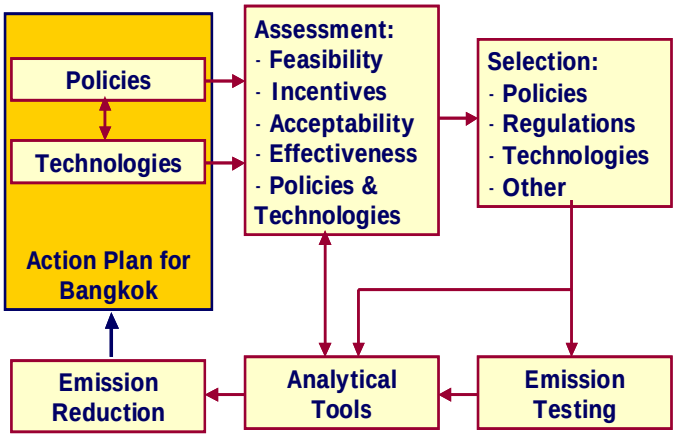
Developing Integrated Emission Strategies for Existing Land-transport (DIESEL)

A Brief Introduction

Urban transport is one of the fastest growing sectors of the developing world and air pollution due to fossil fuel combustion, resuspension of pollutants along the transport corridors has become a significant environmental issue contributing to ground level ambient pollution and to the burden of disease. Since the urban transport policies are not primarily driven by air quality considerations, the DIESEL program is aimed at focusing on in-use and gross diesel vehicle polluters in an urban fleet. This initiative is aimed at conducting a series of surveys for gross polluters, emission testing for criteria and greenhouse gases using state of the art equipment, and developing a baseline for informed evaluation of economic, social and environmental costs and benefits of management options.



As a pilot project, the DIESEL program has been initiated in the city of Bangkok, Thailand. The adjoining figure presents key project activities and the table below presents expected goals and activities initiated under this program in Bangkok, Thailand.

This project also seeks to develop a simple analytical framework – **I**nformed **D**ecision-support for **E**valuating **A**lternative **S**trategies (**IDEAS**) that can be used to analyze and visualize the impacts of various options for diesel pollution management. The primary tasks being pursued on IDEAS involve the development of an appropriate knowledge base and modeling tools relating to the analysis of diesel pollution options. A detailed framework of the project is presented here (http://www.usaep.org/pcd/aboutthepartnership.htm).

Goals	Outcome	Activities	Pilots/ Demonstrations
Improved Efficiency of the Transport System	Enhance Public Transport Encourage Walking/Biking Improve Traffic Flow Improve Driving Behavior	▪ Improve Capacity for Transport System Planning & Management ▪ Segregated Bus/Bike/Car-Pool Lane Networks ▪ Strengthening Area Traffic Control ▪ Traffic & Parking Regulation ▪ Design Codes & Guidelines ▪ Training/ Awareness-building	▪ Lab: Testing smoother driving cycles (reflecting driver behaviour, segregated lanes, coordinated signals) ▪ In-Situ: Observational survey for traffic options analysis ▪ Analytical: Model transport systems options
Reduce Emissions from In-use Vehicles	Enhance Inspection Programs Bus fleets Other vehicles Improve Maintenance Culture and Capacity	▪ Vehicle Maintenance Routine tune-ups (e.g. injector cleaning, air filter, fuel filter and oil filter cleaning / replacement) Adjusting Air-Fuel Ratio Using certified spare parts ▪ Training/ Awareness-building	▪ Lab: Testing of effectiveness of different types of tune-ups ▪ In-Situ: Test opacity, rapid loaded test for emissions, fuel efficiency survey ▪ Analytical: Model performance improvements of in-use vehicles
	Improve Technologies for Vehicles & Fuels ▪ Use Cleaner technology for in-use Vehicles ▪ Use Cleaner fuels	▪ Retrofit in-use Vehicles Oxidation Catalysts, Particulate Traps, Alternative Fuel Kits ▪ Move to Cleaner Fuels/Lube Inspections/ Reporting to Reduce Adulteration, Low S Diesel, Alternative fuels (incl. CNG/LPG), Lube substitution, Fuel additives ▪ Adjust Registration Cost ▪ Improve In-use Vehicle Emission Standards	▪ Lab: Testing of effectiveness of selected retrofit and cleaner fuel options ▪ In-Situ: Test in-situ performance of selected retrofit/ cleaner fuel option (e.g. through driver survey, periodic tests) ▪ Analytical: Model retrofit/ cleaner fuel options
Improve Technology of New Vehicles	▪ Establish Adequate New Vehicle Emission Standards ▪ Adjust Import Tariffs ▪ Establish Price/Tax incentives/ disincentives Diesel & Cleaner Vehicles Diesel & Cleaner Fuels	▪ Improve new vehicle emission standards ▪ Encourage use of improved fuels ▪ Upgrade emission control technology	▪ Lab: Tested by manufacturer ▪ In-Situ: Driver survey for new technology vehicles ▪ Analytical: Obtain performance information from manufacturers; Model new vehicle technology options