

Response of ADB to the United Kingdom on Approval by Mail: Viet Nam - Sustainable Urban Transport for Ho Chi Minh City Mass Rapid Transit Line 2 Project

Dear Patricia,

We are pleased to note of the full support from Germany for this project and positive responses from others. Since there were few questions and comments from Australia, UK and the US, we have prepared the responses and sending those to you. Hope this will satisfy their questions and can get this through in the next 2 days.

Thanks

Jiwan

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Comments from UK on Approval by mail: Viet Nam - Sustainable Urban Transport for Ho Chi Minh City Mass Rapid Transit Line 2 Project – comments received on 10 September 2013

Implementation Potential

The project documentation describes how the HCMC Urban Transport Master Plan (HUTMP) will be supported by the Public Transport Policy Development Program. This program will develop policies and regulations for station access management, a parking policy and a framework for pricing public and private transport in HCMC to promote a modal shift from private vehicles to public transport. Why is this development program being financed under the MRT Line 2 package and not any of other rapid transit projects (MRT Line 1, MRT Line 5 and two World Bank bus rapid transport systems) listed in the project documentation? Has any policy development work already been undertaken during the design and implementation of MRT 1 or 5 and if so how will this be co-ordinated with this work? What measures have been taken to ensure that the regulations developed within this project will be co-ordinated with those of the whole city?

ADB: The GoV has been coordinating with ADB, World Bank, and other donor agencies on the policy aspects of the HUTMP. MRT 1 will assist on policy development for operational and maintenance issues for the whole MRT system, under JICA financing. MRT2 was selected as the best candidate among MDB investments for CTF cofinancing during the Joint Mission in 2009. The HCMC People's Committee is the Executing Agency for the MRT2 program and other key investments under the HUTMP and is coordinating policy and regulatory measures across the entire city. To ensure long term coordination and integration of all policies and regulations, it is proposed a public transport authority (PTA) will be established with assistance of proposed ODA financing (World Bank) prior to MRT opening.

Under MRT5, the same physical and policy measures as designed for MRT2 will be implemented as part of the project financing requirements of ADB, and for MRT1, JICA and government are currently reviewing additional financing to ensure the same physical measures are implemented prior to opening and consistent policies applied at stations.

Cost-effectiveness:

□ The carbon savings associated with the project are a consequence of all three phases of the project. Considering all the public (donor and multilateral) finance involved, this yields a cost/ton of \$110/t CO₂e (\$1107m/10.1m t CO₂e). This is after considering black carbon. We note that the inclusion of black carbon makes a big difference to cost-effectiveness. Can you provide us with more information on the assumptions on the counterfactual regarding transport modes and development of demand to calculate the avoided fuel consumption?

ADB: As for the two approved CDM methodologies that deal with modal switch for rapid transit systems (AM0031 the Transmilenio BRT methodology; and ACM0016 developed for BRT and rail systems, and applied to, the Metrobus BRT in Mexico City, Mexico), TEEMP estimates the change in emissions to change of mode by considering the incremental modal changes of the 'project' versus the BAU.

Demand for the MRT system was prepared by the previous feasibility study. The incremental effect of the sustainable urban transport measures was based on project-based analysis of incremental travel time improvements and the potential for additional modal switch to MRT.

Based on experience with other MRT comparable systems, the former mode of MRT users was estimated as follows for 2018: (i) 29% of trips were not previously made (ii) 21% used large bus; (iii) 10.7% used medium bus; (iv) 0.35% were car drivers; (v) 5.7% were car passengers; (vi) 5.4% were taxi passengers; (vii) 19% were motorcycle drivers; and (viii) 8% were motorcycle passengers.

Of trips not previously made, a small proportion of former walk and cycle trips (less than 3%) are assumed to be included in these new trips. At 2038, the former mode assumption was similar but given changes in government policy on bus types used, a high proportion of former bus users were assumed to have used large buses. Also, the proportion of car drivers was increased to 1.5% of all MRT passengers at the expense of the number of motorcycle drivers.

The 4 stroke motorcycle fleet, cars and taxis were assumed to mainly use gasoline and the medium and large buses to use diesel fuel.

The assumptions on former mode are considered realistic and conservative. Only 6% of the switching passengers are assumed to be former drivers of cars or motorcycles. 31% were assumed to be former bus users. The balance of 63% are assumed to be passengers or completely new induced trips that therefore are assumed to generate no GHG emission reductions.

Has any assessment of the drivers of sustained private transport and gradual upgrade to 4 wheel transport been carried out (beyond convenience of mode of transport)? How will the policy design assess these drivers to ensure sustainability of the program and additionality of CTF finance?

ADB: the HUTMP includes medium- to long-term modal targets and policy measures to facilitate the shift from private to public transport. Currently, policy measures under consideration include limiting the number of private vehicle registrations, increased vehicle registration and other operational fees, congestion pricing, and other demand pricing measures. As part of the development of the supported CTF policy components, these drivers were closely assessed to determine the most effective measures to address private vehicle growth, within the context of the MRT system. The CTF financing will provide significant additionality through providing a framework and regulatory support to address key private and public transport pricing to discourage private vehicle growth, particularly cars, and ensure long term financial sustainability through reduction in public transport subsidies. Through establishment of effective systems and their enforcement for improved use of public space around MRT stations – through reduction of footpath parking and commercial use, and encouragement of pedestrian and non-motorized transport means – the CTF financed measures will provide the policy and regulatory basis to expand these types of private transport supply constraints throughout the city.

The CTF financing will also provide specific transport and traffic demand management tools through computer systems and related capacity building support – to relevant public transport agencies to ensure both CTF funded and other proposed pilot measures can be adequately modeled, planned and consulted prior to implementation to ensure higher levels of public acceptance of private vehicle constraints.

□ What are the reasons for no private finance leverage? Have options to leverage in private finance been considered?

ADB: as noted in the paragraph 31 of the Supplementary Appendix, the MRT2 program investments are not being implemented on a fully commercial basis, and as such there is no appetite from the private sector based on the current project structure. In 2009, a Public-Private Infrastructure Advisory Facility funded study on private sector opportunities was undertaken in parallel to MRT2 feasibility study - and reviewed by CTF funded consultants in 2012. This report showed that the private sector risks associated with the early development of MRT systems in HCMC far exceeded any returns for MRT related investments. The ridership forecasts and revenue basis involved significant integration and counter-party investments or commitments by the government, which are not able to be sufficiently identified and quantified until a basic MRT system was in operation. Therefore the opportunities for private sector leverage were very limited.

For MRT2, it is proposed that an option for private sector operation to be engaged on a concessional basis for the operation and maintenance of line 2, is part of the bidding process for the electrical and mechanical systems contract. A final decision on this private sector involvement will be made 2 years prior to MRT2 operation.

Additionally JICA funded a pre-feasibility study for private sector financing of investments around the major hub interchange of MRT1 and MRT2 at Ben Thanh Station, which has shown low viability, although further options are being examined to have some partial investment. This would be a parallel financed project to the MRT2 project.

However there are plans for PPP modalities on future investments under the HUTMP, which will be expected to be easier to be established and to be more viable once the initial three MRT lines are in operation and the public transport system is on a more sustainable basis to reduce revenue risk.

□ Although a more user-friendly metro line in Ho Chi Min City would provide a lower carbon alternative means of transport for some of the current road users in the city, due to the current demand for private vehicles, it seems likely that the freed-up road capacity being delivered by the project will simply be taken by traffic that cannot currently fit on HCMC's road network. Has any sensitivity analysis been undertaken to assess these potential rebound effects and their impact on the cost-effectiveness of the proposal?

ADB: consideration of rebound effects are not required under the CTF guidance; however, potential rebound effects are included in the TEEMP model along with other details as noted in paragraph 12 of the Supplementary Appendix.

The TEEMP model does not directly calculate the effect of induced traffic i.e. additional travel induced by road space freed by car and motorcycle drivers switching to MRT. The potential effects of induced traffic were considered as follows.

Two principal types of induced traffic were identified: (i) those motorized trips that could not be formerly made in the BAU as congestion was too severe and that are induced once some road space is freed up due to mode switching; and (ii) those motorized trips that would be made once a car or motorcycle user switches to MRT and therefore leaves the vehicle at home to be used by others. Effect type (i) would be expected to be minor as long as congestion is not extensive on a spatial and temporal basis. In HCMC, peak period congestion is increasing and heavy traffic conditions are experienced but it is not so great that we would expect extensive travel to be suppressed. However, the potential for suppression in the BAU and hence for induced travel with the project would increase over time.

Offsetting the effect of induced travel is the effect of faster and smoother traffic conditions induced by the project on remaining traffic. That is, after the initial mode switch, remaining road users would enjoy smoother traffic flow with reduced fuel consumptions and emissions. TEEMP does not calculate this effect. But the application of the ACM0016 to Metrobus, in Mexico City, estimated that the effect of smoother traffic flow is approximately the same as due to the effect of that due to mode switch under traffic conditions that are arguably more congested than in HCMC. For example, it was estimated that 17,500 tonnes of GHG per year were estimated due to smoother running on remaining traffic and that 15,600 tonnes were estimated due to persons switching from car to bus (Schipper L, Deakin E, McAndrews C, Scholl L, Frick KT. (2009) "Considering Climate Change in Latin American and Caribbean Urban Transportation: Concepts, Applications, and Cases: Final Report". Prepared by Center for Global Metropolitan Studies, University of California, Berkeley, USA. page 61). With the expected modest amount of induced travel, the former saving due to smoother traffic flow would be negated. Neither of these effects have been accounted for in the GHG emission estimates with the net result on the analysis being neutral.

The 'vehicle left at home' effect is rarely studied but has the potential to be a more important source of induced traffic than that due to trips able to be made due to lower congestion. However, in HCMC, the average household of 4 persons owns 2 motorcycles or a ratio of 1 per person old enough to hold a driver's license. There was therefore considered to be very little potential for induced traffic due to the 'vehicle left at home' effect.

Specifically for MRT2 corridor, with the establishment of the MRT line, the existing narrow two lane road not be widened (as may have happened in the absence of a MRT line) and in some areas the area of road space will be reduced with widening of inadequate width footpaths.

Transformational Potential

The transformational potential is estimated to be more than six with replication and scale up within HCMC only. How has this figure been calculated? What evidence do you have to support these calculations? Would this scale up require the same amount of public finance?

ADB: as defined in paragraphs 15 - 17 of the *CTF Investment Criteria for Public Sector Operations* dated 9 February 2009, transformation potential is the ratio of expected GHG reductions with replication and scale up vs. the direct reductions from CTF supported investments, in this case:

$$(3.8 \text{ million tons CO}_2\text{e}) / (0.5865 \text{ million tons CO}_2\text{e}) = 6.4$$

These estimates are derived from the TEEMP model. As noted in paragraph 13 of the Supplementary Appendix, this replication and scale up could be achieved if the CTF-funded

components financed under the MRT2 program are applied to other MRT lines in HCMC. These other MRT lines also represent substantial public investments which are greater in aggregate than the MRT2 program. The CTF guidance on cost-effectiveness does not explicitly address the additional costs of replication and scale up, and in practice most or all CTF project proposals have shown a calculation of cost-effectiveness with replication and scale up based only on the CTF project.

Request for a breakdown of the project components. In particular:

a breakdown of how the \$7.8m for the Public Transport Policy Development Program has been arrived at

ADB: the policy development program component was developed under the project preparation technical assistance. The detailed budget and scope are based on extensive consultation with GoV counterpart agencies. Additional details on the budget and scope are presented in draft RRP Appendix 1 (Design and Monitoring Framework), items 3.1 – 3.3. under “Activities with Milestones.”

The program consists of equipment, consulting services and training, but not related civil works, for the following specific programs:

- Transport modeling platform (\$3.6 million)
- Traffic modeling platform (\$1.3 million)
- Support for development of bus information system (\$0.2 million)
- Development of street and footpath management system (\$0.9 million)
- Policy development for better enforcement, parking management and transport pricing (\$1.8 million)

how has this land acquisition budget been calculated to ensure that relocating 65 affected business can be done successfully, so as not to delay implementation of the project?

ADB: a resettlement plan including entitlement matrix has been prepared pursuant to ADB safeguards and GoV requirements. There are 65 affected businesses operating temporary stalls using land adjoining the road along two sections of the MRT 2 alignment; these are expected to be moved further along the same road corridor in a timely manner during actual project implementation. No delays are expected due to land acquisition.

Poverty and Social

The project documentation details an increased risk of HIV/AIDS with the influx of construction workers for the project. Are any steps being taken by the project developers to mitigate this risk?

ADB: Provisions for HIV/AIDS awareness and preventive guidance will be incorporated into construction contracts as is standard procedure for ADB projects. Contractors will be obliged to release their workers to attend HIV/AIDS programs conducted by the city authorities.