Internet, we report on international negotiations and share knowledge gained through collaborative projects with global partners, resulting in more rigorous research, capacity building in developing countries and better dialogue between North and South.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and Environment Canada; and from the Province of Manitoba. The institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

CCAP

The Center for Clean Air Policy was established in 1985 by a group of state governors to develop and promote innovative policy solutions to energy and environmental problems. From our initial work as a key player in the development of a SO₂ trading system to help control acid rain to ongoing projects that focus on market-oriented approaches to ozone, climate change, and air toxics, we have promoted the idea that sound energy and environmental policy solutions serve both environmental and economic interests. The Center has over 15 years of experience addressing climate change, air emissions, and energy policy in ways that are both efficient and effective. The Center has been actively engaged in analyzing and advancing policies in all sectors of the economy—electricity, transportation and land-use, buildings, commercial, industrial, agriculture and forestry—as well as cross-cutting experience in emissions trading and emissions registries. For more information about CCAP please visit our Web site: www.ccap.org

CC&D

Cambio Climatico y Desarrollo (Climate Change & Development) is a Chilean-based firm specializing in the evolution of the Kyoto Protocol, including the positions of the parties and particular negotiation stances and strategies. Eduardo Sanhueza, Principle of CC&D, has participated as part of the Chilean National Advisory Committee on Global Change, and has been part of the Chilean delegation to the UNFCCC negotiations since 1998. CC&D has played an important role in building the national stands and strategies in the UNFCCC process and helping to integrate the particular interests of various members of the National Advisory Committee in the working agenda of the Convention. CC&D has also played an integral role in development of the Clean Development Mechanism (CDM), both as a source of Chile's national proposals on this matter, as well as in the negotiations on the Framework Convention. Mr. Sanhueza served as an alternate member of the Executive Board of the CDM for two terms.

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The Clean Development Mechanism (CDM) established under the Kyoto Protocol provides a unique opportunity for implementing projects in developing countries that reduce greenhouse gas emissions and promote sustainable development. As a leading source of greenhouse gas emissions, the transportation sector could play a central role in the CDM and in addressing climate change.

By delving into the key questions of the CDM within the context of the transportation sector of Chile, including project baseline, additionality, methodology, monitoring and leakage, the case studies presented in this report shed light on how a range of transportation projects fit within the current CDM. The report also examines how such projects could be better facilitated in the future, and where other policy approaches may be appropriate. Taking the lessons learned from these case studies and outcomes of an international workshop held in Chile, the report presents conclusions regarding how transportation projects currently fit into the CDM framework and potential changes for post 2012.

