

## **Appendix 1-A:**

### **Terms of Reference for Consultants**

## **A. Background**

1. The Government of Viet Nam is acutely aware of the impact of inadequate infrastructure on growth and poverty reduction, and is already beginning to see infrastructure bottlenecks affecting foreign investment and its desire to more equitably share development with parts of the country that are remote from the major urban areas—Hanoi, Ho Chi Minh City, Da Nang, and others. For the road sector, the Government is taking a dual approach: (i) developing a network of high-capacity expressways linking the principal urban areas with each other, with less-developed regions of the country and—reflecting the Government’s commitment to the Greater Mekong Subregion (GMS)—with neighboring countries; and (ii) developing the institutions required to plan, design, implement, and manage this network. The Ministry of Transport (MOT) is responsible for implementing this program. To date it has developed a preliminary outline for the network and recently established the Viet Nam Expressway Corporation (VEC) to oversee the outline’s further development and implementation.

2. VEC is at present a state-owned enterprise and is likely to remain so. Its functions have yet to be defined in detail, but in broad terms include developing a detailed master plan for the country’s expressway network; preparing projects for investment; mobilizing financing from the Government, private sector, and development partner sources; overseeing construction; and operating expressway sections as they are completed and put into service. VEC has about 60 technical and financial staff. There is no doubt that VEC has an important role to play in delivering the Government’s ambitious expressway program. To do so, however, it requires substantial strengthening at every level.

3. The proposed technical assistance (TA) responds to the Government’s request for assistance to (i) undertake an institutional and financial management assessment of VEC so that it can effectively manage the expressway program; (ii) complete a master plan for the long-term development of the country’s expressway network and, based on this master plan, a program of priority expressways that should be developed within the period 2006–2015; and (iii) confirm the economic and financial viability of a priority expressway project suitable for funding within the framework of a public-private partnership, and prepare Asian Development Bank (ADB) loan for the project.

## **B. Scope of Work and Terms of Reference**

4. The consulting services will include three broadly defined components: (i) an institutional component focused on VEC, which will include a detailed analysis of its financial viability; (ii) preparation of an expressway master plan (EMP); and (iii) confirmation of the economic and financial viability of a selected priority

expressway project within the framework of a public-private partnership, and preparation of ADB loan for the project.

## **1. A Business Plan for VEC**

5. It is hoped that VEC will be self-financing in delivering the EMP as soon as possible. For the institutional component, the consultants will undertake the following activities and such others as are necessary to achieve the objectives of the TA:

- (i) Review (a) laws, regulations, decrees, circulars, and charters relevant to VEC; (b) the current organizational structure of VEC, with due consideration of the role and responsibility of each department and division, segregation of duty, staffing, etc.; and (c) future development plan for the organization of VEC.
- (ii) Recommend appropriate reforms of the legal and regulatory frameworks for VEC in consultation with the Government.
- (iii) Recommend an appropriate institutional structure for VEC, including mission, objectives, functions of departments and divisions, regional organizations, performance specifications, targets, and financial management setup.
- (iv) Review laws, regulations, decrees, circulars, and charters relevant to the toll structure and the existing toll setup methodology, discuss advantages and disadvantages of a different toll setup methodology and its adjustment mechanism used in other countries, and propose a toll structure that is suitable for Viet Nam, including a toll setup and toll adjustment mechanism. Recommend required legislation changes for implementing the proposed toll structure.
- (v) Discuss different public-private investment modalities, assess their suitability for application in the Vietnamese context, and propose the appropriate model (on an aggregate basis for VEC and, as applicable, for each expressway).
- (vi) Assess the financial status of VEC over the next 20 years based on a financial projection that incorporates the EMP investments and the proposed capital and toll structures. Identify risks relating to the financial viability and sustainability of VEC, conduct sensitivity analysis, and identify risk mitigating factors.
- (vii) Develop and propose the appropriate capital structure for VEC that includes the level and timing of equity injection by the Government and/or other forms of public and private financing.

## 2. Expressway Master Plan Component

6. For the EMP component, the consultants will review MOT's existing preliminary EMP, feasibility study reports of ongoing and planned expressway projects, reports of various ADB and other development partner-financed studies, and relevant literature;<sup>1</sup> and undertake economic, engineering, financial, legal, institutional, social, and environmental studies, which may be modified in discussions with the Government and the ADB project team during TA implementation.

7. The consultants will prepare a draft EMP including policy and criteria for expressway construction, route (origin and destination [OD]), priority (2006–2015, 2016–2025, and 2026 onward), technical specifications, road services and administrative facilities (service areas, cross-border facilities, weight stations, traffic information systems, and toll plazas), cost estimates (construction, land acquisition and resettlement, operation and maintenance [O&M]), economic and financial viability assessment, toll level, social and environmental assessment, and others. Specifically, the consultants will undertake the following activities and others, as necessary, to meet the objectives of the TA:

- (i) Collect demographic, social, and economic data for the country, including as a principal reference the Government's Socio-Economic Development Plan for 2006–2010, and develop three growth scenarios for the economy, assuming low, middle, and high cases.
- (ii) Conduct necessary surveys for traffic counts, OD for each major category of vehicle, and travel speed. Based on the surveys and the demographic, social, and economic data, prepare traffic forecasts for representative traffic types taking into account population growth, production increases, economic growth, and income increase. Prepare a nationwide OD matrix distributed by key freight types and major domestic and regional points of OD.

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<sup>1</sup> The formulation of the expressway master plan (EMP) takes into account (i) the results of the GMS Transport Sector Strategy Study (ADB. 2004. *Technical Assistance for the Greater Mekong Subregion Transport Sector Study*. Manila [REG 6195]), which will develop, among others, a proposed priority road transport network for the subregion; and (ii) the technical requirements for road and bridge design standards prescribed in Annex 11 of the GMS Cross-Border Transport Agreement (CBTA) on Road and Bridge Design and Construction Standards and Specifications, and Annex 12 of the CBTA on Border Crossing and Transit Facilities and Services to the extent that the expressways to be identified in the EMP will form part of the current and future scope of the CBTA. Although Protocol 1 of the CBTA on designation of corridors, routes, and points of entry and exit currently specifies only 11 routes along which the CBTA will apply, it is expected that the CBTA implementation will be extended to all major GMS roads, including those that will be identified in the GMS Transport Sector Strategy Study.

- (iii) Prepare traffic flow forecast for each OD-pair, based on the existing long-term economic development forecast for Viet Nam, including forecast of domestic, regional, and international trade that originate or depart or may transit Viet Nam.
- (iv) Assist VEC to prepare standard specifications for the design and construction of expressways. Design criteria will include geometric standard, design speed, and criteria for selecting number of lanes. These standard specifications will be based on typical international standards for high-speed and limited-access highways.
- (v) Based on outputs of the noted studies, propose an expressway network in the country, taking into account MOT's existing preliminary EMP. Identify starting and ending points of each expressway link, and assume appropriate configuration for each link, based on the noted standard specifications for expressways.
- (vi) Develop a broadly defined alignment for each expressway link with reference to available topographic maps, paying attention to minimization of negative social and environmental impacts, in accordance with ADB's *Operations Manual* (OM)-F1 on Environment and OM-F2 on Involuntary Resettlement, ADB's *Environmental Assessment Guidelines*,<sup>2</sup> and those of the Government of Viet Nam. Estimate land acquisition and resettlement cost, construction cost, and O&M for each link, sufficient for a preliminary assessment of economic and financial viability.
- (vii) Develop a traffic assignment model to analyze likely future modal and route assignment of the identified freight flows. The model will take into account the magnitude, ODs of relevant freight flows, and the modal cost of tollway versus other modes and routes.
- (viii) Undertake a preliminary economic evaluation of each link using the Highway Development and Management Model (version 4) by comparing with- and without-project cases. Calculate the economic internal rate of return (EIRR) and economic net present value (NPV) of each expressway link.
- (ix) Examine the relevance and economic viability of each expressway link based on the results of the economic analysis (viii). Finalize the expressway network, and prioritize the expressway link into short-term (2006–2015), medium-term (2016–2025), and long-term (2026 onward). If appropriate, apply a phased development approach, for

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<sup>2</sup> ADB. 2003. *Environmental Assessment Guidelines*. Manila.

example, by the addition of lanes or carriageways, conversion from open to closed systems, etc.

- (x) Calculate a preliminary financial internal rate of return (FIRR) for each expressway link by using the output of the toll level analysis. Indicate the relationship between the FIRR and toll level, and assess the financial viability of investment for each expressway link and the whole expressway projects included in the master plan.
- (xi) Prepare project/concept profile for each expressway link, including starting and ending points, expected construction period, configuration (design speed, number of lanes, and interchanges), road service and administrative facilities (service areas, cross-border facilities, weigh stations, traffic information systems, and toll plazas), cost estimates at prefeasibility level (construction, land acquisition and resettlement, O&M), possible financing plans (state budget, bond, loan from international financing organizations, private sector finance, other sources), economic and financial viability assessment, toll level, potential social and environmental issues, and others.
- (xii) Establish the link between impacts, outcomes, outputs, and inputs of the recommended EMP, and indicate the associated performance monitoring indicators.

8. The consultants will prepare a draft expressway priority plan comprising expressway projects that are classified as short-term (2006–2015). The plan identifies (i) goals to be achieved within 10 years, such as traffic safety improvement, travel time reduction, economic growth, and income growth; (ii) financial requirements for implementing the projects; (iii) project profiles; and (iv) performance measurements to evaluate degree of achievement of the goals.

### **3. Public-Private Partnership Component**

9. Based on the preliminary economic and financial viability assessment given by outputs from (viii) and (x) of para. 7, the consultants will identify a priority project suitable for funding from an ADB loan and the private sector. Initial ranking of the projects will be based on NPV. Selection of a project from this ranking will take into account the preliminary social and environmental assessment given by outputs from (vi) of para. 7 and the financial viability of the project in terms of its suitability for funding within a public-private framework. The consultants will undertake the following study for the identified project:

- (i) Conduct detailed economic evaluation of the project in accordance with *Guidelines for Economic Analysis of Projects of the Asian Development Bank*.

- (ii) Undertake sensitivity analysis by identifying critical factors on the EIRR and FIRR, and calculate switching values.
- (iii) Conduct detailed financial assessment in accordance with *the Guidelines for Financial Governance and Management of Investment Projects Financed by the Asian Development Bank*.<sup>3</sup>
- (iv) Carry out a risk analysis (using “@ Risk” software) by considering the possible values for key variables in accordance with ADB’s *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*.<sup>4</sup>
- (v) Carry out a distribution analysis of project benefits, and calculate the poverty impact ratios in accordance with ADB’s *Guidelines for the Economic Analysis of Projects*, and *Handbook for Incorporating Poverty Impact Analysis into Economic Analysis of Project*.
- (vi) Through workshops and presentations, and by using regional and international examples, provide MOT, VEC, and other interested/relevant Government agencies with an understanding of how expressway projects can be successfully developed as private sector or public-private sector, with particular emphasis on financing alternatives, including pure private sector financing, a blend of private and public sector financing.
- (vii) Prepare a transparent procedure for private sector developer selection that MOT and VEC could use to develop an expressway, covering all activities from inviting expressions of interest to concluding an agreement with a selected developer.
- (viii) Develop a draft concession agreement with a selected developer.
- (ix) For the expressway project agreed to be most likely to be attractive to a private sector developer, assist MOT and VEC in initiating the procedure for selecting a developer for the PPP expressway project.
- (x) Prepare a new technical assistance loan for the expressway project if public sector financing funded from ADB Ordinary Capital Resources is required.

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<sup>3</sup> ADB. 2001. *Guidelines for the Financial Governance and Management of Investment Projects Financed by Asian Development Bank*. Manila.

<sup>4</sup> ADB. 2002. *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*. Manila.

10. The consultants for the above three components will provide ADB with their findings and recommendations to generate synergy and complementarities with ongoing studies and works such as ADB's regional TA for the GMS Transport Sector Strategy Study (REG 6195) and those stipulated in the GMS-CBTA, currently supported by ADB's regional TA for Implementing the Agreement for Facilitation of the Cross-Border Transport of Goods and People in the Greater Mekong Subregion-Phase 1 (REG 6098).

### **C. Implementation Arrangements**

11. The consulting services will be implemented by an international consulting firm. A total of 40 person-months of international consultants will be required. The international consultants (person-months are in parentheses) will include a team leader/transport economist (9), a highway engineer (9), a financial specialist (5), an institutional specialist (5), a legal specialist (3), a public-private partnership specialist (4), a social/resettlement specialist (3), and an environmental specialist (2). Domestic consulting services totaling 43 person-months will be provided by a transport economist (9), two highway engineers (12), a financial specialist (5), an institutional specialist (5), a legal specialist (3), a public-private partnership specialist (4), a social/resettlement specialist (3), and an environmental specialist (2).

### **D. Schedule and Reporting Requirements**

12. The consulting services will be implemented over 9 months, between May 2006 and January 2007. An inception report will be prepared within 45 days of the commencement date. It will include planning of the consulting services and point out issues to be further studied during the engagement period. An interim report will be prepared at the end of the fifth month. A tripartite meeting will discuss intermediate outputs in the interim report. A draft final report, prepared by the end of the seventh month, will summarize the consultants' findings, analyses, conclusions, and recommendations for review and approval by ADB and the Government. The consultants will present major outputs at a tripartite meeting to be held around the eighth month after commencement. A final report will be completed immediately after the consultants receive comments from ADB and the Government. Three copies of all reports and documents will be submitted to ADB, and six copies to the Government. Electronic copies of all documents will be submitted to ADB and the Government.