Luxembourg, 15th December 2021

Public

Environmental and Social Data Sheet

Overview

Project Name:	AGRA METRO RAIL PROJECT
Project Number:	2020-0796
Country:	India
Project Description:	The project concerns the construction of two interconnected urban metro rail lines, in aggregate 30 km long with 27 stations and the acquisition of the related rolling stock, in the historic city of Agra, in the state of Uttar Pradesh in Northern India.

EIA required: no

Project included in Carbon Footprint Exercise[1]: yes

(details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Environmental and Social Assessment

This project appraisal has been undertaken without an appraisal mission due to the COVID-19 pandemic crisis and related travel restrictions. Project's appraisal was based on review of project related reports and information requested and received from the Promoter as well as a series of conference calls with them.

The project comprises two lines; Corridor 1, will run from Sikandra to Taj East Gate (14km) whilst Corridor 2 will run from Agra Cannt. to Kalindi Vihar (15.4km). Corridor 1 comprises two elevated sections at either end and an underground section in the middle. Specifically, the section from Sikandra to slightly beyond ISBT Station is elevated, the section slightly beyond ISBT Station to slightly beyond Taj Mahal Station is underground and the section slightly beyond Taj Mahal Station to Taj East Gate is also elevated. The underground section is about 7.647km, while rest of the 6.353km are elevated. Corridor 2 is fully elevated and is separated into two sections (from Agra Cannt. to Agra College and from Agra College to Kalindi Vihar). Two maintenance depots are to be constructed (one in each Corridor). Both depots are located on either central or state government land. The project is at a very early stage; construction has commenced in Q4 2020 for a small part of one of the elevated sections of Corridor 1 (Taj East Gate to Basai) and for the Depot of Corridor 1.

The project supports the development of an integrated, sustainable and environmental friendly transport mode (metro), which has the potential to contribute to a transformative impact on Agra city. The project will upgrade the accessibility towards the various ancient monuments in the city, most outstandingly the Taj Mahal and Agra Fort that are also UNESCO World Heritage Sites (WHS). Metro operation is considered as a crucial step

[1] Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20,000 tonnes CO2e/year absolute (gross) or 20,000 tonnes CO2e/year relative (net) – both increases and savings.

towards minimizing the currently high air pollutant levels in these areas, to protect and preserve their identity as WHS.

The project is included in Agra's Comprehensive Mobility Plan (2011, updated in 2018) and is consistent with the Master Plan for Agra (2001) as well as Agra City Development Plan (2006). A Detailed Project Report (DPR) was prepared in December 2017, as per Metro Policy of the Ministry of Housing and Urban Affairs (MoHUA), Government of India.

Both the central government (Government of India-GoI) and the Government of Uttar Pradesh (GoUP) have already approved Agra Metro Project. Moreover, as the project will interfere with Taj Trapezium Zone (TTZ), a defined area of 10,400 sq. km around the Taj Mahal to protect the monument from pollution, permission to proceed with project's implementation was requested and has been granted by the Supreme Court (SC) of India (July, 2020). The approval is subject to certain conditions, related mainly to compensatory reforestation and collaboration with the National Monuments Authority (NMA) and the Archaeological Survey of India (ASI). The SC is the higher supervising authority that has been directly monitoring all the developments in the TTZ in order to protect and preserve the Taj Mahal monument and its surroundings, from pollution.

Moreover, in one of its Orders (dated 2017), the SC required the preparation of a Vision document, for protecting the TTZ in the coming decades. In this Vision document, the provision of accessibility to all key destinations through well-organized electric public transport modes is highlighted.

Environmental Assessment

If located in the EU, the project would fall under Annex II of EIA Directive 2011/92/EU, in which case it would be subject to screening by the Competent Authority, which would decide whether an EIA procedure is required or not. As per provisions of the Indian EIA Notification Act 2006, any new project or the expansion or modernization of any existing industry or project listed in Schedule I of the Notification shall submit an application for clearance to the Ministry of Environment, Forests and Climate Change (MOEFCC), GoI. Since metro rail projects are not included in Schedule I of the Notification, the project does not require an environmental clearance certificate from the MOEFCC nor a related EIA procedure. Nevertheless, the Promoter has voluntarily carried out an Environmental Impact Assessment (EIA) in line with EIB standards and prepared an EIA report consistent with the requirements of the Indian EIA Notification Act, 2006. The EIA report has been disclosed locally, as part of the Final DPR, which has been approved by the State and Central Government. The approval from GoI was granted in March 2019, based on the recommendation for approval from the Public Investment Board (in February 2019), after an interministerial consultation at Central Government level, including the MOEFCC.

The main residual negative environmental impacts of the project include: (i) permanent conversion of open lands to depots and metro corridors; (ii) cutting down of 1,823 trees; (iii) finite use of scarce, sometimes carbon intensive, materials, such as cement; and (iv) noise, vibration and visual intrusion for properties adjacent to the alignment. Other negative impacts are temporary and localised (traffic diversions and access restrictions, construction related air and noise pollution and dust and debris).

The main mitigants are: (i) compensatory reforestation in line with national legislation; (ii) various energy saving measures such as regenerative braking and use of solar panels; (iii) noise reduction measures (i.e. rubber dampers on the rails and use of a U girder for the elevated part of the alignment which acts in part as a noise barrier); and (iv) reuse of excavated material where feasible and disposal to waste in a regulated manner.

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Environmental mitigation measures and the foreseen individual mitigation plans are documented in an Environmental and Social Management Plan (ESMP) and as appropriate, have been and will be included as part of the works contract conditions. The mitigation measures are deemed sufficient, are in line with international and national best practices and the list of the foreseen mitigation plans is deemed complete. The Promoter will provide an updated version of the ESMP to the Bank, refining the contents and the cost of the individual mitigation plans.

The main positive environmental impacts of the project, resulting from reduced private vehicle use include: (i) reduction in local air pollution, which is extremely important to save the World Heritage Sites of Taj Mahal and Red Fort; (ii) road safety improvements; (iii) reduction of road noise and vibration; (iv) a reduction in greenhouse gas emissions compared to a situation without building the metro and (v) promotion of the awareness and appreciation of cultural heritage.

According to the EIA, the project does not affect any nature conservation areas or national parks and no rare or endangered species are known in the area of the project.

Cultural Heritage Assessment

Agra metro project is constructed in the vicinity of prominent ancient monuments. The list of ancient monuments along metro corridors includes in total twelve monuments, all protected under the Ancient Monuments and Archaeological Sites and Remains (AMSAR) Act (amendment and validation, 2010), while two of them are also UNESCO WHS (Taj Mahal and Agra Fort). The AMSAR Act specifies the area around a protected monument as “prohibited” (within 100 meters distance from the monument) and “regulated” (between 100-300 meters from the monument). Developments in prohibited areas fall under the auspice of the ASI and in the regulated areas under the responsibility of the NMA. Project’s alignment falls into the prohibited areas of four monuments (one in Corridor 1 and three in Corridor 2) and into the regulated areas of seven monuments (Agra Fort is one of them being 105m from the project), while is beyond the regulated area of the Taj Mahal (505m from the project).

Impacts on Cultural Heritage were initially assessed as part of the EIA, in the DPR. Complementary to this, a full Heritage Impact Assessment (HIA) was prepared in the beginning of 2019 for the project, following the International Council on Monuments and Sites (ICOMOS) guidance on HIA for Cultural World Heritage Properties. According to the HIA performed, none of the protected structures, including the WHS of Taj Mahal and Agra Fort, are expected to suffer any damage due to metro construction. Especially concerning structural impacts, to ensure this, detailed pre- and post-construction building survey shall be carried out, as part of the works contract conditions, to guide structural consolidation before metro works and structural monitoring during execution of the metro works.

As documented in the HIA, the main negative impacts expected will be during construction, thus temporary, and concern mainly visual barriers to monuments, physical access restrictions and changes towards monuments, construction related air and noise pollution and dust and debris.

Mitigation measures and further required scientific studies (e.g. vibration studies, ground penetrating radar survey, etc.) are documented in the HIA, for both construction and operation phases, for both listed heritage resources along metro corridors as well as intangible cultural heritage, with respect to the severity of the predicted negative impacts. The aforementioned measures and studies will form the basis for the site-specific detailed Cultural Heritage Management & Monitoring Plans (CHMMP(s)) that will be developed in consultation with

experts/stakeholders, including ASI-Agra Circle and NMA, prior to construction commencement.

According to the AMSAR Act, site-specific permissions are required and must be granted prior to construction commencement, when construction is taking place in the prohibited or the regulated area of a protected monument. For projects within the regulated area, the competent authority to grant such permission is the Office of the Commissioner in Agra after the no objection certificate (NOC) and the recommendation actions from the NMA. For projects within the prohibited area the competent authority is the Director General, ASI of Agra Circle but only in the case the project is considered essential to the public and does not have substantial adverse impacts on the preservation, safety, security of, or, access to, the monument or its immediate surroundings. Although not in the provision of AMSRA Act, NMA usually provides their NOC and recommendations prior to ASI permission.

Concerning the current on-going sections of the project (Taj East Gate to Basai and the Depot of Corridor 1), they do not fall in any of the monuments protected areas (neither prohibited nor regulated). The NMA NOC is already in place for the priority (underground) section of Corridor I, currently under procurement, as the section runs through the regulated area of three prominent monuments, namely Delhi Gate, Jama Masjid and Agra Fort. NMA's NOC is subject to certain implementation conditions to (re)assure that mitigation measures will be duly managed and monitored; the most important concern (i) works' supervision by the ASI, (ii) setting up of a joint technical experts committee to monitor works and mitigation measures and report back to NMA and ASI on a monthly basis, and (iii) installation of monitoring equipment on all monuments along the section, measuring vibrations and structural impacts (from construction and later operation).

According to the Promoter, NMA's and/or ASI's NOCs will be requested by phase and depending on the construction timeline for each section. Copies of the remaining NOCs (for elevated sections Sikandra-ISBT and Agra College-Kalindi Vihar) shall be provided in phases to the Bank, as disbursement conditions. Copies of the progress and monitoring reports, as requested by the NMA and/or the ASI in their NOCs, shall be kept and made available to the Bank upon request.

Concerning Cultural Heritage, the project is expected to have a long-term positive impact on monuments conservation, promotion and awareness through the improvement of the air quality around them as well as the enhanced accessibility and connectivity.

Climate Change and Paris Alignment

The project has low climate risk and no major natural hazards due to climate change are foreseen that might affect the project. It is envisaged that the climatic conditions prevailing at Agra with respect to precipitation, floods, temperature, humidity, winds etc., would not pose any major risk to the proposed metro system. Nevertheless, structural adaptation measures are integrated in project's design, such as considering highest flood level for foundations of elevated structures or platform level of stations, temperature and wind are considered and taken care by controlling deflections and stresses in structures etc.

The project supports investment in public transport (construction of metro). Hence, the project is considered Paris aligned and eligible following EIBs Climate Bank Roadmap guidelines. Moreover, the Project provides a substantial contribution to Climate Mitigation and Climate Adaptation according to EIB's Climate Bank Roadmap and a substantial contribution to Environmental Sustainability.

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EIB Carbon Footprint Exercise

With the project, the annual emissions in a standard year of operation were estimated at 10.3 kT CO2 equivalent per year (absolute emissions). Without the project, namely with the current mode split between private vehicles and buses, the annual emissions were estimated at 30.8 kT equivalent per year (baseline emissions).

Therefore, the emissions savings for the project in a standard year of operation were estimated to be approximately (-) 20.6 kT of CO2 equivalent per year, a reduction of 67%. These calculations are based on the current country grid[2]. As the carbon footprint of the Indian grid improves, it is expected that so will the CO2 performance of the metro. In addition, the Promoter has an energy efficiency strategy, including traction and no-traction related measures (i.e. regenerative braking, HVAC scheduling and consumption monitoring, LED at stations, etc.) and is also planning to install solar panels on the depot and stations roof, which could further reduce the carbon footprint of the project.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

Social Assessment, where applicable

Based on the Social Impact Assessment (SIA) report prepared in 2016, the main adverse social impact is related to involuntary resettlement. The project proposes to acquire about 88.91ha. of land for the project out of which 1.88ha is private and 87.03ha government land. Total affected families are estimated to be 119 with total project affected people to be 572. Corridor 2 has 62 residential and 5 commercial structures likely to be affected as compared to the 38 residential and 12 commercial structures in Corridor 1.

A complete assessment of resettlement impact will be known once the project corridors' design and subsequently the census of affected households for all corridors (including depots) are completed. However, all attempts have been made to minimize the impact of land acquisition, resettlement and adverse impacts on the livelihood of affected people by making use of careful local engineering in the design.

The promoter finalized a Resettlement Policy Framework (RPF) consistent with EIB requirements. An early draft of RPF has been subject to consultation with Project Affected Persons. The Promoter shall approve and disclose the final RPF before project's approval by the Bank.

A Resettlement Action Plan (RAP) will be prepared consistent with EIB requirements. This RAP will be prepared in consultation with all project-affected persons and will be disclosed on the website of the Promoter and EIB. The RAP is to be implemented in a manner consistent with the handover of site to works contractors. For the RAP, corridor wise detail measurement survey will be carried out and cut-off date will be declared with the start of census and with adequate public dissemination. To avoid any disproportionate negative environmental and/or livelihood impacts on vulnerable groups, identified vulnerable households will receive additional financial and in-kind assistance. Special attention will be given to the non-titleholders. In addition to private commercial and residential buildings, there are some common property assets such as religious structures and local utilities that may be affected due to the proposed alignment. The unavoidable loss of such assets will be compensated through replacement elsewhere or a suitable financial mechanism, in consultation with the local people.

[2] EIB Project carbon Footprint Methodologies, Version 11.1, July 2020

Other potential social risks arising due to the project are: (i) poor application of relevant labour standards related to employee working conditions during construction and operation and (ii) poor occupational and community health and safety during construction. These will be addressed primarily through the inclusion of contractual obligations for the first tier suppliers and contractors, which will be enforced by the Promoter's supervision team and external supervision in environmental, health & safety and social matters.

Impact on Gender equality
Agra Metro project includes planning and design features that would enhance access, safety and security for women/girls. The project is also expected to increase and safeguard women's employment as the Promoter is a gender-inclusive agency and has a clear policy and distress mechanism around sexual harassment at work. Finally, the Promoter has agreed to establish a framework for Gender Policy with a quantitative target for Gender employment. Thus, the project is expected to have a significant positive impact for women in Agra and reverse their disproportional disadvantage on affordable, safe and secure access to economic and social functions.

Public Consultation and Stakeholder Engagement

The Promoter has performed several rounds of administrative consultation as well as public consultation during the preparation of the ESIA report. As part of the DPR, the public raised issues including construction related disturbances such as noise and traffic control, labour camps locations, tree cutting and resettlement. All of which are being addressed by the Promoter. The ESIA report, as part of the DPR, including a non-technical summary, has been made public on the Promoter's website.

Furthermore, prior to the first disbursement, the Promoter will prepare a Stakeholder Engagement Plan that will outline future stakeholder engagement activities including those related to the ESMP, CHMMP(s) and RAP processes and guide their rollout. It will identify and prioritise key stakeholder groups, such as PAPs, local/state authorities (including cultural heritage competent authorities), local businesses, public transport/auto operators, NGOs etc.

Other Environmental and Social Aspects

The Promoter will be responsible for overseeing and ensuring implementation of Environmental and Social Management Plans, most notably ESMP, CHMMP(s), SEP and RAP. For this, the promoter has already established an Environment and Social Safeguard Unit headed by the Director of Works & Infrastructure. A General Consultant, providing sufficient qualified environmental staff, is already on-board, while the processes for engagement of a Social consultant and a Cultural Heritage consultant are already in progress. The Promoter and its specialized Consultants shall provide sufficient qualified environmental, cultural heritage and social staff within their organisations with gained experience working with MDBs on other metro projects in India.

An independent monitoring and evaluation consultant will be commissioned, who will periodically monitor and report on delivery of the ESMP, CHMMP(s) and RAP as well as perform a mid and end of term evaluation of the aforementioned Plans implementation.

An appeal has been filed to the SC challenging overall the development of the Agra Metro project due to its possible environmental impacts in the TTZ. The matter was presented to the SC early in 2021 but the final hearing has not been confirmed yet. The Promoter will report regularly on the final hearing arrangement and provide the final decision on the appeal to the Bank.

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Conclusions and Recommendations

The EIB will condition its loan disbursements on:

1. Before first disbursement, the Promoter will provide to the satisfaction of the Bank, copies of the RAP for Corridor 1 (Sikandara to Taj East Gate) and Corridor 2 (Agra Cantt. to Kalindi Vihar), including the depots, and a RAP Monitoring Plan that is consistent with the monitoring framework outlined in the RAP;
2. Before first disbursement, the Promoter will provide to the satisfaction of the Bank an updated version of the ESMP, refining the contents and the cost of the individual mitigation plans and measures;
3. Before first disbursement, the Promoter will provide to the satisfaction of the Bank, as part of the ESMP, a copy of the Stakeholders' Engagement Plan;
4. Before any disbursement, the Promoter will provide to the satisfaction of the Bank copies of the CHMMP(s) and their approval by the Competent Authority;
5. Before any disbursement, provide all available no objection certificates from ASI and/or NMA related to the project's construction (for sections falling in protected areas of monuments);
6. Before any disbursement: the Promoter will ensure that the project implementation team includes environmental, cultural heritage and social/resettlement experts to implement the ESMP, CHMMP(s) and RAP.

In addition, the Bank will seek commitments from the Promoter to: (i) comply with Bank's social and environmental standards and monitor and report on its implementation regularly, to the Bank's satisfaction; (ii) ensure that the ESMP and relevant Bank's social and environmental standards are included in the tender documents of the main work contracts; (iii) implement the project in accordance with the agreed ESMP, CHMMP(s), RPF and RAP; (iv) report regularly on the status of RAP, CHMMP(s) and ESMP implementation; (v) share, upon the Bank's request, copies of the progress and monitoring reports, requested by the NMA, in relation to construction performed in the protected areas of protected ancient monuments; (vi) ensure that no eviction happens before the RAP is approved and PAPs, including informal, are compensated in accordance to the approved matrix; (vii) ensure that the RAP Monitoring Plan is updated as needed and to the satisfaction of the Bank; (viii) ensure that the SEP is updated as needed and to the satisfaction of the Bank; (ix) present mid and end of term evaluation of RAP(s), CHMMP(s) and ESMP implementation prepared by a third party; (x) report regularly on final hearing's arrangement and provide the final decision on the on-going appeal filled to the SC challenging overall the development of the Agra Metro; (xi) prepare a Gender Policy with a quantitative target for Gender employment of women during project construction and operation.

Subject to the aforementioned environmental and social conditions being met, the Project is expected to be acceptable for EIB financing in Environmental and Social terms.