



# Periodic Financing Request Report

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Project Number: 43332  
December 2013

People's Republic of China: Railway Energy  
Efficiency and Safety Enhancement Investment  
Program (MFF): Tranche 4

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of as of 1 October 2013)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.16339
\$1.00	=	CNY6.1202

## ABBREVIATIONS

ADB	–	Asian Development Bank
CRC	–	China Railway Corporation
DMF	–	design and monitoring framework
EA	–	executing agency
EIRR	–	economic internal rate of return
FCTIC	–	Foreign Capital and Technical Import Center
FFA	–	framework financing agreement
LIBOR	–	London interbank offered rate
MFF	–	multitranches financing facility
MOR	–	Ministry of Railways
PMO	–	project management office
PFR	–	periodic financing request
PRC	–	People's Republic of China
TA	–	technical assistance

## NOTES

In this report, "\$" refers to US dollars.

<b>Vice-President</b>	S. Groff, Operations 2
<b>Director General</b>	A. Konishi, East Asia Department (EARD)
<b>Director</b>	T. Duncan, Director, Transport Division, EARD
<b>Team leader</b>	X. Chen, Senior Transport Specialist (Railways), EARD
<b>Team members</b>	T. Bisht, Safeguards Specialist, EARD F. Connell, Principal Counsel, Office of General Counsel G. O'Farrell, Environment Specialist, EARD W. Zhang, Senior Transport Officer, PRCM L. Cuevas-Arce, Senior Operations Assistant, EARD M. Macrohon, Associate Project Analyst, EARD
<b>Peer reviewer</b>	M. Roesner, Senior Transport Specialist, South Asia Department

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## TRANCHE AT A GLANCE

Project Name	Railway Energy Efficiency and Safety Enhancement Investment Program – Tranche 4		PFR No.	4	
			Project No	43332	
Country	PRC		Department	EARD	
Date of Receipt by ADB of PFR Request	1 October 2013		Division	EATC	
Project Data Sheet	<a href="http://www.adb.org/projects/43332-013/main">http://www.adb.org/projects/43332-013/main</a>				
Tranche Summary (as requested by the Government in PFR)					
<b>A. Impact and Outcome</b>					
<p>The impact of Tranche 4 will be an improved transport system in the southwestern region of the PRC that supports sustainable socioeconomic development and the western region development strategy. The outcome of Tranche 4 will be an energy-efficient, safe, reliable, affordable, and environment-friendly railway transport system developed in the southwestern region of the PRC.</p>					
<b>B. Outputs</b>					
<p>Tranche 4 will finance the introduction of environmental protection and safety enhancement equipment.</p>					
<b>C. Implementation Arrangements</b>					
<p>Tranche 4 will be implemented over 5 years (January 2014–December 2018) including procurement, installation, and system commissioning activities. China Railway Corporation (CRC), formerly the Ministry of Railways (MOR), will be the executing agency (EA) for overall project implementation. The EA will set up a steering committee to provide strategic guidance and oversight for project implementation. The Foreign Capital and Technical Import Center (FCTIC) under the CRC will coordinate the project management and will be responsible for procurement, withdrawals, and reporting to ADB. CRC confirmed that the staff employed will be experienced in technical, financial, and administrative matters; and in implementing projects financed by international financial institutions. An assessment of the financial management capacity of CRC was undertaken and confirmed that CRC has adequate capacity to manage the investment program and Tranche 4.</p>					
<b>D. Project Readiness</b>					
<p>The proposed investment has been approved by the steering committee and the government. The PMO was established and staffed. The design of the project has been completed. Two tendering companies were selected on a competitive basis to assist CRC in all ADB-financed procurement under Tranche 4. A design institute has been engaged to draft the bidding documents for the first procurement in accordance with ADB's Procurement Guidelines (2013, as amended from time to time).</p>					
<b>Tranche Sector Classification</b>					
		Sector:	Transport, and information and communication technology		
		Subsectors:	Rail transport		
<b>Tranche Thematic Classification</b>					
		Theme:	Economic growth		
		Subthemes:	Promoting economic efficiency and enabling business environment, and widening access to markets and economic opportunities		
<b>Climate Change Impact</b>					
		Adaptation		Mitigation	

Gender Mainstreaming	Gender equity theme			
	Effective gender mainstreaming			
	Some gender elements			
	No gender elements			✓
Targeting Classification	General Intervention			✓
	Targeted Intervention			
	(i) Geographic dimensions of inclusive growth			
	(ii) Millennium Development Goals			
	(iii) Income poverty at household level			
Location Impact	Rural	High	National	✓ Medium
	Urban	Medium	Regional	✓ Low
Tranche Risk Categorization	Low Risk	✓	Complex	
Safeguard Categorization				
	Category	Required Document		Disclosure Date <sup>2</sup>
(i) Environment	C	n/a		n/a
Weblink:				
(ii) Involuntary resettlement	C	n/a		n/a
Weblink:				
(iii) Indigenous peoples	C	n/a		n/a
Weblink:				
Financing Requested from ADB	Modality	Source	Amount (\$ million)	
	Tranche 4 under MFF	OCR	180.00	
	Total		180.00	
	Source		Amount (\$ million)	
Cofinancing	n/a			
Counterpart Financing	CRC (67.13%)		367.60	
Aid Effectiveness	Parallel project implementation unit			
	Program-based approach			✓
Significant Developments in the MFF and Previous Tranches				
<p><b>MFF 0040-PRC.</b> On 10 July 2013, ADB approved (i) the extension of the MFF availability period by 2 years from 30 June 2017 to 30 June 2019, (ii) extension of the application date of the last tranche from 30 June 2013 to 30 June 2015, and (iii) change of name of the executing agency from Ministry of Railways to China Railway Corporation.</p> <p><b>Tranche 1 (Loan 2605-PRC)</b> is to finance introduction of energy-efficient technologies, environment-friendly equipment, and safety equipment in the railway sector in southwestern PRC. It is envisaged to be implemented over 6 years from June 2010 to June 2016. As of 1 October 2013, a total of five contracts amounting to \$35.4 million (11.8% of the total loan amount) had been awarded, and about \$6.59 million (18.6% of the total contract value) disbursed. The bidding documents for 16 packages with a total estimated cost of \$86.8 million and 18 packages with a total cost of \$179.9 million are to be submitted to ADB for review by 30 December 2013 and 30 December 2014 respectively. Disbursement is expected to reach \$9.7 million in 2013. The performance of Tranche 1 is on track.</p>				

**Tranche 2 (Loan 2724-PRC)** comprises (i) introducing railway safety equipment, (ii) conducting a safety audit of a nominated railway administration, and (iii) providing capacity building support. Tranche 2 will be implemented over 6 years. The closing date is scheduled on 30 June 2017. By 9 September 2013, the procurement under Tranche 2 had been completed. All six contracts have been awarded, with a total contract value of \$101.1 million. About \$27.9 million has been disbursed under this tranche, accounting for 27.9% of the total contract value. An additional \$30.0 million is expected to be disbursed in 2013. Disbursement is expected to reach \$90.0 million by the end of 2014, accounting for 90% of the total value of the loan, and is expected to be completed by 31 December 2015. Tranche 2 is expected to be closed by 30 June 2016, 1 year ahead of schedule. The project performance of Tranche 2 is on track.

**Tranche 3 (Loan 2765-PRC)** is to finance the introduction of (i) railway energy-efficient equipment, (ii) railway environmental protection equipment, and (iii) railway safety enhancement equipment. Five contracts for railway signaling equipment and fasteners amounting to a total of \$69.3 million (27.7% of the total loan amount) have been awarded under this tranche. As of 1 October 2013, \$11.4 million has been disbursed (about 16.4% of the total contract value). The bidding documents for two lots with a total estimated cost of \$14 million were issued on 17 September 2013, and another 7 lots with an estimated cost of \$30.2 million for the electrification system are to be submitted to ADB for review in November 2013. Disbursement are expected to reach \$26.42 million by 31 December 2013, and \$225 million by the end of 2014. Tranche 3 is expected to be closed by 30 June 2016, 1 year earlier than the original schedule of 30 June 2017.

**Piggybacked TA: Railway Institutional and Capacity Development.** An international consulting firm was engaged to provide 14 person-months of international and 16 person-months of national consultant services. The consultants were mobilized on 12 October 2011. Safety and energy audits for Kunming Railway Administration were conducted and environmental management practices reviewed for the Nanning–Kunming rail line. Study tours in Europe and North America were fielded to learn about international best practices and workshops were held to share the findings of the TA. Safety practices in tunnel design, construction and operation of high-speed long tunnels in Europe were especially valuable. The policy brief summarizing the findings of the TA were submitted to ADB and the EA in December 2012, together with the final report with a view to being incorporated into relevant regulations and plans.

Activities for Tranches 1, 2 and 3 are fully compliant with the FFA and Legal Agreements of the Investment Program.

CPS/COBP

<http://www.adb.org/sites/default/files/cobp-prc-2013-2015.pdf>

## I. BACKGROUND

1. Since the open door policy and economic reforms were initiated, the People's Republic of China (PRC) has sustained high levels of economic growth which resulted in a rapid increase in the demand for transportation. Despite the PRC's efforts to increase the country's transport capacity, serious constraints and bottlenecks remain, especially in the railway sector. The Government of the PRC (the government) has prioritized railway development because the rail sector has played a crucial role in transportation and in promoting sustainable economic growth and social development due to its environment-friendliness, energy efficiency, reliability and affordability and lower land take. Given its developmental role, the government has emphasized railway development in the less-developed western region with a view to reducing disparities in regional economic development between the coastal and western areas. In its development plan, the government is aiming to expand the railway network from 91,000 kilometers (km) in 2010 to 120,000 km by 2015; and from 36,000 km to 50,000 km in the less-developed western region.

2. With railway network extension, energy efficiency, environmental sustainability and safety enhancement have been important elements of the ADB policy dialogue with the China Railway Corporation (CRC), formerly the Ministry of Railways (MOR). These were identified as the three most important areas of sustainable development in the Eleventh and Twelfth Five-Year Plans (11FYP and 12FYP). ADB helped create awareness of these three issues and encouraged the use of clean energy and energy-efficient technologies, safety enhancement, and environmental improvements in railway construction, operation, and maintenance so as to develop a sustainable, green, and safe railway system with high quality and efficient services in the PRC.

3. On 8 December 2009, ADB approved a multitranche financing facility (MFF) in the amount of \$1.0 billion to the government for the Railway Energy Efficiency and Safety Enhancement Investment Program (Investment Program) from ADB ordinary capital resources with interest determined in accordance with ADB's LIBOR-based lending facility and such other terms and conditions set forth in the related loan agreement. The Framework Financing Agreement (FFA) was signed between the PRC and ADB on 10 November 2009. The impact of the investment program will be an improved transport system in the southwestern region of the PRC that supports sustainable socioeconomic development. The outcome will be an energy-efficient, safe, reliable, affordable, and environment-friendly railway transport system developed in the region. The outputs of the investment program comprise (i) introduction of energy-efficient technologies and environment-friendly and safety equipment; (ii) integration and institutionalization of energy efficiency and environmental issues in railway management; (iii) safety and energy audits of a nominated railway administration; and (iv) capacity building support.

4. CRC is the executing agency (EA) for the investment program.<sup>1</sup> A project management office (PMO) has been established to implement the IP. The MFF is expected to extend multiple loans to finance three to six tranches. ADB has approved three tranches for a total of \$650 million.

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<sup>1</sup> On 10 July 2013, ADB approved the change in name of the executing and implementing agencies from the Ministry of Railways to the China Railway Corporation.

5. On 1 October 2013, ADB received the government's Periodic Financing Request dated 26 September 2013 for Tranche 4 (PFR4) for \$180 million.<sup>2</sup> The processing of the PFR4 is consistent with the requirements of the FFA.

## II. ASSESSMENT OF MFF IMPLEMENTATION

6. The government can submit a PFR when it is ready to use further equipment and materials specified in the IP, which is then financed through an MFF tranche. Each tranche should cover investments located in the southwestern PRC and meet the established selection criteria for equipment and materials. The first three tranches have been implemented satisfactorily despite an initial implementation delay for Tranche 1.<sup>3</sup> The current project ratings are “on track”.

7. **Tranche 1: Loan 2605-PRC (\$300 million).** Tranche 1 comprises introduction of energy-efficient technologies, environment-friendly equipment, and safety equipment in the region. Tranche 1 was approved on 15 December 2009. The loan agreement was signed on 8 June 2010 and became effective on 26 October 2010. The loan closing date is 30 June 2016. As of 1 October 2013, a total of 5 contracts amounting to \$35.4 million under Tranche 1 have been awarded (11.8% of the total loan amount), about \$6.59 million disbursed (18.6% of the total contract value). The bidding documents for 16 packages with a total estimated cost of \$86.8 million and 18 packages with a total estimated cost of \$179.9 million will be submitted to ADB for review by 30 December 2013 and 30 December 2014 respectively. Disbursement is expected to reach \$9.7 million in 2013. Tranche 1 is expected to be completed as planned.

8. **Tranche 2: Loan 2724-PRC (\$100 million).** Tranche 2 is financing introduction of railway safety equipment. It was approved on 14 December 2010. The loan agreement was signed on 11 March 2011 and declared effective on 10 June 2011. Tranche 2 is scheduled to be implemented over 6 years from 31 December 2010 to 31 December 2016. The closing date is scheduled on 30 June 2017. By 9 September 2013, procurement under Tranche 2 had been completed. All six contracts had been awarded, with a total contract value of \$101.1 million (101.1% of the total loan amount).<sup>4</sup> About \$27.9 million had been disbursed, accounting for 27.9% of the total contract value. An additional \$30.0 million is expected to be disbursed in 2013. Disbursement is expected to reach \$90.0 million by the end of 2014, accounting for 90% of the total value of the loan, and completed by 31 December 2015. Tranche 2 is expected to be closed by 30 June 2016, 1 year ahead of schedule. The implementation of Tranche 2 has been satisfactory.

9. **Tranche 3: Loan 2765-PRC (\$250 million).** Tranche 3 comprises introduction of (i) railway energy-efficient equipment, (ii) railway environmental protection equipment, and (iii) railway safety enhancement equipment. It was approved on 20 July 2011. The loan agreement was signed on 25 October 2011 and became effective on 15 February 2012. Five contracts for railway signaling equipment and fasteners for a total of \$69.3 million (27.7% of the loan amount) have been awarded under this tranche. As of 1 October 2013, \$11.4 million had been disbursed (about 16.4% of total contract value). The bidding documents for two lots with a total estimated cost of \$14 million were issued on 17 September, and another 7 lots for

<sup>2</sup> Periodic Financing Request for Tranche 4 (accessible from the list of linked documents in Appendix 2).

<sup>3</sup> The progress of Tranche 1 from August 2011 to August 2012 was slow because the government carried out a review of the safety of all railway projects and deferred financing of new railway projects, following the rail accident in Wenzhou on 23 July 2011. The safety review was completed by March 2012, and the government has increased its investment in new railway projects since August 2012. This led to improved implementation performance for the ongoing tranches under the investment program from the beginning of 2013.

<sup>4</sup> The cost overrun will be financed by local funds.



\$30.2 million for the electrification system will be submitted to ADB for review in November 2013. Disbursement is expected to reach \$26.42 million by 31 December 2013, and \$225 million by the end of 2014. Tranche 3 is expected to be closed by 30 June 2016, 1 year ahead of the original schedule.

10. **Piggybacked TA: Railway Institutional and Capacity Development (the TA).** This was to (i) conduct safety and energy audits of a nominated railway administration; and (ii) provide capacity building support. An international consulting firm was engaged through quality- and cost-based selection method and provided 14 person-months of international and 16 person-months of national consultant services. The consultants were mobilized on 12 October 2011. Inception and review missions were fielded after receipt of the inception report in November 2011, interim report in February 2012, and the draft final report in July 2012. Safety and energy audits were conducted and environmental management practices reviewed for the Nanning–Kunming rail line. A handbook on rail safety was included in the final report. Study tours were conducted focusing on railway safety and energy efficiency best international practices in Europe and North America. Safety practices in tunnel design, construction and operation for the high-speed long tunnels in Europe were especially valuable. Workshops enabled the results of the tours to be disseminated to a wider audience in the PRC. A policy brief summarizing the findings of the TA was prepared, together with a final report in December 2012. The TA was financially closed on 16 May 2013, and the TA completion report is scheduled to be circulated by 30 June 2014.

11. **Safeguard Compliance.** The IP selection criteria require that equipment installation will not involve land acquisition, have adverse impacts on ethnic minorities, or have negative environmental impacts. CRC is required to examine compliance in this regard and report the results semiannually to ADB. Safeguard compliance assessment for the previous tranches have been closely monitored and reported periodically through the semi-annual progress and due diligence reports to ADB. The first assessment for Tranche 1 was submitted to ADB on 31 July 2011. The latest assessments for the three tranches were submitted to ADB in July 2013. CRC reported that the equipment installation did not involve land acquisition, have adverse impacts on ethnic minorities, or have negative environmental impacts. In 2010, 2011 and 2012, ADB and CRC carried out joint annual reviews of compliance with assurances in the loan agreements and confirmed that the tranches are unlikely to have negative environmental impacts. PFR4 states that all the requirements prescribed in the FFA and legal agreements have been complied with to date during the implementation of Tranche 1, Tranche 2, and Tranche 3. Summary reports on the compliance status of Tranche 1, Tranche 2, and Tranche 3 have been prepared and include details of the compliance with covenants in the Loan Covenant Compliance Status<sup>5</sup> and the updated facility administration manual (FAM),<sup>6</sup> respectively.

### III. PERIODIC FINANCING REQUEST

#### A. Impact and Outcome

12. The impact will be an improved transport system in the area of southwestern region of the PRC that supports sustainable socioeconomic development and the western region development strategy. The outcome will be an energy-efficient, safe, reliable, affordable, and environment-friendly railway transport system developed in the southwestern region.

<sup>5</sup> Loan Covenant Compliance Status (accessible from the list of linked documents in Appendix 2).

<sup>6</sup> Updated Facility Administration Manual (accessible from the list of linked documents in Appendix 2).

## B. Outputs

13. The outputs under Tranche 4 are (i) environmental protection and (ii) railway safety enhancement.

- (i) **Environmental protection output.** This comprises introduction of environmental protection equipment.
- (ii) **Railway safety enhancement output.** This comprises introduction of track safety operation and maintenance equipment, anti-seismic bridge bearings, enhanced railway fasteners, heavy duty switches, and signaling system facilities.

14. This equipment will be more environment-friendly and safer than currently used in southwestern PRC railways and will have significant environmental and safety benefits.

## C. Investment and Financing Plans

15. Tranche 4 is estimated to cost \$547.60 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the FAM.

**Table 1: Tranche Investment Plan**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Tranche 4 Base Cost<sup>b</sup></b>	
1. Environmental Protection Component	15.23
2. Safety Enhancement Component	506.19
<b>Subtotal (A)</b>	<b>521.42</b>
<b>B. Contingencies<sup>c</sup></b>	<b>15.73</b>
<b>C. Financing Charges During Implementation<sup>d</sup></b>	<b>10.45</b>
<b>Total (A+B+C)</b>	<b>547.60</b>

<sup>a</sup> Includes taxes and duties of \$15.20 million to be financed from the China Railway Corporation resources.

<sup>b</sup> In mid-2013 prices.

<sup>c</sup> Price contingencies computed at 1.0% for 2011, 0.0% for 2012, 0.3% for 2013, and 0.5% thereafter on foreign exchange costs; and 1.0% for 2011, 1.5% for 2012, and 2.0% thereafter on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year fixed swap rate plus 40 basis points and 20 basis points maturity premium. Commitment charges to the ADB loan are computed at 0.15% per year on the projected undisbursed amount.

Source: Asian Development Bank estimates.

16. The government has requested a loan of \$180 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 5 years, an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions as agreed in the FFA and loan agreements.<sup>7</sup>

<sup>7</sup> The interest rate includes a maturity premium of 0.2% based on Borrower's choice of loan terms and repayment options.

17. The government has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility on the basis of these terms and conditions, and (ii) an undertaking that these choices were its own independent decision and not made in reliance on any communication or advice from ADB.

18. The financing plan is in Table 2. The ADB loan will finance 32.87% of the cost of Tranche 4. The remaining cost will be financed by CRC. Taxes, duties, price contingencies, and financing charges during implementation will be financed by CRC. The government and CRC have assured ADB that CRC will provide additional counterpart funding for any shortfall of funds or cost overruns to ensure the success of Tranche 4 investment.

**Table 2: Financing Plan**

<b>Source</b>	<b>Amount</b> (\$ million)	<b>Share of Total</b> (%)
Asian Development Bank (OCR)	180.00	32.87
China Railway Corporation	367.60	67.13
<b>Total</b>	<b>547.60</b>	<b>100.00</b>

Source: Asian Development Bank staff estimates.

#### **D. Implementation Arrangements**

19. CRC will be the executing agency (EA) responsible for overall project implementation. It has set up a steering committee to provide strategic guidance and oversight for project implementation. CRC's Foreign Capital and Technical Import Center (FCTIC)<sup>8</sup> will coordinate the project management and be responsible for procurement, withdrawals, and reporting to ADB. CRC confirmed that the staff employed will be experienced in technical, financial, and administrative matters; and in implementing projects financed by international financial institutions. An assessment of the financial management<sup>9</sup> capacity of CRC was undertaken and confirmed that CRC has adequate capacity to manage the investment program. Tranche 4 will be implemented over 5 years (January 2014–December 2018). The disbursements of Tranche 4 are expected to be completed by 30 June 2019.

20. The implementation arrangements are summarized in Table 3 and described in detail in the updated FAM.

**Table 3: Implementation Arrangements**

<b>Aspects</b>	<b>Arrangements</b>
Implementation period	January 2014–December 2018
Estimated completion date	31 December 2018 (loan closing date: 30 June 2019)
<b>Management</b>	
(i) Oversight body	Steering Committee in China Railway Corporation (CRC) Director General (chair) Heads of all concerned departments and agencies (members)
(ii) Executing agency	CRC will be the executing agency for the project via its Foreign Capital and Technical Import Center (FCTIC).

<sup>8</sup> FCTIC has implemented 13 ADB-financed loan projects including Tranches 1, 2, and 3 of the Investment Program and nine policy and advisory and capacity development technical assistance projects since 1994 as the executing agency. Experience from completed and ongoing projects shows that FCTIC has strong capacity in project implementation.

<sup>9</sup> A financial management assessment is accessible from the list of linked documents in Appendix 2.

Aspects	Arrangements		
	CRC through FCTIC will be responsible for the planning, implementation, financing, and operation of the equipment and facilities after its completion, and will coordinate the project management office's tasks and be responsible for procurement, withdrawals, and reporting in relation to ADB.		
(iii) Key implementing agencies	FCTIC		
(iv) Implementation unit	Project Management Office, staff of 18		
Procurement	International competitive bidding	8 contracts	\$180 million
Retroactive financing and/or advance contracting	If approved, retroactive financing will apply to the procurement of track safety operation and maintenance equipment, and up to 20% of the ADB loan amount, with respect to expenditures incurred prior to loan effectiveness but not earlier than 12 months before signing of the loan agreement.		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2012, as amended from time to time) and detailed arrangements agreed upon between the Government and ADB.		

Source: Asian Development Bank.

## E. Project Readiness

21. The preliminary designs of the project have been completed. The project was approved by the steering committee and the government in December 2012. The PMO was established and staffed. Two tendering companies, CMC International Tendering Corporation and CITIC International Tendering Co., Ltd., were selected on a competitive basis to assist CRC in all ADB-financed procurements under Tranche 4. The EA is ready to draft the bidding documents for the first procurement in accordance with ADB's Procurement Guidelines. To assist in smooth implementation, an updated FAM has been prepared.

## F. Advance Contracting and Retroactive Financing

22. For each tranche, retroactive financing of eligible expenditures may be considered and allowed by ADB management when included in a PFR. Total retroactive financing will not exceed an amount equivalent to 20% of the loan amount and must have been incurred prior to the loan effective date but not more than 12 months before the signing of the related legal agreements. For Tranche 4, the government has requested approval of advance contracting and retroactive financing of up to \$36 million (20% of the loan amount of \$180 million) since the procurement of track safety operation and maintenance equipment under Tranche 4 is urgent and requires advance contracting and retroactive financing. The government and CRC have been informed that approval of advance contracting and retroactive financing does not commit ADB to finance the proposed tranche.

## IV. DUE DILIGENCE

### A. Technical

23. Technical due diligence considered the safety, energy efficiency, resistance to corrosion, fatigue resistance, and earthquake resistance properties of the project equipment, and compatibility with local systems and conditions. The equipment and materials included in Tranche 4 are based on proven and established technologies and practices. The EA has

experience of installing new technologies successfully and has successfully implemented similar projects.

## **B. Economic and Financial Viability**

24. Updated economic due diligence was carried out for the investment program.<sup>10</sup> The methodology used for the original economic analysis prepared for Board consideration of the MFF in 2009 remains valid. An updated economic analysis was prepared incorporating cost information based on actual prices obtained under Tranches 1–3. This indicates that the Investment Program is economically viable. The economic internal rate of return (EIRR) for the MFF is 28.36% with a net present value (NPV) of CNY33.08 billion at a 12% discount rate. This is a little higher than the original EIRR estimate of 26.81%. Some equipment prices have changed, with items such as bridge bearings increasing by about 10% from 2009 to 2013; while others such as for optical cable have stayed virtually the same; and others such as for high value electronics items have fallen by about 15%. These changes resulted in a lower total estimated investment cost of CNY19.34 billion compared with the original cost of CNY20.07 billion. The value of time savings and energy prices were also updated, and resulted in increased levels of benefits because of higher prices.

25. The EA has the necessary financial resources to operate and maintain the items purchased under the Investment Program and Tranche 4. It will also be able to service the debt incurred through the loan.<sup>11</sup> The EA has previously successfully managed 13 ADB and 12 World Bank loans over the last two decades. The EA will continue to receive budgetary support from the government since railway is one of the safest, environmentally-friendly, and energy-efficient modes of transport and has been prioritized.

## **C. Financial Management**

26. Due diligence on the EA's financial management capacity was conducted. The assessment confirmed that the EA has sufficient accounting professionals, acceptable accounting policies including standards of financial reporting and general accounting practices, and strong internal control of expenditures and financing commitments. The quality and punctuality of financial reporting has been satisfactory in previous ADB-financed railway projects. The key personnel of the EA are well experienced in ADB project implementation. The EA manages a large foreign-funded project portfolio and has adequate capacity to conduct financial management acceptable to ADB. The National Audit Office (NAO) undertakes annual audits of railway projects financed by ADB and World Bank. The financial management assessment concluded that the EA's financial management skills and capacity are sufficient and can be relied on for program financial management purposes.

27. A procurement capacity assessment of the EA was also conducted. The EA has personnel experienced and trained in procurement and contract management supported by well-established internal procedures and management systems consistent with ADB requirements. The EA's accountability mechanism is also deemed effective with separation of functions across procurement and contract, disbursement, and internal audit. In view of its extensive experience of implementing ADB and World Bank financed projects, the EA is familiar with conducting procurement with international financing institutions. The assessment confirmed that the EA has sufficient procurement capacity.

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<sup>10</sup> Linked Document 5: Economic Analysis Due Diligence for the MFF Investment.

<sup>11</sup> China Railway Corporation provided data that its total revenues were \$160 billion and \$136 billion in 2012 and 2011, respectively; and operating profits were more than \$11 billion for both years.

## D. Governance

28. All procurement to be financed under Tranche 4 will be procured in accordance with ADB's Procurement Guidelines (2013, as amended from time to time), and as provided for in the Procurement Plan (Section VI of the FAM). Disbursements for this tranche will be made in accordance with the conditions of disbursement in the Loan Agreement and *Loan Disbursement Handbook* (2012, as amended from time to time).<sup>12</sup> To facilitate disbursements, the EA will set up an imprest account at a bank acceptable to ADB after the loan becomes effective. The amounts to be deposited in the imprest accounts shall not exceed the estimated expenditures to be financed from imprest accounts for the next 6 months of implementation or 10% of the loan amount, whichever is lower. The currency of the imprest account will be US dollar. To expedite funds flow and simplify documentation, the statement-of-expenditure procedure may be used in liquidating and replenishing the imprest account and reimbursing eligible expenditures of not more than \$100,000 per payment. Payments over the statement-of-expenditure ceiling will be reimbursed, liquidated, or replenished on the basis of full supporting documentation. The loan proceeds will be used solely for the procurement of equipment and materials in the project description in FAM.

29. FCTIC has been actively involving in implementing many railway project loans and technical assistance (TA) projects financed by ADB, including four completed projects,<sup>13</sup> six ongoing loan projects, three tranches under the Investment Program, and three ongoing TAs. The EA has assigned officials who are familiar and experienced with ADB-financed projects to implement Tranche 4.

30. ADB's Anticorruption Policy (2000, as amended to date) has been discussed with the government and the EA. The specific policy requirements and supplementary measures are described in the FAM.

## E. Poverty, Social and Gender Dimensions

31. The project will contribute to poverty reduction impact by promoting inclusive growth in southwestern PRC. Poverty in this area is caused by (i) adverse environmental and weather conditions and limited farmland (e.g., mountains, cold weather, water scarcity, and soil erosion); (ii) geographical remoteness and isolation and high transport costs; and (iii) lack of access to markets, and good social and health care facilities. Providing an energy efficient, environment-friendly, safe, and secure transportation system will enable the efficient flow of people and goods; conserve resources; protect the environment from pollution; and contribute to the health, quality of life, and prosperity of the population. The project, when completed, will help increase standards of living and reduce poverty in the region by enabling sustainable economic growth, creating conditions necessary for developing local resources and generating employment and income-enhancing opportunities; will enhance railway safety and increase railway capacity, benefiting consumers and producers of goods and services through the provision of timely and efficient transport services and lower logistics costs. Details are presented in the summary poverty reduction and social strategy.<sup>14</sup>

32. Increased employment opportunities created indirectly for the poor, ethnic minorities, and women by railway development will provide potential new sources of income, such as: (i) the demand for unskilled labor, (ii) opportunity to sell food and local handicraft items, and

<sup>12</sup> Available at: <http://www.adb.org/documents/loan-disbursement-handbook>.

<sup>13</sup> Of the four completed projects, 2 were rated highly successful and 2 were rated successful.

<sup>14</sup> Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

(iii) economic opportunities related to tourism. This will increase net income and savings, improve overall family welfare, and help raise living standards in the project area. Expansion of secondary and tertiary industries will generate additional employment opportunities for both men and women, close to their homes.

## F. Safeguards

33. Tranche 4 is classified as category C for all safeguard aspects (environment, involuntary resettlement, and indigenous peoples). The investment program selection criteria require that equipment installation should not involve land acquisition, have adverse impacts on ethnic minorities, or have negative environmental impacts. The EA has confirmed that none of the equipment and materials to be financed under Tranche 4 will involve land acquisition, involuntary resettlement, have adverse impacts on ethnic minorities, or have negative environmental impacts. Tranche 4 has been prepared in accordance with the safeguards framework in the FFA. This is similar to the previous tranches and semi-annual safeguard assessments have confirmed there have been no impacts during implementation.

## G. Risks and Mitigating Measures

34. Tranche 4 is formulated to minimize potential risk. Major risks and mitigation measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>15</sup>

**Table 4: Summary of Risks and Mitigating Measures**

Risks	Mitigating Measures
Delay in implementation	Two qualified procurement companies have been selected to assist the EA in all ADB-financed procurement under Tranche 4. The EA will ensure that staff employed in the EA and PMO will be experienced in technical, financial, and administrative matters; and in implementing projects financed by international financial institutions. On-the-job training on ADB procedures will be provided to new staff of the EA to ensure adherence to ADB policies and procedures and minimize the risk of delay.
Financial and management risk and project cost overruns	The government and EA will ensure the timely release of counterpart funds, as per loan covenants. The EA will maintain separate accounts for the project and have such accounts and related financial statements audited annually by an external auditor in accordance with auditing standards acceptable to ADB. The government and EA will be responsible for financing all cost overruns.

ADB = Asian Development Bank, EA = executing agency, PMO = project management office.

Sources: PPTA consultants and ADB staff.

<sup>15</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

**H. Risk Categorization**

35. The proposed Tranche is categorized as “low risk” because (i) the total loan amount for Tranche 4 will be \$180 million (less than \$200 million), (ii) ADB has sound previous experience in implementation of the railway projects in the PRC, (iii) the EA has successfully implemented ADB-financed railway projects, and (iv) safeguard categorization is not A.

**V. ASSURANCES**

36. The government and CRC have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, and disbursement as described in detail in the FAM.

37. The government and CRC have agreed with ADB on certain covenants for the project, which are set forth in the loan agreement.

**VI. RECOMMENDATION**

38. The proposed Tranche 4 is in accordance with the FFA and would comply with the Articles of Agreement of the ADB and it is recommended that the President approve the loan of \$180,000,000 to the People’s Republic of China for Tranche 4 under the Railway Energy Efficiency and Safety Enhancement Investment Program from ADB’s ordinary capital resources, with interest to be determined in accordance with ADB’s London interbank offered rate (LIBOR)-based lending facility; for a term of 25 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the FFA.



### DESIGN AND MONITORING FRAMEWORK OF TRANCHE 4

<b>Design Summary</b>	<b>Performance Targets/Indicators</b>	<b>Data Sources/ Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<p><b>Impact</b> Improved transport system in the southwestern region that supports sustainable socioeconomic development and the western region development strategy</p>	<p>GDP to increase during 2015–2023 at 5% to 6% per annum for the southwestern region</p> <p>Per capita rural income in the southwestern region increased from CNY3,300 in 2007 to CNY4,400 in 2015 to CNY4,700 in 2020 and 4,880 in 2023</p> <p>Energy consumption on the PRC railways per unit of revenue is reduced by 25% from 2009 to 2023</p>	<p>Provincial and county/city statistics offices.</p> <p>Investment program performance management system at inception, completion, and 3 years after—with emphasis on socioeconomic improvement impacts</p> <p>CRC statistics and operating data before and after the investment program</p>	<p><b>Assumptions</b> Government investment programs are implemented as planned</p> <p>Complementary activities are implemented</p> <p>The Government is committed to reducing poverty in the western region, based on the western region development strategy.</p>
<p><b>Outcome</b> An energy-efficient, safe, reliable, affordable, and environment-friendly railway transport system is developed in the region</p>	<p>Transport capacity expanded in the southwestern PRC to 470 billion ton-km for freight and 150 billion passenger-km for passengers in 2020</p> <p>Cost of travel reduced from 35 fen/km in 2008 to 15 fen/km in 2020</p> <p>Fuel savings increased by CNY936 million in 2020</p> <p>CO<sub>2</sub> emissions are reduced by 22,106 tons in 2020</p> <p>A 20% reduction in rate of accidents per billion traffic by 2020 from 2008</p>	<p>Progress reports</p> <p>Project administration missions and facility completion report</p> <p>Post evaluation surveys and reports from CRC</p>	<p><b>Assumptions</b> Assumed economic growth rates materialize</p> <p>Traffic forecasts are realized</p> <p>Passengers and freight operators realize the benefit of using the railways</p> <p><b>Risk</b> Capacity enhancement works are not completed in a timely manner</p>

<b>Design Summary</b>	<b>Performance Targets/Indicators</b>	<b>Data Sources/ Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<b>Outputs</b> 1. Environmental protection  2. Railway safety enhancement	Environmental protection equipment procured by June 2014 and installed by December 2017.  (i) Track safety operation and maintenance equipment procured by March 2014 and installation completed by December 2016; (ii) Anti-seismic bridge bearings procured by June 2014 and installed by December 2017; (iii) Enhanced fasteners and switch system procured by October 2014 and installation completed by December 2017; and (iv) Signaling facilities procured by December 2014 and installed by June 2016	FAMs and PCR	<b>Assumption</b> Associated equipment procurement and installation are completed.
<b>Activities with Milestones</b> <b>1. Environment-friendly improvement</b> 1.1 Procurement of equipment completed by December 2014 1.2 Installation completed by December 2017 1.3 Final acceptance completed by December 2018  <b>2. Railway safety enhancement</b> 2.1 Procurement of equipment completed by July 2015 2.2 Installation completed by December 2017 2.3 Final acceptance completed by December 2018			<b>Inputs</b> Investment cost for Tranche 4: \$547.60 million  ADB: \$180 million  CRC: \$367.60 million

ADB = Asian Development Bank, FAM = facility administration manual, GDP = gross domestic product, km = kilometer, CNY = Chinese Yuan, CRC = China Railway Corporation, PCR = project completion report, PRC = People's Republic of China, TA = technical assistance.

\* Baselines for fuel savings, CO<sub>2</sub> emissions and SO<sub>2</sub> emissions are 2009 data. Fuel savings and emission reductions are benefits in the specified year and not aggregated benefits from the base year.

**LIST OF LINKED DOCUMENTS**

1. Periodic Financing Request for Tranche 4
2. Updated Facility Administration Manual for Tranches 1, 2, 3, and 4
3. Loan Covenant Compliance Status
4. Updated Summary of Poverty Reduction and Social Strategy
5. Economic Analysis Due Diligence for the MFF Investment Program
6. Financial Management Assessment
7. Contribution to the ADB Results Framework
8. Risk Assessment and Risk Management Plan