

TERMS OF REFERENCE FOR CONSULTANTS

1. **Transport Economist and Team Leader (International, 5 PMs)** Lead the multidiscipline team of international and national consultants, ensuring full integration of work with the MRT's PMU. Lead on day-to-day project management, including communication with MRT and ADB. Lead the preparation of documentation which will be used in the Report and Recommendations of the President (RRP) of ADB. Working in close tandem with the financial specialist, undertake an economic analysis of the proposed project in accordance with ADB's Guidelines for the Economic Analysis of Projects (2017) by (i) constructing a traffic forecast with and without the project; (ii) reviewing macroeconomic and sector contexts, (iii) conducting demand analysis, (iv) identifying the project rationale and alternatives; (v) identifying and comparing project costs and benefits (including additional environmental benefits), (vi) fine-tuning the cost estimates (including operation and maintenance costs) based on an objective and detailed assessment and with the viewpoint of life-cycle costing/ total cost of ownership (vii) assessing project sustainability, (viii) conducting sensitivity and risk analysis, and (ix) identifying indicators for project performance monitoring. Place particular attention to the definition of the with and without project scenarios, considering the timing of the completion of the three Phases of the program. Working together with the Railway Track and Alignment Engineer, identify ways in which such traffic disruption can be mitigated or minimized. Working with the Finance Specialist, consider ways in which the rehabilitated line can generate additional revenue to MRT and the government, including but not limited to the development of data/telecommunication corridors and industrial development along the corridor. Qualifications: Preferably a Master's degree and a broad-based work experience (10 years of relevant professional experience) recognized as an expert in transport economics; proven analytical skills and working experience in ADB developing member countries; CIS experience would be preferred. Russian and/or Turkmen language skills will be considered as an advantage.

2. **Railway Track and Alignment Engineer (International, 3 PMs, National 3PMs).** Working closely with other consultants, MRT and ADB (i) review and consolidate technical due diligence of the project conducted by the MRT and its design institute, including the overall scope, engineering aspects, cost estimate, and other relevant areas; and (ii) assist in the preparation of procurement design and bidding documents for the ensuing project, especially in relation to rehabilitation of the rail, maintenance machinery and equipment, the sleeper factory, and production line at the welding plant. Assess and recommend the optimal technology/method for the rehabilitation of railway lines, considering among others (i) cost effectiveness, (ii) quality, (iii) disturbance to traffic, (iv) availability of the technology in Turkmenistan. The assessment should consider among others the ground conditions, sub-structure bearing capacities, track alignment optimization, and ways to minimize or mitigate disruptions to traffic.

3. Qualifications: For the international consultant, preferably a Master's degree with professional work experience of 10 years or more in railway track engineering; working experience or knowledge of ADB's operations will be desirable; proven analytical skills and working experience in ADB developing member countries; CIS project experience would be preferred, and Russian and/or Turkmen language skills will be considered as an advantage. For the national consultant, preferably an undergraduate degree with professional work experience of 5 years or more in railway track engineering; working experience or knowledge of ADB's operations will be desirable; project experience of railway projects in Turkmenistan would be required, and Russian and/or Turkmen language skills will be required. Working knowledge of the English language is preferred.

4. **Railway Signaling and Communications Specialist (International, 1 PM).** Undertake an assessment of the signaling and telecommunications system being used in Turkmenistan, and the MRT's plans for its improvement. Engage in discussions with the MRT and help prepare a clear plan on how the signaling and communication aspects of the project will be undertaken across the three phases. Based on the agreed plan, work closely with other consultants, MRT and ADB to assist in the preparation of technical design and procurement documents for the ensuing project, especially in relation to signaling and communication systems. Qualifications: Preferably a Master's degree with professional work experience of 10 years or more in railway signaling and communications; Working experience or knowledge of ADB's operations will be desirable; Must have proven analytical skills and working experience in ADB developing member countries; CIS project experience would be preferred.
5. **Materials Engineer (International, 1 PM).** Undertake, but will not be limited to, the following tasks: Working closely with other consultants, MRT and ADB, assist in the preparation of technical design and procurement documents for the ensuing project, especially in relation to the sleeper factory. Undertake an assessment of different materials/methods for the production of railway sleepers and recommend the best solution for the Turkmenistan context. Assess the business case for the new sleeper factory, including the potential for exportation. Qualifications: Preferably a Master's degree with professional work experience of 10 years or more in materials, with a focus on concrete; Working experience or knowledge of ADB's operations will be desirable; Must have proven analytical skills and working experience in ADB developing member countries; CIS project experience would be preferred. Russian and/or Turkmen language skills will be considered as an advantage.
6. **Railway Asset Management Specialist (International, 1 PM).** Working closely with other consultants, MRT and ADB, assist MRT in the improvement of MRT's institutional capacity, especially on asset management. Conduct an analysis of MRT's institutional capacity on asset management, and prepare a needs assessment. Assist the team leader in fine-tuning the investments from a life-cycle cost/ total cost of ownership perspective. Qualifications: Preferably a Master's degree with professional work experience of 10 years or more in railway asset management; Working experience or knowledge of ADB's operations will be desirable; Must have proven analytical skills and working experience in ADB developing member countries; CIS project experience would be preferred. Russian and/or Turkmen language skills will be considered as an advantage.
7. **Procurement and Contract Specialist (International, 3 PMs)** Support MRT and ADB to (i) undertake procurement activities including EA's procurement capacity assessment in line with ADB's Procurement Framework and Procurement Regulations for ADB Borrowers (2017); (ii) based on the draft bidding documents prepared by MRT, review and update such documents to ensure full compatibility with ADB guidelines; (iii) receive and open contractors' bids, and assist the EA in the procedures for obtaining ADB's no-objection on evaluation of proposals, finalization of contracts, and contractor mobilization; and (iv) train EA staff on ADB procurement requirements and on contract management. Qualifications: Preferably a Master's degree with 10 or more years' work experience in international bidding and procurement; excellent analytical skills and working experience in ADB developing member countries; prior experience of ADB projects in CIS is preferred. Russian and/or Turkmen language skills will be considered as an advantage.
8. **Financial Specialist (International, 2 PMs)** Working in close tandem with the Transport Economist, undertake the financial analysis of the project and the executing agency in accordance with relevant ADB guidelines, by (i) preparing the detailed budget and financing plan for the project; (ii) determining the financial internal rate of return and comparing it against

the weighted average cost of capital; (iii) preparing an updated financial management assessment of MRT, (iv) assessing the ability of the MRT to remain financially viable as an entity, including the preparation and examination of financial projections; (v) identifying key risks and carrying out sensitivity analysis; and (vi) identifying actions to ensure project sustainability and proposing related assurances or covenants. The aforementioned work shall be implemented with reference to the updated technical guidance note (TGN) for Financial Management Assessment (2015), the 2015 TGN for project financial reporting and auditing and the 2014 TGN for preparation of cost estimates. For all other issues not covered by these 3 TGN, the 2005 publication “Financial Management and Analysis of Projects” should be referred.¹ Qualifications: Preferably a Master’s degree with broad-based work experience (10 years of relevant professional experience) recognized as an expert in financial analysis; proven analytical skills and working experience in ADB developing member countries, with a recognized accountancy such as a Chartered Accountant, Certified Public Accountant or Chartered Certified Accountant; CIS experience would be preferred. Russian and/or Turkmen language skills will be considered as an advantage.

9. Environmental Specialists (International, 3 PM; National, 3 PMs). Work as a team to undertake tasks including but not limited to the below:

- Prepare a Rapid Environmental Assessment (REA) checklist to confirm the environmental classification, for each of the three projects.
- Prepare an Environmental Assessment and Review Framework (EARF) for the Program covering all three phases, to provide guidance on assessment of direct, indirect and induced impacts of the project. In the EARF, also include an assessment of anticipated climate change and develop disaster preparedness plans if necessary.
- For each of the ensuing projects;
 - If the project is classified Category B, prepare an Initial Environmental Examination (IEE) Report in accordance with the ADB’s Safeguard Policy Statement 2009 (SPS 2009).
 - If the project is classified Category A, conduct a full-scale environmental impact assessment (EIA) in accordance with SPS 2009. Undertake all associated additional actions to help the EA be adherent to SPS 2009 for Category A projects.
 - The IEE or the EIA should include a fully costed Environmental Management Plan (EMP). The EMP should include environmental mitigation measures, a monitoring program, capacity building measures and institutional arrangements for EMP implementation, based on assessment of the capacity of the Government and MRT in addressing environmental problems. If existing facilities will be rehabilitated or reconstructed as part of the project, undertake environmental audit to check whether the existing facilities are in compliance with the Government environmental requirement, and with ADB’s environmental safeguards requirement. If discrepancies or incompliance will be identified, corrective actions should be proposed for each area of concern, including costs and schedule before and during the project implementation. The Environmental Compliance Audit Report could be attached as an appendix of the IEE or EIA.
 - Undertake calculations on the gross and net greenhouse gases arising from the project, in adherence to Guidelines for Estimating GHG Emissions of ADB Projects: Additional Guidance for Transport Projects. The sources of data for the calculation should be specified and the target year should be made clear.

¹ Available at: <https://www.adb.org/projects/operations/financial-management-resources>

- Conduct screening on noise and vibration arising at construction and operation. If screening points to major risks, conduct noise and vibration modelling. Based on such modelling, suggest practical arrangements to mitigate noise and vibration to acceptable levels, as defined by SPS 2009 and national legislation.
- Assist MRT in conducting public consultation as required by SPS 2009, obtaining necessary Government approval and permits and for commencing the project activities.
- Provide capacity building to MRT's safeguard specialists on ADB's environmental safeguards.

10. **Qualifications:** For the international consultant, relevant education background to undertake environmental impact assessment works; significant experience of preparing environmental impact assessment for similar projects; familiarity with implementation of Turkmenistan's environmental protection law; preferably a Master's degree and at least 5 years' experience in work related with environmental impact assessment. Familiarity with the ADB Safeguards Policy Statement (SPS) 2009 is a requirement. Russian and/or Turkmen language skills will be considered as an advantage. For the national consultant, relevant education background for data collection to prepare environmental impact assessment and some experience on preparing environmental impact assessment of project in Turkmenistan; good knowledge of Turkmenistan's environmental law and regulation; familiarity with the ADB Safeguards Policy Statement (SPS) 2009 is an advantage; preferably undergraduate degree with at least 3 years' experience. Russian and Turkmen language skills are required. Working knowledge of the English language is preferred.

11. **Resettlement Specialists (International, 2 PM; National, 3 PMs).** Work as a team to undertake but will not be limited to the following work:

- Through initial screening, confirm the project classification for Involuntary Resettlement (IR) and Indigenous Peoples Safeguards, for each of the three projects.
- Prepare options to minimize land acquisition and associated impacts for each of the three projects. Prepare a Resettlement Framework for the program.
- For each of the ensuing projects;
 - If the project is classified as B for resettlement, prepare a Resettlement Plan (RP) based on a census and assets inventory of the project affected persons that sets out strategies to mitigate adverse impacts and maintain living standards of affected people. It shall address the policy objectives of ADB and the government for land acquisition and resettlement, in line with the ADB SPS 2009 and relevant Government Law and Regulations.
 - Conduct a Social Impact Assessment involving 100% census and assets inventory of the project affected persons based on a detailed measurement survey, a survey of their socio economic conditions, and carry out meaningful consultations with the affected persons.
 - Describe the institutional arrangements for addressing social impacts/risks associated with the project, to develop grievance redress mechanism, and to develop effective arrangements to implement the RP.
 - Prepare an estimated budget as part of the RP for implementing RP covering all aspects.
 - Provide capacity building to MRT's safeguard specialists on ADB's involuntary resettlement safeguards.

- If the project is classified as A for resettlement, help MRT to undertake all necessary actions to make the project adherent to ADB SPS 2009 for such projects.

12. **Qualifications:** For the international consultant, relevant education background and significant experience in preparing RP and implementing land acquisition and resettlement in CIS countries; full understanding of ADB SPS 2009; preferably a Master's degree and over 7 years' experience and at least 3 years' work as resettlement specialist. Russian and/or Turkmen language skills will be considered as an advantage. For the national consultant, relevant education background to undertake survey and consultations, and market price data generation for compensation of lost assets as part of RP preparation, and some experience in preparing RP with full understanding on Turkmenistan law and regulation on land acquisition; preferably undergraduate degree from land management institute with at least 3 years' related work experience. Russian and Turkmen language skills are required. Working knowledge of the English language is preferred.

13. **Social Development and Gender Specialist (National, 2 PMs)** Undertake but will not be limited to the following work:

- Conduct social impact assessment other than social aspects covered by safeguards requirement, especially poverty assessment, gender assessment, participatory assessment, labor impacts and other social impacts as described in ADB's Handbook on Poverty and Social Analysis: A Working Document (December 2012), and Operations Manual C1-Poverty Reduction (14 July 2004), C2-Gender and Development (6 December 2010), and C3-Incorporation of Social Dimensions into ADB Operations (6 December 2010).
- Conduct socio economic survey to prepare Poverty and Social Impact Assessment in compliance with ADB's Handbook on Poverty and Social Analysis: A Working Document (December 2012).
- Propose gender classification for the project and prepare measures to comply with such classification, including gender action plan if it is warranted. Identify key entry points to mainstream gender considerations into the ensuing projects. Direct options include, but are not limited to (i) enhancement of roles for women employed in the railway subsector, including in the MRT (ii) provision of training opportunities for women, (iii) improvement to the policy environment that impacts on women's opportunities to take on jobs in the railway subsector, including encouraging policies (e.g., in the form of quotas), or discouraging policies (in the form of labor legislation that prohibits women from being employed in "dangerous" work; (iv) gender-responsive operations and maintenance of the railways, for example, in reserving jobs for women as ticket sellers, or in the maintenance work, or employment in sleeper factories. Indirect opportunities include (i) opportunities for enterprises run by women in the railway stations, and (ii) community-led livelihood opportunities, with significant women's participation, along the railway routes.
- Linked to the point above, prepare a participation plan that ensures women's participation in consultations, as well as ensuring that women-, children-, elderly, and Persons With Disabilities-friendly facilities will be put in place in coaches, railway stations, and sleeper factories. Furthermore, explore the possibility of community-development component(s) in the project which for example may directly target one community within the project area, including through tie-ups with educational and .
- Prepare a summary poverty reduction and social strategy including gender strategy and/or measures as appropriate.

14. Qualifications: relevant education background to conduct social impact assessment and significant experience in preparing poverty and social impact assessment. Familiar with ADB's policy on social impacts especially gender and poverty. Preferably a Master's degree with at least 5 years' related work experience. Russian and Turkmen language skills are required. Working knowledge of the English language is preferred.

15. **Railway Sector Specialists and Resource Persons (International, 1 PM; National, 1 PM).** Railway sector specialists and resource persons on railway operations, railway track engineering, signaling and telecommunication, sleepers, institution development, etc. may be engaged during project preparation. They will provide specialized expertise to MRT as regards (i) recent technology development in railway rehabilitation and asset management; (ii) improving the detailed design and cost estimates as needed; and (iii) other railway technical and institutional aspects as appropriate.