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R133-16 7 November 2016

Proposed Loan Shaanxi Accelerated Energy Efficiency and Environment Improvement Financing Project (People's Republic of China)

1. The Report and Recommendation of the President (RRP: PRC 48452-004) on the proposed loan to the People's Republic of China for the Shaanxi Accelerated Energy Efficiency and Environment Improvement Financing Project is circulated herewith.

2. This Report and Recommendation should be read with (i) *Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020* and Addendum 1, which were circulated to the Board on 18 January 2016 and 8 February 2016, respectively (DOCS.Sec.M2-16 and Addendum 1); and (ii) *Country Operations Business Plan: People's Republic of China, 2016–2018*, which was circulated to the Board on 21 January 2016 (DOC.IN.23-16).

3. In the absence of any request for discussion and in the absence of a sufficient number of abstentions or oppositions (which should be communicated to The Secretary by the close of business on 28 November 2016), the recommendation in paragraph 36 of the paper will be deemed to have been approved, to be so recorded in the minutes of a subsequent Board meeting. Any notified abstentions or oppositions will also be recorded in the minutes.

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Report and Recommendation of the President to the Board of Directors

Project Number: 48452-004 November 2016

Proposed Loan People's Republic of China: Shaanxi Accelerated Energy Efficiency and Environment Improvement Financing Project

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 14 October 2016)			
Currency unit	_	yuan (CNY)	
CNY1.00	=	\$0.149	
\$1.00	=	CNY6.728	

ABBREVIATIONS

ADB	_	Asian Development Bank
CEFP	_	clean energy financing platform
EIRR	_	economic internal rate of return
ESCO	_	energy service company
ESMS	_	environmental and social management system
FIL	_	financial intermediation loan
PAM	_	project administration manual
PRC	_	People's Republic of China
SDIMC	_	SFHG Development & Investment Management Company
SFHG	_	Shaanxi Financial Holding Group
SMEs	_	small and medium-sized enterprises
SPDB	_	Shanghai Pudong Development Bank
SPG	_	Shaanxi provincial government

NOTE

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

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PROJECT AT A GLANCE

1.	Basic Data			Project Number: 48452-004
	Project Name	Shaanxi Accelerated Energy Efficiency and Environment Improvement Financing Project	Department /Division	EARD/EAEN
	Country Borrower	China, People's Republic of People's Republic of China	Executing Agency	Shaanxi Financial Holding Group
2.	Sector	Subsector(s)		ADB Financing (\$ million)
1	Energy	Energy efficiency and conservation		150.00
			Total	150.00
3.	Strategic Agenda	Subcomponents	Climate Change Inform	nation
	Inclusive economic growth (IEG) Environmentally sustainable growth (ESG)	Pillar 1: Economic opportunities, including jobs, created and expanded Global and regional transboundary environmental concerns	Mitigation (\$ million) CO ₂ reduction (tons per Climate Change impact Project	annum) 1,200,000 on the Low
_		^		
4.	Knowledge solutions (KNS)	Pilot-testing innovation and learning	No gender elements (NO	GE)
	Partnerships (PAR)	Commercial cofinancing Private Sector		
	Private sector development (PSD)	Conducive policy and institutional environment Promotion of private sector investment	t	
5.	Poverty and SDG Target	ing	Location Impact	
	Geographic Targeting Household Targeting SDG Targeting SDG Goals	No No Yes SDG7, SDG13	Rural Urban	Medium High
6.	Risk Categorization:	Low		
7.	Safeguard Categorizatio	n Environment: FI Involuntary Res	ettlement: Fl Indigenou	Is Peoples: Fl
8.	Financing			
	Modality and Sources		Amount (\$ million)	
	ADB			150.00
	Sovereign Developme	ent financing institution (DFI): Ordinary		150.00
	Capital resources			0.00
	None			0.00
				309.00
	Beneficiaries			136.40
	Others			167.60
	Project Sponsor			5.00
	Total			459.00
9.	Effective Development C	cooperation		
	Use of country procureme	nt systems Yes		
	Use of country public finar	ncial management systems Yes		

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the People's Republic of China (PRC) for the Shaanxi Accelerated Energy Efficiency and Environment Improvement Financing Project.¹

2. The proposed project will establish a clean energy financing platform (CEFP) to channel finance to clean energy investments in Shaanxi Province. In addition, to support the high-impact energy efficiency and emission reduction initiatives in large enterprises, the platform will also focus on directing investments to small and medium-sized enterprises (SME).

II. THE PROJECT

A. Rationale

3. **National plan for energy savings and emission reduction.** The PRC is the largest energy consumer in the world. In 2014, it accounted for 21% of global energy consumption.² The highly energy-intensive and coal-dominated economic structure has taken a heavy toll on the PRC's natural environment and has become the major cause for the country's high levels of greenhouse gas emissions and air and water pollution. To tackle this problem, the Government of the PRC has made promoting environmentally sustainable growth a key priority.

4. The PRC's Thirteenth Five-Year Plan, 2016–2020, contains specific measures and targets to decouple economic growth from energy consumption and carbon emissions, boost the share of nonfossil energy in primary energy consumption, and reduce the release of major air pollutants.³ These targets will contribute to the PRC's nationally determined commitment to reducing the carbon intensity by 60%–65% by 2030, compared with 2005, and achieve carbon peaking by 2030 or earlier. The national energy-saving targets were disaggregated and allocated to the provinces. The government is providing additional incentives to western provinces that are heavily dependent on coal and energy-intensive industries to reduce energy intensity.

5. **Energy savings and emission reduction in Shaanxi Province.** Shaanxi Province, located in the western part of the PRC, is a major producer of coal, oil, and natural gas, and its industrial structure heavily relies on these fossil fuels as feedstock and as an energy source. Although the province reduced its energy intensity by 16.3% during the Twelfth Five-Year Plan, 2011–2015, and industrial energy intensity by 18.6%, this was achieved by mainly targeting large enterprises. Shaanxi Province aims to reduce energy intensity by an additional 15% by 2020, compared with 2015. It has significant untapped opportunities to reduce the energy

¹ The design and monitoring framework is in Appendix 1.

² International Energy Agency. 2016. *Key World Energy Statistics*. Paris.

³ Reduce energy intensity by 15% and carbon intensity by 18% (energy use and carbon emissions per unit of gross domestic product) by 2020, compared with 2015, and increase the share of nonfossil fuel in primary energy consumption from 12% in 2015 to 15% by 2020, and reduce the share of coal in primary energy consumption from 66% in 2015 to 62% by 2020. Government of the People's Republic of China, National Development and Reform Commission. 2015. Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China. Beijing (adopted in 2016).

intensity and air pollution caused by SMEs because these were not targeted under the Twelfth Five-Year Plan.

6. Many SMEs in Shaanxi Province are engaged in energy-intensive industries such as coal based chemicals, nonferrous metals, ceramic materials, building materials, and industrial waste recycling. What's more, they rely on traditional and particularly energy-intensive technologies. While SMEs have significant scope to reduce their energy intensity and air pollution by recovering waste heat from industrial processes and making use of industrial gases for productive purposes, their lack of knowledge about such technologies, weak understanding of cost-benefit evaluation, and difficulties in accessing commercial credit have kept them from seizing these opportunities. Energy service companies (ESCOs), which are more familiar with modern technologies and the packaging of energy efficiency investments, are particularly suited to drive energy efficiency and technology enhancements in SMEs. However, ESCOs are an underdeveloped industry in Shaanxi and also find it difficult to access commercial credit.

7. Shaanxi Province also intends to increase the installed capacity of renewable energy from 7.5 gigawatts in 2015 to 20 gigawatts by 2020, to diversify its electricity generation mix and generate about 19% of total electricity from renewable sources. Most of the capacity addition is likely to be from distributed renewable energy applications, such as solar photovoltaic plants located in barren lands with low agricultural productivity and the use of geothermal and biomass for heat supply.

8. **Energy efficiency hurdles in Shaanxi.** Despite the past progress in reducing energy intensity, further improvements are difficult because the recent policy approach to more moderate economic growth in the PRC and the sharp reduction in prices for coal and coal-based industrial products have eroded the profitability and creditworthiness of industrial enterprises, which in turn undermines their willingness to borrow and invest in energy efficiency improvements. This, combined with the government's efforts to move away from providing direct fiscal subsidies to energy efficiency investments and instead enable local financial institutions to provide suitable financing tools and financing products, hampers further investment flows into energy efficiency efforts by large industrial enterprises and SMEs alike.

9. **Financial barriers to energy efficiency investments.** Although investments in energy efficiency improvements offer attractive returns, SMEs and ESCOs find it difficult to mobilize financing for such investments for the following reasons:

- (i) Commercial banks are reluctant to finance discrete and small investments by different enterprises.
- (ii) SMEs are reluctant to pledge their limited assets to borrow for relatively small energy efficiency investments.
- (iii) Taking security over the energy efficiency assets is difficult because of their dispersed nature.
- (iv) Investments are relatively small but technically complex.
- (v) Banks are unfamiliar with structuring cash flow-based, limited-recourse financing for energy efficiency investments.

10. The proposed CEFP in Shaanxi Province is designed to help overcome the financial barriers faced by SMEs and ESCOs.

11. **Rationale for financial intermediation loan modality.** The government requested the Asian Development Bank (ADB) to design the project and to establish the provincial CEFP so as to mobilize domestic financing for investments in energy efficiency, distributed renewable

energy, and environmental improvements in Shaanxi Province by leveraging ADB loan proceeds. The financial intermediation loan (FIL) modality enables ADB and the government to establish partnerships with local commercial banks and financial institutions so as to channel funding resources to small or medium-scale clean energy investments for which the financing requirements are not large enough to warrant direct lending by ADB. ADB funds will leverage financing from participating commercial banks and other financial institutions, and enable financing of eligible energy efficiency investments on commercial terms.

12. Innovative features in project design. The proposed CEFP will offer three complementary financial products: (i) debt financing facility to provide entrusted loans,⁴ (ii) credit guarantee facility to leverage cofinancing, and (iii) lease financing facility for the purchase of energy efficient industrial equipment. The CEFP will partner with two commercial banks active in Shaanxi Province to offer entrusted loans, and the partner banks are encouraged to provide cofinancing to match at least the ADB loan proceeds. The guarantee facility will provide credit guarantees to technically sound subprojects with high energy-saving potential but lacking in collateral to meet the requirements of the commercial banks for the provision of cofinancing. This facility is likely to be particularly useful for ESCO and SME borrowers. The CEFP will provide credit enhancement to the guarantees provided by Shaanxi SME Financing Guarantee Company⁵ by making a cash deposit of not more than 20% of the guaranteed cofinancing loan amount in the beneficiary bank of the guarantee. This will ensure that the guarantee facility will have a minimum leveraging ratio of 5.⁶ For subprojects that require the purchase of energy efficient equipment, ADB loan proceeds can be provided as lease financing through a financial leasing company.

13. As energy efficiency investments have a short payback period, the subloans to be made using the debt facility are expected to have a loan repayment period of 3–8 years. As the initial batch of subloans is repaid, the proceeds will be relent to another batch of subprojects. For this purpose, a reflow account will be established to receive the repayments of the entrusted subloans as well as the reflows from cash collateral supporting the credit guarantees. It is expected that the ADB loan proceeds will be reutilized at least twice before the loan is repaid.⁷

14. **ADB value addition.** The project demonstrates a high degree of ADB value addition by structuring an innovative financing vehicle for investments in energy efficiency and distributed renewable energy in Shaanxi Province. This includes:

- (i) capacity building of domestic financial institutes by jointly undertaking technical and environmental as well as financial due diligence on energy efficiency investments by SMEs;
- (ii) demonstrating how a credit guarantee facility can be structured using part of loan funds as a cash collateral to support credit guarantees to mobilize additional financial resources from commercial banks;
- (iii) encouraging commercial banks to offer financing secured on energy efficiency equipment financed using subloans or cash flows (for those projects implemented by ESCOs) attributable to energy savings achieved. This would be a

⁴ Entrusted loan is the provision of funds by a nonbanking commercial entity to a commercial bank to be onlent to designated borrowers. The commercial bank's role is limited to disbursing the loans to designated borrowers, keeping custody of collateral, collecting loan repayments, and liquidating collateral in the event of default by a borrower. The credit risk remains with the provider of funds and not with the commercial bank.

⁵ This company was selected by SPG based on their track record in providing credit guarantees to SMEs.

⁶ The ratio of the total amount of loans guaranteed by the guarantee fund to the special reserve fund.

⁷ The duration of the ADB loan will be 15 years.

departure from the current practice of requiring real estate collateral or corporate guarantees from the parent company.

- (iv) provision of credit lines to ESCOs and financial leasing companies to finance a series of energy-saving investments;
- (v) setting up partnerships with reputed local engineering design and environmental institutes to bring in technical capacity to undertake technical due diligence; and
- (vi) establishing and implementing an environmental and social management system (ESMS) to build the capacity of commercial banks and the project implementing agency, for ensuring that the subprojects comply with ADB's Safeguard Policy Statement (2009) requirements.

15. **Lessons from previous projects.** The lessons learnt from previous ADB FIL projects for energy efficiency improvement in the PRC include inadequate credit risk transfer to commercial banks, selection of subborrowers by local government officials, absence of market based pricing of subloans and excessive reliance on fixed assets collateral.⁸ In addition, there were no credit enhancement and risk sharing mechanisms to encourage commercial banks to extend financing to SME and ESCO subborrowers. These lessons have been incorporated to the project design through innovative features described in para. 12 and ADB value addition described in para. 14. In addition, the credit risk and credit approval have been transferred from the provincial governments to commercial organizations such as SFHG and commercial banks based on the lessons learnt from the previous FIL projects in the PRC.

16. The project directly contributes to the priorities of ADB's country partnership strategy, (2016–2020) for the PRC—i.e., supporting the "ecological civilization" objective of the government through environmentally sustainable growth, pollution control, resource recycling, climate change mitigation, energy efficiency improvement, and increased use of renewable energy. The project is also fully consistent with the 13th plan (footnote 2) of the national and provincial governments to achieve energy conservation, emission reduction, and industrial transformation and to deepen access to finance for emerging industries and SMEs.

B. Impact and Outcome

17. The impact will be that energy intensity and emissions in Shaanxi Province are reduced. The outcome will be that financing barriers to clean energy investments in Shaanxi Province are reduced.

C. Outputs

18. **Output 1: Clean energy financing platform for financing energy-saving and emission-reduction investments in Shaanxi Province is established**. As highlighted in para 11, the proposed CEFP will offer three complementary financial products to meet the financing requirements of eligible clean energy investments.

⁸ ADB 2008. Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility and Administration of Grant to the People's Republic of China for the Guangdong Energy Efficiency and Environment Improvement Investment Program. Manila (MFF 0020-PRC); ADB. 2011. Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Shandong Energy Efficiency and Emission Reduction Project. Manila (Loan 2771-PRC); and ADB. 2011. Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Hebei Energy Efficiency Improvement and Emission Reduction Project. Manila (Loan 2835-PRC).

19. **Output 2: Demonstrative energy-saving and emission-reduction subprojects financed by the clean energy financing platform are implemented.** The first batch of subprojects to be supported will include (i) industrial waste heat recovery and utilization for electricity generation and heat supply, (ii) heat supply energy efficiency improvement, (iii) distributed solar photovoltaics, (iv) biogas and biofuel recovery for agriculture waste, (v) use of waste gases from industrial processes for power generation, (vi) use of geothermal energy for heat supply for residential areas, (vii) retrofit of industrial processes with highly efficient equipment, and (viii) energy efficiency improvements in buildings and public facilities. Some of these subprojects may be implemented using energy management or build-own-operate contracts. These subprojects will result in substantial energy (i.e. coal) savings and reduction in greenhouse gas emissions.

D. Investment and Financing Plans

20. The investment cost of the first batch of subprojects is estimated to be \$459.0 million, (Table 1), which includes the financial charges on entrusted loans and an estimated amount of commercial bank loans. Cofinancing of \$167.6 million will be mobilized on a collaborative basis from commercial banks, including the two entities that are acting as entrusted banks, i.e., Shanghai Pudong Development Bank (SPDB) and Chang'an Bank. Reflows from the first batch will be relent twice to finance two additional batches of subprojects of a similar nature with an investment requirement of about \$500 million each. Hence, the total investment mobilized by the CEFP is tentatively estimated to be in the range of \$1.5 billion.

21. The government has requested a loan of \$150 million from ADB's ordinary capital resources to help finance the proposed project. The loan will have a 15-year term, including a grace period of 10 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 set forth in the draft loan and project agreements.

22. The ADB loan proceeds will be onlent by the Ministry of Finance to the Shaanxi provincial government (SPG) and by the Shaanxi Provincial Financial Department (on behalf of SPG) to Shaanxi Financial Holding Group (SFHG) on terms identical to those offered by ADB to the Ministry of Finance.⁹ SFHG is the financial intermediary for this project. The credit risks and the risks of interest rate and foreign exchange rate fluctuation will be borne by the SFHG. SFHG will also be responsible for the payment of commitment fees on any undisbursed part of the loan. SFHG will use ADB loan proceeds to support selective industrial energy efficiency investments in Shaanxi Province.

⁹ SFHG, wholly owned by the SPG, is a holding group of nonbank financial institutions engaging in strategic investments, promotion of financing for SMEs, trading platforms for nonferrous metal, equity holdings as well as emissions, and private equity investments.

Table 1: Project Investment Plan

	(\$ IIIIIOII)				
Item Amount					
Α.	A. Subproject Investment Cost ^a				
	1. Subprojects supported through entrusted loans	300.0			
	Subprojects supported through guarantee fund	100.0			
	3. Subprojects supported through lease financing facility	53.7			
	Subtotal (A)	453.7			
B. Project Management Expenses ^b 5.3		5.3			
	Total (A+B+C) ^c	459.0			

Note: These are indicative investment amounts for the first batch of subprojects only.

^a Includes interest cost on subloans and cofinanced loans; and taxes and duties estimated to be \$40 million, of which \$12 million will be financed from the Asian Development Bank (ADB) loan funds. The amount of taxes and duties to be financed by ADB (i) is within the reasonable threshold identified during preparation of the country partnership strategy, (ii) does not represent an excessive share of the investment plan, (iii) applies only to ADB-financed expenditures, and (iv) is considered material and relevant to the success of the project.

^b Includes consulting services financed by the loan.

^c The interest cost of ADB loan funds were estimated at the 5-year forward London interbank offered rate (LIBOR) plus a spread of 0.5%. Commitment charges of the ADB loan were estimated at 0.15% per year on the undisbursed loan amount. The total financial charges of the ADB loan during implementation were estimated to be \$11.3 million. However, this amount is not included to avoid double-counting, since the executing agency can recover this through interest on subloans.

Source: Asian Development Bank estimates.

Table 2: Financing Plan

(\$ million)

ltem		Amount
A.	Asian Development Bank	150.0
В.	Domestic Commercial banks	167.6
C.	Subborrowers	136.4
D.	Shaanxi Financial Holding Group	5.0
	Total (A+B+C+D)	459.0
-		

Source: Asian Development Bank estimates.

E. Implementation Arrangements

23. SFHG will be the executing agency of the project and the Shaanxi Development and Reform Commission will provide strategic and policy guidance to SFHG during project implementation. The Shaanxi Development Reform Commission will ensure the achievement of development objectives and the expected outcomes set by SPG. The Shaanxi Finance Department will exercise fiduciary oversight over the project implementation. SFHG has established a dedicated subsidiary, the SFHG Development & Investment Management Company (SDIMC), which will be the implementing agency. However, SFHG as the executing agency will be accountable for ensuring compliance with ADB's policy requirements such as environmental and social safeguards and the anticorruption policy. SFHG has established an ESMS to cover the subprojects financed by the project and will ensure that SDIMC will implement the ESMS in accordance with the Safeguard Policy Statement.

24. The implementation arrangements are summarized in Table 3 and described in detail in the project administration manual (PAM).¹⁰

¹⁰ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Aspects	Arrangements			
Implementation period	March 2017–December 2021			
Estimated completion date Loan closing: 30 June 2022				
Management				
(i) Oversight bodies	Shaanxi Development and Reform Commission and Shaanxi Finance Department			
(ii) Executing agency and financial intermediary	SFHG is the executing agency and the financial intermediary. SFHG will bear the credit risk of the subprojects and will have the approval authority for the subprojects. SFHG will be required to obtain the "no objection" from ADB for the first batch of subprojects, and a "free limit" of \$50 million has been set for subsequent batches of subprojects to be approved before the loan closing.			
(iii) Key implementing agency	SDIMC, a fully owned subsidiary of SFHG, is the implementing agency.			
(iv) Implementation unit	SDIMC will act as the main implementing unit and will have up to eight full-time staff. SDIMC will also enter into long-term consulting service agreements with two Shaanxi-based consulting firms to provide expertise in technical appraisal and monitoring, and environmental assessment and monitoring.			
Procurement The subborrowers will use commercial practices acceptable to ADB for procurem of goods and services using the proceeds of subloans. A procurement manual prepared to provide guidance on how the commercial practices can be adopted manner consistent with ADB's procurement principles.				
Consulting services	Individual consultants 40 person-months \$300,000			
Retroactive financing and/or advance contracting	for The implementing agency may enter into subloan agreements prior to signing of the loan agreement with ADB and this will be deemed as advance contracting. Retroactive financing will be provided to subprojects that were approved with the concurrence of ADB for expenses incurred by the subborrowers not more than 12 months prior to the date of the loan agreement. The total amount of retroactive financing will not exceed 20% of the loan amount.			
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2015, as amended from time to time) and detailed arrangements agreed between the government and ADB as stipulated in the Project Administration			
ADD Asian Development D	Mandar and Eduar Agreement.			

ADB = Asian Development Bank, SFHG = Shaanxi Financial Holding Group, SDIMC = SFHG Development & Investment Management Company.

^a Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Source: Asian Development Bank.

III. DUE DILIGENCE

25. The project will finance demonstrative energy saving and emission reduction projects in Shaanxi Province. Detailed subproject selection criteria, covering technical, financial, and environmental and social safeguards, were agreed with the implementing agency. SDIMC is required to prepare a subproject appraisal report to verify the subproject's compliance with the selection criteria and obtain ADB's "no objection" before approving the subprojects under the first batch. Detailed guidelines on the subproject screening and appraisal are provided in the PAM (footnote 11). Technical, financial, economic, and environmental due diligence was carried out on a representative set of subprojects. The remaining subprojects will be appraised and approved before loan effectiveness.

A. Technical

26. Technical due diligence of a representative set of subprojects (i) verified the technical feasibility of the proposed technologies to achieve the desired energy savings and emission reduction; (ii) verified the proposed cost estimates; (iii) assessed the availability of proposed technologies in the PRC market; (iv) verified the energy saving and emission reduction

Table 3: Implementation Arrangements

estimates in the feasibility study reports; (v) defined the technical parameters to be monitored before and after implementation to verify the actual energy savings and emission reduction achieved; and (vi) identified main contract packages to be procured and procurement methods to be adopted to ensure competitive, transparent, and efficient procurement of goods and services.¹¹

В. **Economic and Financial**

27. Financial due diligence was carried out on SFHG and financial institutions that will partner with SFHG in implementing the project. (i. e. SPDB, Chang'an Bank, and Shaanxi SME Financing Guarantee Company).¹² These entities are financially viable and are capable of meeting financial obligations and debt service payments without difficulty. SFHG has a solid financial standing. As of December 2015, its net assets increased to CNY9.18 billion, the ratio of total liabilities to assets was kept below 50%, and the current ratio is always above 2.0. Meanwhile, the group's profitability consistently improved: earnings before interest, taxes, depreciation, and amortization grew from CNY160.7 million in 2011 to CNY321.50 million in 2015. SFHG's net profit margin was quite high (over 50%) during 2011-2015. The executing agency's financial standing is assessed to be sufficiently robust to absorb the related credit risks of subprojects as well as interest rate and exchange rate fluctuation risks. The integrity due diligence of SFHG showed no negative findings.

The financial viability of the appraised subprojects was evaluated. These subprojects 28. have a total investment value of \$157.8 million amounting to 34% of first batch of subprojects. The subborrowers' debt service capability was ascertained for the representative subprojects and found to be within the prudential limits set by the subproject selection criteria. The financial internal rate of return was calculated for the appraised subprojects to ensure that it exceeds the weighted average cost of capital for each subproject and ranges from 9.24% to 30.4%. The economic internal rate of return (EIRR) of the appraised subprojects was calculated by estimating the economic benefits and costs, including the climate change and pollution control benefits. The EIRR of each appraised subproject exceeds 9% and the subprojects' EIRR ranges from 11.3% to 53.3% and the consolidated EIRR of identified subprojects is 24.3%. The economic benefits of carbon savings are valued at \$35 per ton.

C. Governance

29. The financial management assessment (footnote 13) was conducted in July 2016 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects and Financial Due Diligence: A Methodology Note.¹³ The assessment considered the capacity of the SFHG, SDIMC, SPDB, Chang'an Bank, and Shaanxi SME Financing Guarantee Company, including funds flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. The assessment results show the financial management systems and procedures for proper financial management and reporting for ADB loan implementation. SPDB and Chang'an Bank fully comply with the prudential regulations of the regulator. An action plan to mitigate the financial management risks is provided in the PAM. The overall risk was assessed to be *medium*

¹¹ The detailed technical description of appraised subprojects is in Technical Description of Identified Subprojects (accessible from the list of linked documents in Appendix 2). ¹² Financial Management Assessment (accessible from the list of linked documents in Appendix 2).

¹³ ADB. 2005. Guidelines for the Financial Management and Analysis of Projects. Manila; and ADB. 2009. Financial Due Diligence: A Methodology Note. Manila.

30. Procurement will be done using commercial practices acceptable to ADB in accordance with ADB's Procurement Guidelines (2015, as amended from time to time) applicable to FILs. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and SFHG. The specific policy requirements and supplementary measures are described in the PAM (footnote 11).

D. Poverty and Social

31. The project is likely to have positive social impacts by reducing the air pollution associated with energy consumption and industrial production, and create global public goods by contributing to the reduction of greenhouse gas emissions. In addition, the project is expected to improve the efficiency and quality of heat supply to residential areas. The project is expected to contribute to the development of distributed renewable energy and of value-adding service industries such as the energy service industry, which will contribute to the creation of new jobs in green economic activities for knowledge workers. However, the project will not have direct poverty reduction impacts and opportunities for improving gender equity.

E. Safeguards

32. **Environment.** The project is classified as *financial intermediation loan*. An ESMS is established to meet national laws and ADB's environmental and social safeguard requirements for FIL as per the Safeguard Policy Statement.¹⁴ The ESMS provides guidance on (i) screening, categorization, and review of subprojects; (ii) organizational structure and staffing, including skills and competencies in environmental and social areas; (iii) capacity building; and (iv) monitoring and reporting. As per the ESMS requirements, the executing agency has entered into a long-term contract with an experienced environment consultancy firm. The ESMS provides for environment category A subprojects to be included and, if any such subprojects are included, ADB will review the environmental impact assessments and approve them if they meet its Safeguard Policy Statement requirement, including disclosure and consultation. The existing industrial facilities where subprojects are located will be subject to an environmental audit, and recommendations will be made to ensure that these facilities meet the acceptable standards.

33. **Involuntary resettlement and indigenous peoples.** The project is classified as *financial intermediary*. The subproject selection criteria exclude subprojects that (i) require new land acquisition, (ii) result in labor retrenchment or labor redundancies, or (iii) have adverse impacts on ethnic minority communities.

F. Risks and Mitigating Measures

34. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.¹⁵ The integrated project benefits and impacts are expected to outweigh the costs.

¹⁴ Financial Intermediary: Environmental and Social Management System Arrangement (accessible from the list of linked documents in Appendix 2).

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

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RISKS	Mitigating Measures
Approved subprojects do not achieve the	The subprojects will be subjected to technical due diligence to
expected level of energy savings	ensure that the technologies selected are feasible and the
	estimated energy saving potential is accurate and reliable. The
	subprojects will be supervised during implementation to ensure that
	they are implemented according to the design.
Failure to staff SDIMC adequately and to	Adequate funding for the recruitment of consultants was included
recruit key consulting support services in a	and full staffing of SDIMC will be ensured before loan
timely manner to undertake effective due	effectiveness. Training will be provided to SDIMC on relevant ADB
diligence of subprojects	procedures and project management.
Weak borrowing capacity of ESCOs and SMEs	A credit guarantee facility was included under the CEFP to provide
and reluctance of commercial banks to provide	credit enhancement to ESCO and SME subborrowers.
financing	
The reflows from the first batch of subprojects	The SPG will be legally obliged to ensure that the reflows are used
used for investments that do not result in	for the intended purposes. The mechanisms in place to ensure that
energy savings	this requirement is being met will be reviewed during project
	implementation and project completion.
The possible deterioration of operating cash	The SPG is obliged to ensure SFHG's compliance with financial
flows and investment returns of SFHG may	ratios set in the project agreement through additional equity
affect its ability to maintain the CEFP	injections or other means.

Table 4: Summary of Risks and Mitigating Measures

CEFP = clean energy financing platform, ESCO = energy service company, SFHG = Shaanxi Financial Holding Group, SDIMC = SFHG Development & Investment Management Company, SME = small and medium-sized enterprises, SPG = Shaanxi provincial government.

Source: Asian Development Bank.

IV. ASSURANCES

35. The government and SFHG have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents. The government and SFHG have agreed with ADB on certain covenants for the project, which are set forth in the loan agreement and project agreement.

۷. RECOMMENDATION

36. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of \$150,000,000 to the People's Republic of China for the Shaanxi Accelerated Energy Efficiency and Environment Improvement Financing Project, 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 15 years, including a grace period of 10 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

> Takehiko Nakao President

7 November 2016

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned With				
Energy intensity and emissions in Shaanxi Province reduced (Thirteenth Five-Year Plan of the People's Republic of China, 2016–2020) ^a				
Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks	
Outcome Financing barriers to clean energy investments in Shaanxi Province are reduced.	By 2023 a. CEFP mobilizes financing of at least \$ 0.9 billion for clean energy investments in the Shaanxi Province. ^b (2016 baseline: \$0) b. Greenhouse gas savings of 1.5 million tons CO ₂ equivalent will be achieved by the first batch of subprojects. (2016 baseline: 0 tons)	a. Project completion report b. M&V of subprojects	Weak economic situation in Shaanxi Province discourages new investments in energy- efficiency and clean energy. Current policy incentives for distributed renewable energy investments are discontinued.	
Outputs 1. CEFP for financing energy-saving and emission-reduction subprojects in Shaanxi Province is established.	By 2018 1a. Entrusted loans of at least \$135 million will be provided to high-impact energy-efficiency and distributed renewable energy subprojects. (2016 baseline: none)	1a. Project progress reports	Weak borrowing capacity of ESCOs and SMEs discouraging commercial banks to provide financing.	
	1b. Cofinancing of at least \$75 million to SME and ESCO subprojects will be mobilized with the support of the guarantee facility. (2016 baseline: none)	1b. Project progress reports	Reflows from first batch of subprojects are used for investments that do not result in energy savings.	
2. Demonstrative energy-saving and emission-reduction subprojects financed by CEFP are implemented.	By 2021: ^c 2a. Innovative energy-saving subprojects are implemented, resulting in energy savings of at least 333,000 tce. (2016 baseline: 0 tce)	2a. M&V of subprojects		
	2b. Distributed renewable energy and low-carbon energy supply subprojects will achieve coal savings of at least 133,000 tce. (2016 baseline: 0 tce)	2b. M&V of subprojects		
	2c. ESCOs' and SMEs' energy- saving subprojects will achieve energy savings of at least 133,000 tce. (2016 baseline: 0 tce)	2c. M&V of subprojects		

Key Activities with Milestones

- 1. CEFP for financing energy-saving and emission-reduction investments in Shaanxi Province established
- 1.1 Establish and capitalize SDIMC legally (December 2015).
- 1.2 Provide full staff and consulting support to SDIMC (December 2016).
- 1.3 Finalize and approve operating procedures of SDIMC for entrusted loans and guarantee facility (December 2016).
- 1.4 Finalize legal agreement with entrusted loan banks for entrusted loans and with Shaanxi SME Financing Guarantee Company for guarantee facility (February 2017).
- 1.5 Approve first batch of subprojects (March 2017).
- 1.6 Approve second batch of subprojects (December 2021).

2. Demonstrative energy-saving and emission-reduction subprojects financed by CEFP implemented

- 2.1 Implement innovative industrial energy-efficiency subprojects (December 2019).
- 2.2 Implement ESCO energy-efficiency subprojects (December 2021).
- 2.3 Implement SMEs energy-efficiency subprojects (December 2019).

Project Management Activities

Engage consultants for environmental due diligence, monitoring, and technical due diligence (December 2016). Appraise first batch of subprojects (December 2016).

Monitor, evaluate, and report subproject implementation and performance (throughout project implementation).

Inputs

ADB: \$150.0 million loan Commercial cofinancing: \$167.6 million Subborrower funding: \$136.4 million Project management costs funded by SFHG (executing agency): \$5.0 million

Assumptions for Partner Financing

The subborrowers are expected to contribute a minimum of 20% of the project cost as equity contribution, and the commercial cofinancing to be mobilized at portfolio level is expected to at least match the entrusted loans provided using ADB loan proceeds.

ADB = Asian Development Bank, CEFP = clean energy financing platform, CO_2 = carbon dioxide, ESCO = energysaving company, M&V = measurement and verification, SFHG = Shaanxi Financial Holding Group, SDIMC = SFHG Development & Investment Management Company, SMEs = small and medium-sized enterprises, tce = tons of coal equivalent.

Source: Asian Development Bank.

- ^a Government of the People's Republic of China, Communist Party of China Central Committee. 2015. *Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China.* Beijing (adopted in 2016).
- ^b The investment value of first batch of subprojects is estimated to be \$ 453 million and it is assumed that the second batch of subprojects will have a total investment value of approximately equal to first batch of subprojects.
- ^c It is assumed that CEFP will support investments in (i) innovative energy saving subprojects of \$250 million, (ii) distributed renewable energy subprojects of \$100 million, (iii) ESCO & SME projects of \$100 million. The subproject selection criteria included in the PAM, a maximum investment of CNY5,000 (\$750) would be allowed to achieve energy savings of 1 tce. The energy saving indicators were derived for different type of subprojects using this figure and the expected investments in different types of subprojects. However, a comprehensive measurement and verification (M&V) will be undertaken to verify the actual energy savings achieved by each subproject at project completion.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=48452-004-3

- 1. Loan Agreement
- 2. Project Agreement
- 3. Sector Assessment (Summary): Energy
- 4. Project Administration Manual
- 5. Contribution to the ADB Results Framework
- 6. Development Coordination
- 7. Financial Analysis
- 8. Economic Analysis
- 9. Country Economic Indicators
- 10. Summary Poverty Reduction and Social Strategy
- 11. Financial Intermediary: Environmental and Social Management System Arrangement
- 12. Risk Assessment and Risk Management Plan

Supplementary Documents

- 13. Technical Description of Identified Subprojects
- 14. Financial Management Assessment
- 15. Procurement Capacity Assessment
- 16. Integrity Due Diligence