Workshop on Enhancing the Regional Distribution of CDM Projects in Asia and the Pacific

6–7 September 2011 • Radisson Hotel, Kathmandu, Nepal

Funding Partner

Development of standardized baseline for BRT in LDCs and SIDs based on AM0031

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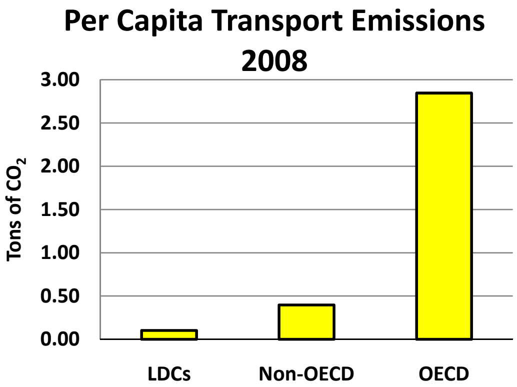
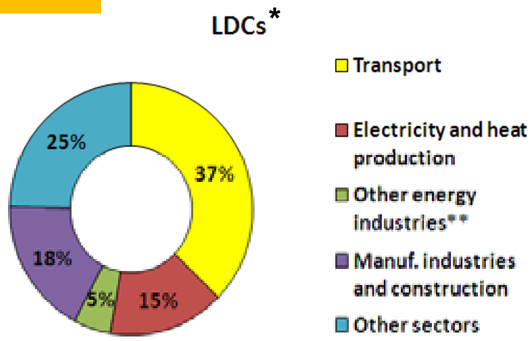
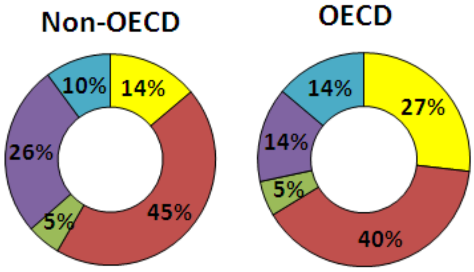
Why Transport in LDCs and SIDs?

Transport emissions are low compared to other countries



But high as a proportion of emissions from fossil fuel combustion





* Data only available for 13 out of 49 LDCs; 85% of transport emissions are "on road"

Source: International Energy Agency (2010), CO_2 Emission from Fossil Fuel Combustion, Paris: IEA

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Why BRT in LDCs and SIDs?

Existing condition:

- no formal but informal public transport system
    - 'motodops', tuk-tuks
- poor quality infrastructure
- growing private vehicle ownership
- traffic jams at peak hours
- high road accident fatality rate
- worsening air quality
- increasing carbon emissions

BRT is a low cost mass-transit system which can be implemented quickly to meet growing demand in an environmentally friendly way.

Typical traffic mix in Siem Reap, Cambodia

Bangkok Bus Rapid Transit (BRT)

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IGES approach for development of the standardized baseline

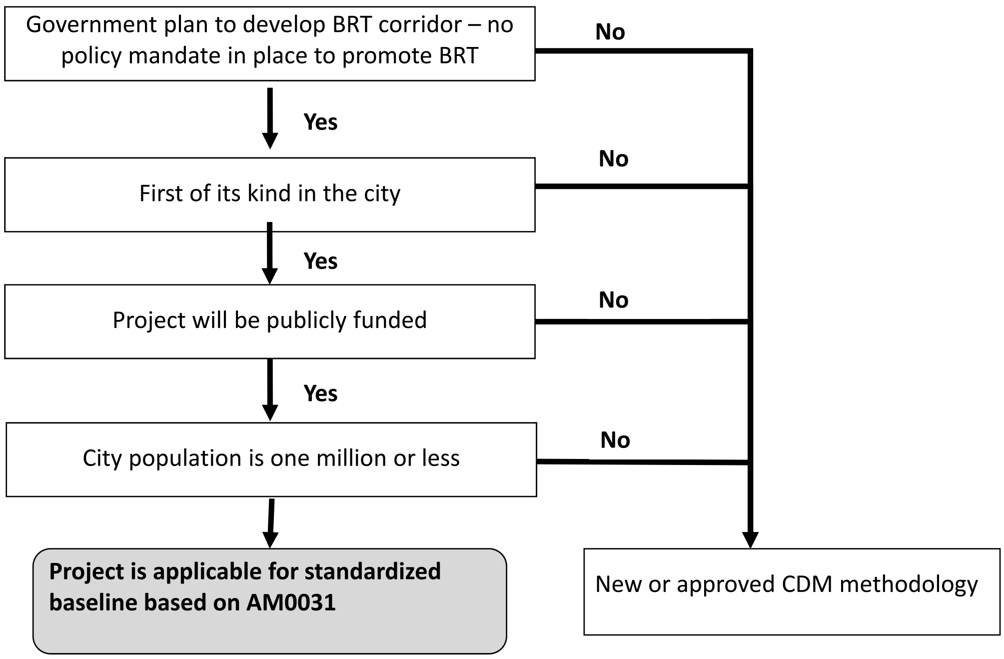
1. **Literature review**
   - Previous studies exploring standardized baseline for transport
   - Other guidelines for calculating GHG benefits of transport projects
   - Information on existing BRT projects
   - Other relevant studies

2. **PDDs review**
   - 12 BRT PDDs all based on **AM0031**
   - Assess baseline scenario, project scenario (identify alternatives), parameters, locations, additionality (barriers commonly cited)

3. **Standardized baseline setting**
   - Level of aggregation: BRT projects proposed in cities in LDCs and SIDs
   - Default values for some parameters applicable to LDCs and SIDs
     - average occupancy rate and average trip distance

4. **Standardized additionality determination**
   - Identification of alternatives: baseline scenario – continuation of the current road-based transit system
   - Investment analysis: publicly funded
   - Barrier analysis: first of its kind | technological barriers | political barriers | others (insufficient demand)

Concept of tool to identify standardized baseline for BRT projects in LDCs and SIDs



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Setting the standardized baseline

Indicator	AM0031	Proposed default values
The transport modes used in the absence of BRT project	Passenger survey	
Fuel types of different modes	Local statistics	
Average speeds	Project data of local statistics	
Specific fuel consumption by mode and fuel type	Local statistics, national or international literature, or IPCC values multiplied by an annual technology improvement factor of 0.99 for buses, taxis and passenger cars, 0.997 for motorcycles	
Fuel emission factor	IPCC values	
Average occupancy rate of the vehicles by mode[1]	Project statistics or official statistics	Bus: 39.33 Car: 1.86 Taxi: 1.86 3-wheeler: 4.25 2-wheeler: 1.48
Average trip distance for each mode[2, 3]	Project statistics or official statistics	Bus: 3.75 Car: 6.25 Taxi: 6 3-wheeler: 5 2-wheeler: 7.5
Total number of passengers on the new system	Recorded per entry station	

[1] Based on BRT PDD for Indore, India

[2] Based on values derived in Vientiane from Onnavong and Nitta (2005) "*Identifying inequality of transportation mobility: developed country vs developing country*" (http://www.easts.info/on-line/proceedings_05/1065.pdf)

[3] The GEF's "*Manual for Calculating Greenhouse Gas Benefits of GEF Transportation Projects*" suggests 6 km as a conservative default value for average trip distance however the lower values derived from Onnavong and Nitta (2005) were deemed more appropriate especially for LDCs and SIDs.

Mechanism of adjusting baseline default values

Default values (ex-ante estimation) → **Actual survey (Monitoring)** → **Adjusted values (ex-post validation)**

Summary: key points

- by establishing standardized baselines for BRT in LDCs and SIDs, CDM can play a role in mitigating rising transport carbon emissions and serve urgent development needs
- no guidance from UNFCCC EB yet, heuristic approach guided by approved CDM methodology (AM0031) and other reliable sources could be used in drafting standardized baseline for BRT
- positive lists – concept tool to identify standardised baseline for BRT projects could be refined further in consultation with DNAs
- to lessen initial data requirements, default values are provided then values are enhanced and updated thru periodic monitoring

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