

Summary of the Second Planning Meeting for: Developing Integrated Emission Strategies for Existing Land Transport (DIESEL)

Background: The second planning meeting was held with the partners, collaborators and local agencies in Thailand on February 17, 2004 in Bangkok at the Pollution Control Department (PCD). The goal of the DIESEL program is to develop a better understanding of the factors that influence vehicular emissions and to propose cost-effective control options in the context of the political economy of developing countries in Asia. The focus for the last six months, has been on gathering information development on city specific databases and planning for the other two components.

Objectives: The objective of the second planning meeting was to provide an overview of current progress, future activities, invite comments and suggestions, and discuss the needs and specific opportunities for the current and other potential partners for their involvement in this program.

Meeting Summary: The second planning meeting was attended by 84 stakeholders with diverse interests. Participants included private bus companies, bus operator associations, traffic police, limited vehicle manufacturers and fuel oil companies, local and foreign emissions control technology providers, international agencies, and a large number of government agencies from the steering committee. While there were formal presentations, a lot of the time was devoted to discuss technical issues and provide a neutral perspective on various topics. Preliminary results on the vehicles databases and testing were presented and discussed. All the presentations will be made available at PCD, DIESEL project and CAI-Asia websites by March 10, 2004. The major observations for the meeting and follow up discussions can be summarized as follows:

1. Emissions from diesel in-use vehicles are a major issue and can be controlled by policy and technology options. Implementation of identified options is not easy. The DIESEL program and specifically the Bangkok Pilot represents a unique opportunity for the stakeholders to collaborate and agree on unified protocols for various tasks to facilitate replication of such programs and use of data for other cities.
2. The DLT database is being revised and the stratified survey being conducted will provide us with the information needed to design the test matrix for this project. The stratified survey will have to be modified and information on vehicle categories 5-9 (Bus and Truck) will be collected separately.
3. The most effective way to reduce the number of gross polluters (buses and trucks with excessive visible smoke and high PM emissions) is by encouraging or mandating good maintenance practices. Experience in Hong Kong and elsewhere is that a loaded test in I & M process is more effective than the free acceleration test currently used in Thailand, based on international experience. For broad based support and acceptability of the program, visible gross polluters should be dealt with and police can play an important role in their identification. PCD and DLT will need to explore feasibility and modality of introducing loaded emissions test as a part of their I & M system in Bangkok for the diesel vehicles.
4. PCD has a good laboratory and staff for emissions factor measurements (one of five or six around the world for heavy duty dynamometer). The current heavy duty vehicles test dynamometer has not been calibrated for actual road load. This can be obtained by a coast-down test (EPA provided software for this test). PCD may be able to get this from the manufacturers too.

5. A good base line of emissions from a wide variety of vehicle categories but relatively wide confidence level may be acceptable. In particular, the number of tests and the associated confidence level, depends on the magnitude of emissions reduction desired to be delivered by the adoption of particular improvement strategies. Where technologies can only deliver small reductions more tests and more stringent procedures are needed. Given the limited resources for testing, it is important to test technologies and strategies which are likely to be effective or viable in Asia.
6. Length of the driving cycle. The proposed driving cycle for Bangkok is good and representative of actual conditions but is too long. It is desirable to shorten this driving cycle and still be representative of the local conditions. This will reduce lab time per vehicle, reduce risks of tire failures and increase the number of tests.
7. Continuous PM monitoring systems have been demonstrated to generate reliable and comprehensive data for emissions factor measurements, particularly if the cumulative emissions measured by these systems can be calibrated against a traditional filter measurement, taken in parallel over the whole cycle. PM measurements during different phases of the driving cycle have potential to increase the value of gravimetric (filter) PM measurements, but only over fairly extended drive cycle segments.
8. Participants showed interest in having an analytical tool like the IDEAS model. Participants were willing to work with us on developing the framework to analyze the technical and institutional options and scenarios for controlling diesel emissions.
9. We should explore possibility of establishing relationship with universities so that their students can assist with data gathering and modifications of the excel based program for Thailand.
10. The topic of private sector contribution was discussed at length, while many in the audience showed interest and filled out a short survey. In order to secure core project funding from U. S. Agency for International Development (USAID) to match World Bank and other contributions, project would need to provide letters of intent to USAID demonstrating actual contributions from private sector and other partners.
11. Project would send the sample letter of intent that will send to USAID along with the project proposal to each organization by March 1, 2004. Each organization would change the content and add their contribution in the letter and send back to the project.
12. Need to improve our outreach and information dissemination locally and internationally were mentioned by some of the participants.
13. PTT representative discussed experience in many major cities, such as Mexico, LA, Mumbai, Sydney etc., regarding natural gas for mass transportation since it produces much better emission than diesel, particularly PM. They suggested that for Thailand, which there is indigenous natural gas reserves, therefore natural gas could be the most reasonable potential fuel option because it does not only provide better emission but it also helps the country reduce imported fuel reliance. Participants pointed out that NGV vehicles emissions needs to be characterized and international tests shows that retrofits may not be providing expected benefits. The proper vehicle selection together with the study of NGV emission and utilization as well as maintenance practice may be considered as one option in DIESEL project.

Participant List:

No.	Name	Organization
1	Dr. Supat Wanwongwatana	Deputy Director General, PCD
2	Ms. Mingquan Witchayarungsalit	Air Quality and Noise Bureau, PCD
3	Mr. Panya Warapetcharayuth	Automotive Air Pollution Section, PCD
4	Ms. Patcharawadee Suwanthada	Planning and Processing Section, PCD
5	Dr. Vanisa Surapipit	Planning and Processing Section, PCD
6	Ms. Suwalak Jusawas	Noise and Vibration Section, PCD
7	Ms. Noochjariya Aransri	Automotive Air Pollution Section, PCD
8	Ms. Manwipa Kusol	Automotive Air Pollution Section, PCD
9	Ms. Benjawan Pentrakulchai	Automotive Air Pollution Section, PCD
10	Ms. Natchanok Pa-laen	Automotive Air Pollution Section, PCD
11	Ms. Siwaporn Rungsiyanon	Automotive Air Pollution Section, PCD
12	Dr. Jitu Shah	The World Bank
13	Dr. Sarath Guttikunda	The World Bank
14	Mr. Paul Procee	The World Bank
15	Dr. Nagaraja Harshdeep	The World Bank
16	Ms. Jane Nishida	PADCO
17	Dr. Joseph McDonald	US-EPA
18	Mr. Yat Shing Yam	Hong Kong EPD
19	Mr. Phil Sayeg	Consultant
20	Mr. Jeff Bowyer	US-AEP
21	Mr. Ekbordin Winijkul	US-AEP
22	Ms. Sujitra Yootong	Natural Resources and Environmental Policy and Planning
23	Mr. Silpachai Jarukasemratana	Department of Land Transport
24	Mr. Saimate Thawanaphong	Department of Land Transport
25	Ms. Phimpun Ovasit	Department of Land Transport
26	Mr. Koji Kurimoto	Department of Land Transport
27	Mr. Jarupong Pengglieng	Bangkok Metropolitan Administration
28	Ms. Narumon Intharak	Energy Policy and Planning Office
29	Mr. Piyawat Jongsanongsub	Department of Energy Business
30	Ms. Ratirose Ruenparkwek	Thai Industrial Standards Institute
31	Colonel Jeeradej Prommobol	Traffic Police Division
32	Pol. Pol Uthaiwan	Traffic Police Division
33	Mr. Pataitat Indvadat	Thailand Environment Institute
34	Mr. Tanawat Boonpradith	Thai Automotive Institute
35	Ms. Prapai Numthavaj	Petroleum Institute of Thailand
36	Mr. Nirod Akarapanyavit	PTT Public Company Limited
37	Mr. Thummarat Thummadetsak	PTT Public Company Limited
38	Mr. Banyong Amporntrakul	Private Bus Club
39	Mr. Apiwuth Thongkhum	Thai Bus Business Association

No.	Name	Organization
40	Mr. Prapat Pongkiatkul	Asian Institute of Technology
41	Ms. Vorramaz Thammaphnan	Asian Institute of Technology
42	Ms. Worrarat Thiansathit	Asian Institute of Technology
43	Mr. Horst Preschern	AVL Automotive Thai Co., Ltd.
44	Mrs. Arunsri Viramithai	Department of Energy Business
45	Mr. Somphol Anamnart	Thonburi Union Transport
46	Ms. Supranee Jongdeepaisarl	Thailand Research Funds
47	Ms. Hansa Sanguannai	Anti Air Pollution and Environmental Protection
48	Ms. Chutinthon Praditphet	Office of Transport Policy and Planning
49	Mr. Kai Tuorila	Netpoint Thailand
50	Ms. Watcharee Limanon	PADCO
51	Duangkamol Suwanathods	Fiscal Policy Office
52	Ms. Maneekwan Chandarasorn	Fiscal Policy Office
53	Ms. Weena T. Chainun	PTT Public Company Limited
54	Mr. Methor Thongma	PTT Public Company Limited
55	Mr. Pachon Thepprathep	ARVINMENTOR
56	Mr. Piti Chotsuwan	Thai Hino Motor Sales, Ltd.
57	Mr. Tawich Wichayiam	Thai Hino Motor Sales, Ltd.
58	Ms. Ratchada Mathisariyapong	Thai Bus Business Association
59	Ms. Kornchanok Srisung	Thai Bus Business Association
60	Mr. Pichit Rachawong	Thai Automotive Industry Association
61	Mr. Horst Preschern	AVL Automotive Thai Co., Ltd.
62	Mr. Seppo Keranen	FINNKATALYT LTD.
63	Mr. Jouni Puura	Finnkat Asia Ltd.
64	Mr. Takashi Noda	Mitsui & Co., Ltd. (Japan)
65	Mr. Takashi Takeuchi	Mitsui & Co., Ltd. (Thailand)
66	Mr. Kasuhide Otsubu	Watana Inter-Trade Co., Ltd.
67	Mr. Boonchai Chaisiri	Watana Inter-Trade Co., Ltd.
68	Mr. Trevor C. Simpson	Eyedeas Asia-Pacific Co., Ltd
69	Mr. John Zubrickas	Johnson Matthey
70	Mr. Thanesvorn Siri-achawawath	Innovative Instrument Co., Ltd.
71	Mr. Kavee Siri-achawawath	Innovative Instrument Co., Ltd.
72	Mr. Suwan Jintabotr	E' MAX (THAILAND) Co., Ltd.
73	Mr. Eugenio Belgiojoso	CAM TECHNOLOGY SPA
74	Ms. Ba-worn Wongsinudom	Thai Oil Co., Ltd.
75	Mr. Phongchai Boonchun	Alliance and Refining Co., Ltd.
76	Mr. Somsak Panascharoen	Future Energy Co., Ltd.
77	Mr. Adisak Chindaprasert	Energy Management Technology Co., Ltd.
78	Mr. Chaovalit Mahatumaratana	Shell Thailand
79	Mr. Tawatchai Laprungsirat	Shell Thailand
80	Mr. Phoosak Tanklom	Diethem & Co. Ltd

No.	Name	Organization
81	Mr. Kitipat Kasormmala	Tripetch Isuzu
82	Ms. Ladda Siritientorng	Hino Motors Sales (Thailand) Ltd.
83	Mr. John Lacy	Novo Energy
84	Mr. Kriengkrai Techakanont	Thammasat University