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Report No: PAD1224

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF
US$52 MILLION

TO THE

REPUBLIC OF ARMENIA

FOR AN

ELECTRICITY TRANSMISSION NETWORK IMPROVEMENT PROJECT

March 9, 2015

ENERGY AND EXTRACTIVES GLOBAL PRACTICE
EUROPE AND CENTRAL ASIA REGION

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 9, 2015)

Currency Unit	=	AMD
480AMD	=	US$1
US$1.5	=	SDR 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AC	Alternating Current
ADB	Asian Development Bank
AF	Additional Financing
AMD	Armenian Dram
ANPP	Armenian Nuclear Power Plant
CCGT	Combined Cycle Gas Turbine
COUE	Cost of Unserved Energy
CPS	Country Partnership Strategy
CQS	Consultant Qualifications Based Selection
DA	Designated Account
DC	Direct Current
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
ENA	Electric Networks of Armenia
EPSO	Electric Power System Operator
ERP	Enterprise Resource Planning
ESIA	Environmental and Social Impact Assessment
ESRP	Electricity Supply Reliability Project
FB	Fixed Budget
FIRR	Financial Internal Rate of Return
FM	Financial Management
FMM	Financial Management Manual
GDP	Gross Domestic Product
GPN	General Procurement Notice
GRM	Grievance Redress Mechanism
HR	Human Resources
HVEN	High Voltage Electric Networks
IBRD	International Bank for Reconstruction and Development
IC	Individual Consultant
ICB	International Competitive Bidding
IDA	International Development Association
IFAC	International Federation of Accountants
IFC	International Finance Corporation
IFR	Interim un-audited Financial Report
ILO	International Labor Organization
ISA	International Standards on Auditing
JICA	Japan International Cooperation Agency
kV	Kilovolt
kWh	kilowatt-hour
LCS	Least-cost Selection
M&E	Monitoring and Evaluation
MENR	Ministry of Energy and Natural Resources
MIS	Management Information System
MW	Megawatt
NCB	National Competitive Bidding
NPV	Net Present Value
OM	Operational Manual
O&M	Operation and Maintenance
OSY	Open Switchyard
OTL	Overhead Transmission Line

PCBs	Polychlorinated biphenyls	SCADA	Supervisory Control and Data Acquisition
PDO	Project Development Objective	SH	Shopping
PFBP	Poverty Family Benefit Program	SOE	Statement of Expenditure
PIU	Project Implementation Unit	SREP	Scaling-Up Renewable Energy Program
PSRC	Public Services Regulatory Commission	SPN	Special Procurement Notice
PTRP	Power Transmission Rehabilitation Project	SSS	Single Source Selection
QBS	Quality Based Selection	TOR	Terms of Reference
QCBS	Quality and Cost Based Selection	TPP	Thermal Power Plant
RAP	Resettlement Action Plan	YTPC	Yerevan Thermal Power Center
RPF	Resettlement Policy Framework	UN	United Nations
SAIFI	System Average Interruption Frequency Index	UNDB	United Nations Development Business

Regional Vice President:	Laura Tuck
Country Director:	Henry G.R. Kerali
Senior Global Practice Director:	Anita Marangoly George
Practice Manager:	Ranjit Lamech
Task Team Leader:	Artur Kochnakyan

REPUBLIC OF ARMENIA
Electricity Transmission Network Improvement Project

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PAD DATA SHEET

Armenia

Electricity Transmission Network Improvement Project (P146199)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

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Report No.: PAD1224

Basic Information		
Project ID P146199	EA Category B - Partial Assessment	Team Leader(s) Artur Kochnakyan
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]	
Project Implementation Start Date 01-Apr-2015	Project Implementation End Date 31-Dec-2019	
Expected Effectiveness Date 10-Jun-2015	Expected Closing Date 31-Dec-2019	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Ranjit J. Lamech	Anita Marangoly George	Henry G. R. Kerali	Laura Tuck

Borrower: Republic of Armenia			
Responsible Agency: High Voltage Electric Networks			
Contact:	Mr. Aram Ananyan	Title:	General Director
Telephone No.:	37410-720-010	Email:	hvenbec@gmail.com
Responsible Agency: Yerevan Thermal Power Plant			
Contact:	Mr. Hovakim Hovhannisyan	Title:	General Director
Telephone No.:	37410-472-760	Email:	mailbox@yccpp.com

Project Financing Data(in USD Million)					
[X]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[ ]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	64.86	Total Bank Financing:	52.00

Financing Gap:	0.00	

Financing Source	**Amount**
Borrower	12.86
International Bank for Reconstruction and Development	52.00
Total	64.86

Expected Disbursements (in USD Million)

Fiscal Year	2016	2017	2018	2019	2020	0000	0000	0000	0000	0000
Annual	2.00	7.00	13.00	18.00	12.00	0.00	0.00	0.00	0.00	0.00
Cumulative	2.00	9.00	22.00	40.00	52.00	0.00	0.00	0.00	0.00	0.00

Institutional Data

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Cross Cutting Topics

[ ] Climate Change
[ ] Fragile, Conflict & Violence
[ ] Gender
[ ] Jobs
[X] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Energy and mining	Transmission and Distribution of Electricity	100		
Total		100		

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%

Financial and private sector development	Infrastructure services for private sector development	80
Urban development	Other urban development	20
Total		100

Proposed Development Objective(s)

The proposed project development objectives (PDO) are to improve the reliability of the power transmission network and system management, and support the Borrower's efforts in ensuring adequate electricity supply

Components

Component Name	**Cost (USD Millions)**
Component 1: Strengthening of the power transmission network	60.04
Component 2: Improvement of the power system management	3.13
Component 3: Preparation of a new electricity generation project	1.69

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	**Rating**
1. Political and Governance	Moderate
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Low
9. Other	
OVERALL	Substantial

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [X]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04		X
Forests OP/BP 4.36		X
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11		X
Indigenous Peoples OP/BP 4.10		X
Involuntary Resettlement OP/BP 4.12		X
Safety of Dams OP/BP 4.37		X
Projects on International Waterways OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

Legal Covenants

Name	Recurrent	Due Date	Frequency
HVEN Subsidiary Agreement	X		CONTINUOUS

Description of Covenant

To facilitate the carrying out of HVEN's Respective Parts of the Project, the Borrower shall make part of the proceeds of the Loan (the HVEN Subsidiary Loan) available to the HVEN under an agreement (the HVEN Subsidiary Agreement) between the Borrower and HVEN, under terms and conditions acceptable to the Bank.

Name	Recurrent	Due Date	Frequency
YTPC Subsidiary Agreement	X		CONTINUOUS

Description of Covenant

To facilitate the carrying out of YTPC's Respective Parts of the Project, the Borrower shall make part of the proceeds of the Loan (the YTPC Subsidiary Loan) available to the YTPC under an agreement (the YTPC Subsidiary Agreement) between the Borrower and YTPC, under terms and conditions acceptable to the Bank.

Name	Recurrent	Due Date	Frequency
HVEN Environmental Management Plans	X		CONTINUOUS

Description of Covenant

The Borrower shall ensure that HVEN shall carry out: (i) Part 1(a) of the Project in accordance with the HVEN Substation EMP; and (ii) Part 2 of the Project in accordance with the Dispatch Center EMP.

Name	Recurrent	Due Date	Frequency
YTPC Environmental Management Plan	X		CONTINUOUS

Description of Covenant

The Borrower shall ensure that YTPC shall carry out Part 1(b) of the Project in accordance with the YTPC Substation EMP.

Name	Recurrent	Due Date	Frequency
Hazardous Waste	X		CONTINUOUS

Description of Covenant

The Borrower shall ensure that HVEN and YTPC shall: (i) store any hazardous waste under the Project in accordance with the EMPs; (ii) prior to the disposal of such hazardous waste consult with the Bank; and thereafter (iii) dispose said hazardous waste, all in a manner acceptable to the Bank.

Name	Recurrent	Due Date	Frequency
YTPC Safeguard Specialist	X		CONTINUOUS

Description of Covenant

The Borrower shall ensure that prior to the carrying out of any activity under Part 1(b) of the Project, YTPC shall hire an environmental safeguard specialist with qualifications and experience, and on terms and conditions satisfactory to the Bank.

Name	Recurrent	Due Date	Frequency
YTPC Terms of Reference	X		CONTINUOUS

Description of Covenant

The Borrower shall ensure that YTPC ensures that the terms of reference for any consultancy required under Part 3(a) of the Project shall be satisfactory to the Bank following its review; and shall duly incorporate the requirements of the Bank' Safeguards Policies then in force, as applied to the advice conveyed through such technical assistance, including public disclosure and consultation.

Name	Recurrent	Due Date	Frequency
HVEN Current Ratio	X		CONTINUOUS

Description of Covenant

Starting in 2017, and except as the Bank otherwise agrees, HVEN shall maintain a ratio of current assets to current liabilities of not less than one. In each fiscal year, HVEN shall review, on the basis of forecasts satisfactory to the Bank, whether it would meet the current ratio of no less than one in such and the next fiscal year, and furnish to the Bank the results.

Name	Recurrent	Due Date	Frequency
HVEN Borrowing and Lending	X		CONTINUOUS

Description of Covenant

Unless the Bank shall otherwise agree, HVEN shall not incur any indebtedness, or provide loans or grants, for purposes not related to HVEN's core business of providing transmission services.

Name	Recurrent	Due Date	Frequency
YTPC Current Ratio	X		CONTINUOUS

Description of Covenant

Starting in 2017, and except as the Bank otherwise agrees, HVEN shall maintain a ratio of current assets to current liabilities of not less than one. In each fiscal year, YTPC shall review, on the basis of forecasts satisfactory to the Bank, whether it would meet the current ratio of no less than one in such and the next fiscal year, and furnish to the Bank the results.

Name	Recurrent	Due Date	Frequency

YTPC Borrowing and Lending	**X**		CONTINUOUS

Description of Covenant

Unless the Bank shall otherwise agree, YTPC shall not incur any indebtedness, or provide loans or grants, for purposes not related to YTPC's core business of providing Generation Services.

Name	**Recurrent**	**Due Date**	**Frequency**
HVEN Operational Manual	**X**		CONTINUOUS

Description of Covenant

HVEN shall adopt and carry out its Respective Parts of the Project in accordance with the provisions of the HVEN Operational Manual.

Name	**Recurrent**	**Due Date**	**Frequency**
YTPC Operational Manual	**X**		CONTINUOUS

Description of Covenant

HVEN shall adopt and carry out its Respective Parts of the Project in accordance with the provisions of the YTPC Operational Manual.

Conditions

Source Of Fund	**Name**	**Type**
IBRD	HVEN Subsidiary Agreement	Effectiveness

Description of Condition

The HVEN Subsidiary Agreement has been executed by the parties thereto in a manner acceptable to the Bank.

Source Of Fund	**Name**	**Type**
IBRD	YTPC Subsidiary Agreement	Effectiveness

Description of Condition

The YTPC Subsidiary Agreement has been executed by the parties thereto in a manner acceptable to the Bank.

Source Of Fund	**Name**	**Type**
IBRD	HVEN Operational Manual	Effectiveness

Description of Condition

HVEN has adopted the HVEN Operational Manual.

Source Of Fund	**Name**	**Type**
IBRD	YTPC Operational Manual	Effectiveness

Description of Condition

YTPC has adopted the YTPC Operational Manual

Team Composition

Bank Staff

Name	**Role**	**Title**	**Unit**

Artur Kochnakyan	Team Leader (ADM Responsible)	Senior Energy Economist	GEEDR
Benedicta T. Oliveros	Procurement Specialist	Procurement Analyst	GGODR
Garik Sergeyan	Financial Management Specialist	Sr Financial Management Specialist	GGODR
Ani Balabanyan	Team Member	Senior Energy Specialist	GEEDR
Darejan Kapanadze	Safeguards Specialist	Senior Environmental Specialist	GENDR
Debabrata Chattopadhyay	Team Member	Senior Energy Specialist	GEEDR
Elina Kaarina Hokkanen	Team Member	Jr Professional Officer	GEEDR
Gabriela Grinsteins	Counsel	E T Consultant	LEGLE
Husam Mohamed Beides	Peer Reviewer	Program Leader	MNC02
Irina Tevosyan	Team Member	Program Assistant	ECCAR
Jennifer Shkabatur	Safeguards Specialist	Consultant	GSURR
Jose C. Janeiro	Team Member	Senior Finance Officer	WFALA
Kwawu Mensan Gaba	Peer Reviewer	Lead Energy Specialist	GEEDR
Marina Lysiakova	Team Member	Language Program Assistant	GEEDR
Rocio Mariela Malpica Valera	Counsel	Senior Counsel	LEGLE
Sarah G. Michael	Safeguards Specialist	Senior Social Development Specialist	GSURR

Extended Team

Name	Title	Office Phone	Location

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Armenia	Yerevan	Yerevan		X	
Armenia	Aragatsotn	Aragatsotni Marz		X	

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? Consultants will be required

I. STRATEGIC CONTEXT

A. Country Context

1. The Gross Domestic Product (GDP) growth in Armenia slowed from 7.2 in 2012 to 3.5 percent in 2013, and is likely to settle at about 2.6 percent in 2014 as a whole. Growth of agriculture remained strong, mainly because of expanding livestock production. However, metallic mining output declined, and the construction sector also continued to decline. The bright spot remains the service sector, where the highest contributors to growth were the financial sector, telecommunications, and real estate.

2. Inflation had picked up significantly by mid-2013 largely due to gas and electricity price increases. However, twelve-month inflation slowed to less than 1 percent in August of 2014, below the lower bound of the Central Bank's 2.5-5.5 percent target range. The slowdown was mainly driven by deflation of food products. Prices of non-food products remained broadly stable during the first eight months of the year, and the 12-month price index increased by only 1.1 percent for this category.

3. Despite the economic recovery, poverty incidence continues to be higher since the 2009 economic crisis. In 2013, 32 percent of Armenians were living in poverty, a small change from 2009. In contrast, 27.6 percent of Armenians were considered poor in 2008. In 2012, rural and urban incidence of poverty was similar at about 32 percent. About 34 percent of female headed households were considered poor in 2012.

4. The slow poverty reduction pace is related to the slack in the labor market created by the decline of the construction sector. Employment and earnings, more than pensions or safety nets, are important for staying out of poverty. In 2007-09, construction was the largest contributor to growth and employment creation. Over this same period, consumption growth of the bottom 40 percent of the distribution—an indicator of shared prosperity—outpaced consumption growth experienced by the population overall (4.3 percent vs. 3.5 percent). The 2009 crisis undid the gains delivered by construction-driven growth and eroded the gains in consumption. The subsequent recovery between 2010 and 2012 and changed sectoral composition of employment led to positive consumption growth albeit from a lower base than in the pre-crisis period, and some poverty reduction. Overall, the recovery has benefited individuals across the distribution: on average, between 2007 and 2012, consumption of the bottom 40 percent grew at 1.4 percent per year while consumption of the overall population registered an annual growth of 1.6 percent. The crisis has left the income distribution slightly more unequal than in 2007, and the poor have not benefited as much from the economic recovery.

B. Sectoral and Institutional Context

5. During the first phase of reforms in the 1990s and early 2000s the power sector achieved some remarkable results. The collection of electricity bills reached 100 percent of sales. A competent and independent regulatory agency for the sector was established. The regulatory framework has been adequate and overall conducive to private investments. The explicit and implicit subsidies were eliminated.

6. However, currently the power sector faces a number of major challenges that need to be addressed as part of the second phase of reforms. The key challenges are: (a) supply adequacy; (b) supply reliability; (c) affordability of energy tariffs; (d) financial viability of state-owned power companies; and (e) transparency.

7. Supply Adequacy: The power system will need around 500 MW of new gas-fired generation capacity as soon as possible to preclude the emergence of a supply capacity gap by 2020. To ensure sufficient long-term supply, the Government will also need to develop a number of renewable energy projects, which are estimated to be part of the least-cost supply plan.

8. Improvement of the tariff structure can also contribute to reducing the need for new generation capacity through promotion of more efficient energy consumption. Specifically, the existing electricity tariff structure does not reflect the large difference between the costs of supply during winter and summer months, which creates perverse incentives for consumers and promotes economically inefficient electricity consumption.

9. Supply Reliability: The average interruption frequency per line for 110 and 220 kV overhead transmission lines (OTLs) on the balance sheet of High Voltage Electric Networks (HVEN) is 2.5 times higher than for comparator well-performing utilities. The average age of substations is around 35 years and 14 out of 16 substations have not undergone any major rehabilitation or upgrade. According to the findings of the Armenia Power Sector Policy Note (2014), the substation of Yerevan Thermal Power Center (YTPC) and Ashnak substation have the highest rehabilitation priority.

10. Affordability: In 2013-2014, the average electricity tariff for residential customers increased by 40 percent and the natural gas tariff increased by 19 percent. After the increase, the share of energy expenses in the total expenses of an average household reached 10 percent, a level considered to be energy poverty. The poor (32 percent of the total population with income not sufficient to afford basic consumption of goods and services) suffered the most from the electricity and gas tariff increase, which increased the share of energy expenses in their disposable income to 13.6 percent taking into account the gas life-line tariff introduced by the Government in 2011.[1] The energy tariff increase also led to fuel substitutions (e.g. replacing gas with wood or manure) and to energy deprivation among the poor households with resulting negative environmental and health implications. The issue of affordability will exacerbate as much needed investments in the sector are made.

11. Financial viability of state-owned power companies: The financial standing of state-owned power companies deteriorated since 2011 due to:

(a) *The Government intervention in tariff filings of state-owned power companies*. The Government intervened in setting revenue requirements and associated tariffs for some of the state-owned companies to limit the impact of increasing costs on end-user tariffs.

[1] Families registered in the Poverty Family Benefit Program (PFBP) with a poverty score above zero paid a reduced tariff of AMD100/m^3 for the first 300 m^3 of consumption.

Specifically, the Government, as the owner, agreed to eliminate or reduce some of the allowed expenses, such Operation and Maintenance (O&M), depreciation and return on assets. Moreover, the O&M expenses of the sector companies in real terms reduced by 40 percent in 2009-2013 given that no adjustment for inflation was made when approving the tariffs. This has resulted in under-spending on maintenance and reduced investments in improvement of power supply reliability and efficiency.

(b) *Large short-term borrowings by the state-owned companies for non-core business activities* (financing of salaries and other expenses of other distressed enterprises). These companies have accumulated AMD27 billion (US$66 million) of payables[2] (30 percent of their total revenue), of which AMD10 billion (US$20 million) is expensive, short-term commercial debt (9-12 percent annual interest). The companies have increasing difficulty servicing this debt, some of which is not covered in their tariffs.

12. Transparency: The transparency of the sector has deteriorated since 2011. Specifically, it was manifested through reduced public disclosure of information related to energy sector issues and challenges.

13. The proposed project will help the Government to: (a) improve the transmission network reliability through rehabilitation of the Ashnak and YTPC substations: (b) improve the power system management through construction of a back-up dispatch center, and (c) ensure adequate electricity supply through supporting preparation of a new Combined Cycle Gas Turbine (CCGT) project.

14. The proposed project is consistent with the energy sector strategic objectives of the Government. Specifically, the Armenian Development Strategy for 2014-2025 (March 2014) prioritizes rehabilitation of critical transmission substations, improvement of the power system management, and provision of adequate electricity supply, which are important for promoting economic activity and growth, and reducing poverty. The National Energy Security Concept (October 2013) also prioritizes rehabilitation of key power transmission network assets as a prerequisite for reliable power supply in the country.

15. The proposed project will leverage the World Bank's current engagement in the energy sector in Armenia (see Box 1), including the ongoing Electricity Supply Reliability Project (ESRP) to help the Government comprehensively address the challenge of supply reliability.

[2] Excluding the intra-sectoral debts to each other. Source: Bank team estimates.

Box 1: World Bank Group Engagement in the Energy Sector in Armenia

The WBG is engaged in the energy sector through investment financing operations, policy dialogue, and analytical activities.

Preparation of the Financial Recovery Plan. The World Bank is now preparing a financial recovery plan for state-owned power sector companies to advise the Government on restructuring of the existing liabilities of those companies, which originated due to non-core business activities.

Armenia Power Sector Policy Note. The note analyzed the challenges facing the power sector and outlined the potential solutions to inform the Government policy thinking.

US$39 million Electricity Supply Reliability Project (ESRP): The ESRP is financing replacement of around 230 km section of the power transmission backbone from Hrazdan Thermal Power Plant to Shinuhayr substation.

US$40 million Additional Financing to Electricity Supply Reliability Project (ESRP AF): The ESRP AF is financing rehabilitation of Haghtanak, Charentsavan-3, and Vanadzor-1 substations.

US$10.6 million Energy Efficiency Project (including GEF Grant of US$1.8 million): The project is financing energy efficiency retrofits in public and social facilities, including but not limited to state and regional government bodies, schools, kindergartens, hospitals, theaters.

US$8.6 million Geothermal Exploratory Drilling Project. The project will be financed with a grant from the Scaling-up Renewable Energy Program (SREP) in Armenia. The project will finance exploratory drilling at Karkar geothermal site to confirm suitability of the site for commercial power generation and related technical assistance.

Analytical and Advisory Support for Mitigating Energy Tariff Increase on the Poor: The World Bank has also been providing analytical support to the Government to assess the impact of gas and electricity tariff increases in 2013-2014 on the poor and inform the Government thinking by identifying the subsidization options for mitigating the impacts and assessing their fiscal costs.

US$15 million Sustainable Energy Finance Project of the International Finance Corporation (IFC). The project supports establishment of a sustainable market for energy efficiency and renewable energy investments. For energy efficiency, IFC project primarily supports financial institutions to develop energy efficiency lending and awareness raising on sustainable energy finance.

16. Other development partners are also helping the Government to address the challenge of electricity supply reliability. In particular, the Asian Development Bank (ADB) is implementing a US$37 million Power Transmission Rehabilitation Project (PTRP) to finance rehabilitation of four substations in 2015-2019.

17. Upon completion of the proposed project and the ongoing interventions of the Bank (ESRP) and ADB (PTRP), nine of the remaining fourteen substations, which required urgent rehabilitation, will be upgraded.

Table 1. Substations Requiring Urgent Rehabilitation

No.	Substation	Financing Status	No.	Substation	Financing Status
1	Haghtanak	ESRP AF, World Bank	8	ANPP	Not secured
2	Charantsavan-3	ESRP AF, World Bank	9	YTPC	Proposed project
3	Vanadzor-1	ESRP AF, World Bank	10	Ashnak	Proposed project
4	Agarak-2	PTRP, ADB	11	Zovuny	Not secured
5	Ararat-2	PTRP, ADB	12	Marash	Not secured
6	Shinuhayr	PTRP, ADB	13	Eghegnadzor	Not secured
7	Shahumyan-2	PTRP, ADB	14	Lichk	Not secured

C. Higher Level Objectives to which the Project Contributes

18. The declining reliability of the power transmission network creates economic costs and negative impacts on the incomes and welfare of the residents. By improving the reliability of the power transmission network, the proposed project supports the twin objectives of reducing poverty and promoting shared prosperity in the following way:

(a) *Reducing the rate of increase of electricity tariffs*. In particular, rehabilitation of YTPC substation allows avoiding the increase in the share of expensive generation in the power supply mix. In case of critical failure of YTPC substation, the modern and efficient CCGT plant will be disconnected from the grid. Therefore, the old and inefficient units of Hrazdan Thermal Power Plant (TPP) will need to run to make up for the gap at double the cost of YTPC, which will increase the end-user tariff by 8 percent and the poverty by 0.3 percent.[3] Thus, the project will help in reducing poverty, which would have been higher if the substation of the YTPC were not to be rehabilitated.

(b) *Boosting shared prosperity by improving power supply reliability to residential consumers as well as small and large industrial enterprises* in the area serviced by the Ashnak substation. It is expected that rehabilitation of Ashnak substation will generate benefits for electricity consumers across both genders in areas serviced by this substation. It should be noted that improvement of supply reliability will be especially beneficial for people who spend most of their time at home such as the elderly, children and women. Rehabilitation of Ashnak substation will also contribute to continued operation of small, medium and large enterprises. In particular, the improved reliability of supply will create benefits for a number of large industrial enterprises located in the service area, including a diamond polishing enterprise, dairy products company, and an asphalt producer, which employ a total of 6,500 people.

19. The proposed project is also consistent with the current Country Partnership Strategy (CPS) (October 9, 2013) for Armenia since it is centered on the Engagement Area 1.3 of the CPS

[3] World Bank team estimate.

(Improved access, quality, and sustainability of key infrastructure) to eliminate constraints to competitiveness and job creation through selective energy sector investments.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

20. The proposed project development objectives (PDO) are to improve the reliability of the power transmission network and system management, and support the Borrower's efforts in ensuring adequate electricity supply.

Project Beneficiaries

21. *Electricity consumers in the country*: The project will reduce the amount of un-served energy and help avoid an increase in overall electricity supply cost. Specifically, rehabilitation of Ashnak substation will reduce un-served energy for almost 120,000 electricity consumers due to increased frequency of failure of Ashnak substation. YTPC accounts for 20 percent of total annual electricity generation in the country. If it is disconnected from the grid due to failure of its substation, then the overall cost of meeting the electricity demand in the country will increase because: (a) the unreliable and inefficient old thermal units of Hrazdan TPP will need to be operated to make up the shortfall; and (b) the benefits under the electricity-for-gas swap deal with Iran will reduce, which will lead to an increase in the cost of electricity supply for all of the 1,040,000 electricity service customers[4] in the country.

22. *HVEN*: The improved reliability of Ashnak substation will: (a) reduce the un-served energy due to substation failures, and, thus, increase the operational revenue of HVEN; and (b) reduce the O&M costs given the increasing incidence of failure of key plant and equipment at the substation.

23. *YTPC*: The improved reliability of YTPC substation will: (a) increase the amount of electricity supplied and the operational revenue of YTPC; and (b) reduce the ramp-ups and downs of the generating unit required in case of the substation failure. Therefore, the wear-and-tear of the equipment of the generating unit and the associated maintenance costs will reduce.

24. *Electric Power System Operator (EPSO)*: The availability of a back-up dispatch center will allow the power system operator to immediately restore control over the system in case of failure of the primary dispatch center. This will help reduce the un-served energy. Finally, the project will reduce the future un-served energy by supporting the development of electricity generation capacity.

[4] The number of electricity service customers is smaller than the total population of around 3 million because the household is the customer of electricity service and not the individual members of the household.

PDO Level Results Indicators

25. The key outcome indicators include:

Indicator 1 (Custom): Equipment failures per year at Ashnak and YTPC substations. This indicator measures the number of equipment failures at Ashnak and YTPC substations, caused by technical factors, and resulting in the failure of substation operations.

Indicator 2 (Core): Average interruption frequency per year in the project area. This indicator measures the average number of interruptions per year in the project area. The indicator is computed by dividing the total number of customer interruptions in a year by the total number of customers in the project area. The baseline is the actual average interruption frequency per year in the project area at the beginning of the project. The project area includes the entire country.

Indicator 3 (Core): Direct project beneficiaries. People or groups who directly derive benefits from the intervention.

Indicator 4 (Custom): Down time of power system dispatch per year. This indicator measures the duration of the power system dispatch failures caused by technical factors (failure of equipment and operations) and/or emergencies.

Indicator 5 (Custom): Contract for construction of a new CCGT project competitively awarded to a qualified private developer. This indicator measures progress towards ensuring adequate electricity supply in the country.

III. PROJECT DESCRIPTION

A. Project Components

26. The project will achieve the development objective through implementation of the following three components: (a) strengthening of the power transmission network; (b) improvement of the power system management; and (c) preparation of a new electricity generation project.

27. **Component 1: Strengthening of the power transmission network (US$60.04 million, including IBRD loan of US$48.02 million)**. This component will finance:

28. **Sub-component 1.1: Rehabilitation of Ashnak substation of HVEN (US$20.53 million, including US$16.42 IBRD loan)**. This sub-component will help reduce the number of equipment failures caused by technical reasons, and, thus, improve the reliability of the power transmission network. This 220/110/10 kV substation is essential for ensuring reliable power supply to consumers in Eastern and North-Eastern parts of Armenia, including a large dairy products company, an asphalt plant, and a diamond polishing and jewelry production factory, which employ around 6,500 people.

29. This sub-component will finance replacement of all key equipment in the substation, including, but not limited to: complete rehabilitation of 220 kV Open Switchyard (OSY) and 110 kV OSY; replacement of main transformers; complete rehabilitation of 10 kV cubicles and the associated building; installation of the Supervisory Control and Data Acquisition System (SCADA) and replacement of protection relays, replacement of house transformers; and construction of a new building for control rooms. HVEN will implement this sub-component.

30. **Sub-component 1.2: Rehabilitation of YTPC's substation (US$35.88 million, including US$28.70 IBRD loan)**. This sub-component will help reduce the incidence of equipment failures at 220/110/35 kV YTPC substation. The substation is used for evacuation of electricity from the modern and efficient CCGT plant with 240 MW of installed capacity. The existing CCGT plant at YTPC accounts for 20 percent of the total annual electricity generation in the country. Therefore, it is essential for ensuring adequate and low-cost electricity supply to all of the 1,040,000 electricity consumers in the country.

31. This sub-component will finance replacement of all key plant and equipment in the substation, including, but not limited to: rehabilitation and expansion of 220 kV OSY and rehabilitation of 110 kV OSY; installation of new main transformers; installation of SCADA and replacement of protection relays; construction of a new building for control rooms in OSY; and reconnection of disconnected OTLs required for evacuation of power from YTPC. YTPC will implement this sub-component.

32. **Sub-component 1.3: Purchase of Machinery and Equipment for Maintenance of the Power Transmission Network (US$3.25 million, including US$2.60 million IBRD loan)**. This sub-component will contribute to improvement of the maintenance of the substations to be rehabilitated under the project, and, thus, contribute to sustainability of investments. HVEN has a shortage of specialized machinery and equipment, which extends the duration of recurrent repairs and emergency response to network failures caused by technical and other factors.

33. This sub-component will finance the purchase of cranes, specialized vehicles and other equipment, which is required for timely and appropriate maintenance of the substations. HVEN will implement this sub-component.

34. **Sub-component 1.4: Project implementation support to HVEN (US$187,500, including US$150,000 IBRD loan)**. This will include support in technical supervision of rehabilitation works at Ashnak substation.

35. **Sub-component 1.5: Project implementation support to YTPC (US$187,500, including US$150,000 IBRD loan)**. This will include support in technical supervision and safeguards compliance of rehabilitation works at YTPC substation.

36. **Component 2: Improvement of the power system management (US$3.13 million, including IBRD loan of US$2.50 million):** This component will finance the establishment of a back-up dispatch center, which will contribute to improvement of the power system management. Specifically, it is important for ensuring continuous management and control of the power system in case the primary dispatch center (located in down-town Yerevan) fails due to

technical or other reasons. In 2012-2014, the primary dispatch power system was down an average of 20 minutes per year.

37. The back-up dispatch center will allow for the immediate restoration of the control and management of the power system in case of such failure. If the operation and management of the system is not restored, then it may jeopardize reliability of the power system operation, which may cause electricity supply outages. The proposed back-up dispatch center will be located in an existing building owned by the Ministry of Energy and Natural Resources (MENR).

38. This sub-component will finance renovation of the interior space, procurement and installation of the mimic board, primary and back-up servers, fiber-optic connection with the nearest Haghtanak substation, and other civil works and equipment required for a back-up dispatch center. HVEN will implement this sub-component.

39. **Component 3: Preparation of a new electricity generation project (US$1.69 million, including US$1.35 million IBRD loan).** This component will finance:

40. **Sub-component 3.1: Preparation of a new CCGT project (US$1.63, including IBRD loan of US$1.30 million)**. The power system will need around 500 MW of new gas-fired generation capacity to preclude the emergence of a supply capacity gap by 2020. The new CCGT project is part of the Government's least-cost power supply plan until 2030. The Government plans to construct the new CCGT plant with private sector involvement, which will require a number of preparatory activities for which no financing is available.

41. This sub-component will include support for preparation of a bankable feasibility study, environmental and social impact assessment, transaction advisory and other technical assistance required for preparation of a new CCGT project. YTPC will implement this sub-component.

42. **Sub-component 3.2: Project audit (US$62,500, including IBRD loan of US$50,000).** This will include financing of project audits. HVEN will be responsible for the selection of the auditor. Consolidation of the project annual financial statements to be audited will be made by HVEN based on inputs provided by YTPC.

B. Project Financing

43. The project will be financed with a US$52 million IBRD loan provided to the Republic of Armenia. The Ministry of Finance will make the funds available to HVEN and YTPC based on the estimated cost of the sub-components of the project to be implemented by each of those entities.

Table 2: Project Cost and Financing

Project Components	Project cost	IBRD Financing	% Financing
1. Strengthening of the power transmission network	60.04	48.02	80%
2. Improvement of the power system management	3.13	2.50	80%
3. Preparation of a new electricity generation project	1.69	1.35	80%
Total Costs	**64.86**	**51.87**	**80%**
Total Project Costs	64.86	51.87	80%
Front-End Fees	-	0.13	100%
Total Financing Required	64.86	52.00	85%

C. Lessons Learned and Reflected in the Project Design

44. The project draws extensively upon the lessons of previous Bank engagement in the power sector of Armenia and other transmission projects implemented by the World Bank:

- *Strong commitment and ownership by the implementing agency is essential for post-project sustainability of the investment*. The proposed rehabilitation of the target substations reflects HVEN's and YTPC's priorities and the active involvement of the company management in identification, preparation and implementation is essential for generating ownership.

- *Use of design, supply and installation contracts*: Use of design, supply, and installation contracts for rehabilitation of substations reduces the overall procurement burden of the implementing entity and helps to mitigate some of the risks associated with substation projects, e.g. major disagreements on technical issues between the designer and the installation contractor.

- *Support during project implementation*: Hiring of a qualified consultant to provide project implementation support to YTPC in technical supervision and safeguards compliance is essential to ensure project success given that YTPC staff does not have experience in Bank financed projects.

- *Availability of back-up dispatch centre is important for improving power system management and ensuring reliable electricity supply*. Without a back-up dispatch centre, the power system cannot be managed, which will jeopardize the safety of the power system and the reliability of supply.

- *Robust preparatory work is essential for successful involvement of the private sector in new power generation projects*. Good quality bankable feasibility study, comprehensive Environmental and Social Impact Assessment (ESIA), and bidding documents for

selection of private developer are essential for ensuring successful involvement of private sector in large infrastructure projects, including CCGT.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

45. The project will have two implementing entities – HVEN and YTPC. Having two implementing entities under the project is justified given: (a) different ownership of assets; and (b) the need to ensure commitment during implementation.

46. HVEN, the state-owned power transmission company established in 1998, is responsible for operation, construction and maintenance of the high voltage power transmission network in the country. The implementation of the respective project sub-components at HVEN will be overseen by the Project Management Board. HVEN has designated a project team comprised of qualified project coordinator/engineer, power engineer, procurement specialist, financial manager, and project accountants responsible for daily implementation of the project related activities. HVEN will also hire a second procurement specialist given the increase in the work-load to ensure timely implementation of the project.

47. The implementation of the respective sub-components at HVEN will be overseen by the Project Management Board, consisting of representatives of HVEN, YTPC, the Government and other power sector companies. The implementation of the respective sub-components at YTPC will be overseen by the Project Management Board, which is the same as the Board of HVEN.

48. YTPC does not have experience with implementation of Bank financed projects but has implemented the US$260 million new CCGT project financed by Japan International Cooperation Agency (JICA). However, Yerevan Thermal Power Center (YTPC) has already started forming a project team and designated a procurement specialist and Financial Management (FM) specialist to work under the project. Moreover, YTPC hired experienced procurement and FM consultants to provide the required guidance to newly-appointed project staff. YTPC will also have an implementation support consultant to help with technical supervision and review of safeguards compliance of the project.

49. HVEN and YTPC will be responsible for implementation of FM functions of the Project including planning and budgeting, accounting, financial reporting, external auditing, funds flow, and internal controls. Each entity will be responsible for the implementation of the Project sub-components/activities assigned to it.

B. Results Monitoring and Evaluation

50. The Project Management Board and the management of HVEN and YTPC will have the overall responsibility for monitoring the outcomes of the project. Specifically, HVEN and YTPC will provide semi-annual reports on results indicators:

(a) To monitor the outcome indicator related to annual substation failures, HVEN and YTPC will use their existing substation log book records that contain chronological entries on all equipment failures at Ashank and YTPC substations accordingly.
(b) HVEN will use the publicly available data published by the Public Services Regulatory Commission (PSRC) for monitoring and evaluating the progress of the project, as measured by the system average interruption frequency[5] for the entire country.
(c) HVEN will regularly obtain from the Electric Networks of Armenia (ENA) the data on the number of customers serviced in the project area (which includes the entire country).
(d) HVEN will also be responsible for monitoring and reporting the number of direct project beneficiaries (including female beneficiaries) based on the data published by the United Nations (UN).
(e) HVEN will monitor the outcome indicator on dispatch down time in the country based on the data to be provided by EPSO, which maintains a log book registering the emergencies/failures of the dispatch function.
(f) HVEN will be responsible for operating the grievance redress mechanism under the project (for both substations) to monitor the results indicator on safeguards related grievances registered and responded to within the stipulated service standard.[6]

51. Overall, HVEN and YTPC have existing capacity to collect and process data required for the M&E system. In addition, the World Bank team will provide implementation support at least twice a year, including monitoring the results indicators defined in Annex 1, as well as additional financial management and procurement aspects of project implementation. A comprehensive evaluation of project results will be conducted during the project's mid-term review.

C. Sustainability

52. The sustainability of the investments will be secured by inclusion of the project investment costs and adequate level of O&M costs in the electricity transmission tariff of HVEN and YTPC for their respective shares of investments.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

53. The overall risk of the proposed project is Substantial due to Substantial Macroeconomic, Sector Strategies and Policy, Institutional Capacity for Implementation, and Fiduciary risks.

54. The Macroeconomic risk is Substantial due to anticipated negative impacts of the regional economic developments on the Armenian economy. The development partners will be supporting the Government to cope with the economic impacts of the regional developments.

55. The Sector Strategies and Policy risk is Substantial given the Government intervention in the financial management (borrowings and lending for non-core business related activities) and tariff filings (reduction or elimination of some expenses allowed under the tariff) of the state-owned

[5] Caused by power transmission network failures.
[6] 15 days for regular complaints and 30 days for complex complaints that require further inquiry.

power sector companies, which impacts the financial condition of those companies. The loan covenants under the project will help eradicate non-core business related financial activities and improve the financial condition of HVEN and YTPC.

56. The Institutional Capacity for Implementation risk is Substantial given that YTPC does not have prior experience with implementation of the Bank financed projects. YTPC hired experienced fiduciary consultants and will also be hiring an environmental specialist to support safeguards compliance.

57. The Fiduciary risk is Substantial because fiduciary staff of YTPC do not have experience in implementation of Bank financed projects. However, YTPC hired procurement and financial management consultants to guide and support the in-house fiduciary team. Moreover, the in-house fiduciary team participated, and will continue participating, in a number of procurement and FM trainings and is being mentored by experienced consultants. YTPC will also hire an implementation support consultant to help with technical supervision of the project and ensuring compliance of YTPC substation rehabilitation works with the Bank's environmental safeguards policies.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

Project Economic Analysis

58. This section includes: (a) project economic analysis; (b) project financial analysis; and (c) analysis and forecast of financial performance of HVEN and YTPC. The economic analysis of the project was done based on the incremental benefits and costs of the project. The financial viability of the project was assessed based on the incremental cash inflows and outflows from the perspective of HVEN and YTPC. The economic and financial analysis of the project covers only the investments in rehabilitation of the substations and the associated project implementation support consultancy.

59. Project economic benefits: The main economic benefits of the project are the: (a) reduction in the unserved energy in the areas served by Ashnak substation and reduction of O&M costs at Ashnak substation; and (b) avoided increase in the economic cost of meeting electricity demand due to disconnection of YTPC from the grid.

60. *Reduction in the unserved energy and O&M costs at Ashnak substation.* The economic benefit of improved reliability of Ashnak substation was quantified as the reduction in the unserved energy due to reduced incidence of equipment failures at Ashnak substation, which lead to unserved energy in the service areas dependent on this substation. Rehabilitation of the substation will also reduce the O&M costs at Ashnak substation given the severe dilapidation of the equipment, which requires significant expenses each year to maintain it in operational condition.

61. *Avoided increase in the economic cost of meeting electricity demand.* The economic benefit of improved reliability of YTPC substation was quantified as the avoided increase in the

economic cost of meeting the electricity demand due to: (a) the need to operate less efficient generation units in the system to supply the domestic market; and (b) reduction in the return received by Armenia under the electricity-for-gas swap deal with Iran.

62. Project economic costs: The economic costs of the project will be the investment cost, the cost of project implementation support engineer, and incremental O&M.

63. Results: The economic analysis of the project yielded an economic Net Present Value (NPV) of US$102.7 million and Economic Internal Rate of Return (EIRR) of 18.5 percent.

64. Sensitivity Analysis: Sensitivity analysis was conducted to assess the robustness of the estimated project economic returns to changes in the main evaluation variables. The results of the sensitivity analysis suggest that the project is financially robust even in case of substantial variation of main variables that affect its viability.

Project Financial Analysis

65. Project financial benefits for HVEN: The financial benefits of the project for HVEN are: (a) the incremental revenue from the sale of electricity due to reduced incidence of failures at Ashnak substation; and (b) O&M cost savings due to anticipated improved performance of the substation equipment after rehabilitation.

66. Project financial costs for HVEN: The financial cost of the project for HVEN is the investment cost for rehabilitation of the substation, the cost of the implementation support consultant, and the incremental O&M.

67. Results: The financial analysis of the project from the perspective of HVEN yielded a financial NPV of US$8.9 million and Financial Internal Rate of Return (FIRR) of 3.9 percent.

68. Sensitivity Analysis for HVEN: Sensitivity analysis was conducted to assess the robustness of the estimated project financial returns to changes in the main evaluation variables. The results of the sensitivity analysis suggest that the project may become financially unviable in case of 20 percent lower-than-projected increase of O&M costs under “without project” scenario, and simultaneous 20 percent lower-than-projected increase of O&M and 20 percent investment cost over-run.

69. Project financial benefits for YTPC: The project financial benefits for YTPC are: (a) incremental revenue from the sale of electricity due to reduced incidence of its substation failures; and (b) incremental revenue from gas-for-electricity swap.

70. The incremental revenue from the sale of electricity to the domestic market was computed using the forecast energy charge of YTPC considering the increase in the plant-gate price of natural gas and forecast amount of electricity supplied to the domestic market. The incremental revenue from gas-for-electricity swap was computed based on the forecast border price of Russian gas.

71. Project financial costs for YTPC: The financial cost of the project for YTPC is the investment cost for rehabilitation of the substation, the cost of the implementation support consultant, and the incremental O&M.

72. Results: The financial analysis of the project from the perspective of YTPC yielded a financial NPV of US$259.9 million and FIRR of 12.5 percent.

73. Sensitivity Analysis for YTPC: Sensitivity analysis was conducted to assess the robustness of the estimated project financial returns to changes in the main evaluation variables. The results of the sensitivity analysis suggest that the project is financially robust even in case of substantial variation of main variables that affect its viability.

Analysis and Forecast of Financial Performance of HVEN and YTPC

74. Analysis of the financial performance of HVEN: In 2010-2013, the financial performance of the company was volatile. The liquidity of the company was adequate in 2010 and declined in 2011-2012 as measured by the sufficiency of current assets to service the current liabilities. Overall, the company's performance improved in 2013 given an increase in tariff from AMD 0.4/kWh in 2012 to AMD1.3/kWh in 2013. The operating margin increased to 5 percent and the current ratio increased to 0.3.

75. Projected financial performance of HVEN: HVEN's operating margin is expected to improve from 5.1 percent in 2013 to 26.9 percent in 2015 due to upward revision of transmission tariffs to AMD1.6/kWh for 2014 and 2015. The company's ability to generate cash flow per kWh of transmitted electricity is estimated at an average of 56 percent over the projected period of 2014-2019. Liquidity, as measured by current ratio, is expected to significantly improve. The current ratio of 0.3 in 2013 is forecast to increase to 1.0 in 2019.

76. Analysis of the current financial performance of YTPC: In 2010-2013, YTPC had deterioration over almost all measures of operating performance, profitability and liquidity. Despite a slight improvement in cash flow based performance and interest and debt coverage indicators between 2012 and 2013, all indicators remained below the 2011 levels. In particular, the current ratio of the company reduced from 1.2 in 2011 to below 0.8 in 2013 primarily driven by fast build-up of payables, which increased from AMD13.2 billion in 2011 to AMD19.4 billion in 2013 and short-term liabilities owed to other power sector companies.

77. Profitability also worsened in 2012 and 2013 driven by increasing share of sales costs in the total revenues from the sales of electricity and capacity. Due to higher growth rate of cost of sales relative to that of revenues, the operating margins reduced. This suggests a lower than cost-recovery level of tariffs in 2012 and 2013. Specifically, the operating margin reduced from 3.37 percent in 2011 to 8.78 percent in 2013. Currently, almost all of the company's long-term debt (about 96 percent) consists of borrowing from JICA under the Yerevan CCGT project. The rest are short-term commercial loans in the amount of AMD6.6 billon (around US$16 million) and a long-term borrowing from other power sector companies in the amount of AMD5.2 billion (US$12.8 million).

78. Projected financial performance of YTPC: YTPC's operating margin is expected to improve from 8.8 percent in 2013 to 6.2 percent in 2014, to be followed by a decline in 2015-2019 if outstanding commercial debts not serviced through the tariff are not restructured. The company's ability to generate cash flow per unit of sales is expected to gradually improve from 4.4 percent in 2013 to around 13.4 percent in 2015 due to a substantial tariff increase that is effective from August 1, 2014 (from AMD20.07/kWh to AMD29.13/kWh).

B. Technical

79. The equipment and technologies for implementation and operation of the project are commercially proven, have been widely used by power sector companies in developed and developing countries worldwide, and will be implemented according to internationally accepted technical standards and practices. The investment costs were estimated by international consultants hired for the above referenced assessments and based on the costs of similar projects in both developed and developing countries, and specific market conditions in Armenia.

C. Financial Management

80. The FM arrangements of HVEN and YTPC were reviewed in December 2014 and were found overall adequate for project implementation. As it was agreed during the Project assessment, prior to Negotiations HVEN and YTPC developed and adopted Financial Management Manuals (FMMs) for the Project, which were agreed with the Bank. Currently, HVEN successfully implements ESRP (IBRD 8055) and the Preparation Grant (TF016604) for the Electricity Transmission Network Improvement Project. Meanwhile YTPC does not have any prior experience with Bank-financed projects; however the entity has gained experience while implementing the new CCGT project financed by JICA in 2006-2010. There is a strong ownership of the project by both entities' management.

81. The project will produce full sets of semi-annual interim un-audited financial reports (IFRs) to be submitted to the Bank within 45 days of the end of each calendar semester, from the first disbursement and throughout the Project life. Separate IFRs will be prepared and submitted to the Bank by HVEN and YTPC for the respective sub-components/activities of the Project under their implementation.

82. There are no pending audits for the project implemented by HVEN. The audits of the entities (HVEN and YTPC) and the project will be conducted: (a) by independent private auditors acceptable to the Bank, on terms of reference (TOR) acceptable to the Bank; and (b) according to the International Standards on Auditing (ISA) issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants (IFAC).

83. A single set of audited financial statements will be prepared for the project. Each entity will prepare the financial statements for their respective sub-components/activities of the project, and HVEN will be responsible for consolidating the annual financial statements of the project to be audited. The project audit will be procured by HVEN, while the audits of entities will be procured by the respective entities (HVEN and YTPC).

84. The annual audits of the entities and the project financial statements will be provided to the Bank within six months of the end of each fiscal year, and for the project also at the project closing.

85. Disbursement: HVEN and YTPC will establish and manage two separate Designated Accounts (DAs), in US$, specifically for this project (each for sub-components/activities under HVEN and YTPC implementation) in the Single Treasury Account of the Ministry of Finance at the Central Bank of Armenia, which is holding almost all DAs for ongoing World Bank financed projects in Armenia. In addition, the country budget system will be used for this project. For all the other FM elements, HVEN's and YTPC's respective systems are going to be used for this particular project.

D. Procurement

86. The procurement capacity assessment of the two implementing entities under the project, HVEN and YTPC, was conducted by the Bank's Procurement Specialist in November 2014. HVEN has acquired substantive experience in managing similar projects as it is the implementing agency of the ongoing ESRP and the Preparation Grant for the Electricity Transmission Network Improvement Project. It has a full-time procurement specialist who has knowledge of World Bank procurement rules and procedures. YTPC has no experience in implementing Bank-financed project, but has some experience in other international donor-funded projects. YTPC has a full-time procurement specialist who has no experience in procurement under Bank-funded projects. YTPC has also hired an experienced procurement consultant to strengthen its procurement capacity. The fiduciary staff (FM and procurement) of both agencies attended the procurement workshop conducted by the World Bank in Yerevan in September 2014. They also attended specific procurement courses at the International Labor Organization (ILO) in Turin in November 2014. As a result of these recent training activities, the procurement staff (especially the procurement specialist of YTPC) now has better understanding of the procurement procedures and basic principles governing World Bank procurement.

87. The procurement risk is assessed as Substantial. Key risks identified during the procurement capacity assessment include: (a) YTPC, one of the two implementing agencies, does not have experience in implementing Bank-financed projects; (b) weak capacity at YTPC in preparing ToR or technical specifications for some of the required consulting services and large works to be procured; and (c) lack of expertise and knowledge at YTPC of Bank's procurement procedures may lead to delays in completing evaluation of bids. Measures to mitigate these risks have been identified and are outlined under the relevant section in Annex 3.

88. A Procurement Plan covering the first 20 months of project implementation was prepared by HVEN and YTPC and agreed with the Bank. This procurement plan is provided in Annex 5. Its final/updated version will be disclosed (without cost estimates) and posted on the Bank's website and www.procurement.am. Preparation of the bidding documents for rehabilitation of Ashnak and YTPC substations (which account for 85 percent of the total estimated project cost) is underway and expected to be completed by mid-March 2015.

E. Social (including Safeguards)

89. The social impact of this project is positive as the project will improve the reliability of electricity supply in the project areas and generate indirect economic benefits. The project will create benefits for all energy consumers, including vulnerable and impoverished households. As specific beneficiary-level results are not expected, disaggregating project outcomes between men and women will not be attempted. It is expected that the project will have indirect benefits across genders to all electricity consumers in areas serviced by target substations. However, it should be noted that improvement of supply reliability will be especially beneficial for people who spend most of their time at home such as the elderly, children and women. The Armenia Gender Assessment (2014) shows that women spend about 5 times more time than men on household and family care activities, and a reliable electricity supply in their households is particularly important for them. Furthermore, over 60 percent of the population above the age of 55 is female. This group is vulnerable to poverty and is likely to benefit from stable electricity services.

90. Temporary positive impacts will also include economic benefits through the employment of local residents during construction works. HVEN will follow a strict non-discrimination policy towards women to provide them with equal employment opportunities. The project activities and potential risks will be communicated in a transparent manner. The project will promote gender-sensitive consultation mechanisms at all stages. These will include regular annual consultations during project implementation, where HVEN will update the local communities with regards to the project implementation status. Targeted outreach activities will be conducted to ensure that women attend these consultations and actively participate in them. A grievance redress mechanism (GRM), managed by HVEN for both substations, will also be in place to support citizen engagement with the project. The GRM will allow all project affected people and other interested stakeholders to submit complaints, suggestions, or questions related to the project.

F. Environment (including Safeguards)

91. The project is not expected to have significant irreversible impact on the natural environment and is therefore classified as Environmental Category B. All proposed works will be undertaken within the footprint of the existing infrastructure.

92. Rehabilitation of substations may result in generation of hazardous waste, such as replaced acid batteries and used transformer oils potentially containing PCBs. Waste disposal is a generally challenging task in Armenia due to lack of adequate infrastructure and effective control mechanisms. Some types of hazardous waste, including replaced acid batteries and transformer oils, are being put in storage until HVEN and YTPC find acceptable and affordable solutions for their permanent disposal. Site-specific Environmental Management Plans (EMPs) developed for works at the beneficiary substations provide detailed information on the conditions of the designated on-site storage facilities and lay out instructions for safe storage.

93. Small scale civil works for the arrangement of premises for the back-up dispatch center of EPSO will be undertaken within fenced plots belonging to the beneficiary institutions within an urban setting, with minimal likelihood of any environmental and social impacts that will be

addressed by adherence to simplified checklist EMPs prepared for these works and by applying general good construction practice.

G. Other Safeguards Policies Triggered

94. No land acquisition, resettlement or loss of access to land is expected under the proposed project. Given that the proposed project is focused on increasing the reliability of the electricity transmission network and specific beneficiary-level results are not expected, disaggregating project outcomes between men and women will not be attempted. However, it is expected that the project will have indirect benefits across genders to all electricity consumers in the country.

Annex 1: Results Framework and Monitoring

REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project (P146199)

Project Development Objectives

PDO Statement

The proposed project development objectives (PDO) are to improve the reliability of the power transmission network and system management, and support the Government efforts in ensuring electricity supply adequacy.

These results are at	Project Level

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline[7]	Cumulative Target Values				Frequency	Data Source/ Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	End Target			
Indicator One: Equipment failures per year in target substations[8]	☐	Number	10	10	10	10	2	Semi-annual	HVEN, YTPC	HVEN, YTPC
Indicator Two: Average interruption frequency per year in the project area[9]	☒	Number	0.11	0.11	0.11	0.11	0.09	Semi-annual	HVEN, PSRC	HVEN
Customers served in the project area[10]	☒	Number Sub-Type Supplemental	1,040,000	1,040,000	1,040,000	1,040,000	1,040,000	Semi-annual	Electric Networks of Armenia	HVEN
Indicator Three: Direct project beneficiaries[11]	☒	Number	2,984,000	2,989,000	2,992,000	2,993,000	2,993,000	Semi-annual	UN Population Reports / Data	HVEN

[7] All baseline values are as of 2014 with the exception of the baseline for the "Average interruption frequency per year in the project area" and the Supplemental indicator on the "Female beneficiaries," which are as of 2013 (annual).

[8] Equipment failures resulting in failure of substation operations, which impacts the reliability of electricity supply.

[9] The project area includes the entire country.

[10] The total number of electricity service customers/connections in the country. The target values are based on the UN Population Prospects Report, 2013.

[11] The total population in the country given that the project will generate country-wide benefits. The baseline is the UN forecast for 2014.

Female beneficiaries	☒	% Sub-Type Supplemental	48.6%[12]	48.6%	48.6%	48.6%	48.6%	Semi-annual	UN Population Reports / Data	HVEN
Indicator Four: Down time of power system dispatch per year[13]	☐	Minutes	20	20	20	20	0	Semi-annual	EPSO	HVEN
Indicator Five: Contract for construction of a new CCGT project competitively awarded to a qualified private developer	☐	Text	No	No	No	Yes	Yes	Semi-annual	YTPC	YTPC

Intermediate Results Indicators

Indicator Name	**Core**	**Unit of Measure**	**Baseline**	**Cumulative Target Values**				**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**
				YR1	**YR2**	**YR3**	**End Target**			
Intermediate Result Indicator One: Total number of substations rehabilitated under the project	☐	Number	0	0	0	0	2	Semi-annual	Project implementation progress reports of HVEN and YTPC	HVEN, YTPC
Intermediate Result Indicator Two: Back-up dispatch center constructed	☐	Text	n/a	Consulted selected for design of back-up dispatch center	Contract signed for civil works and procurement of equipment for back-up dispatch center	Construction works and procurement of equipment in progress	Back-up dispatch center tested and operational	Semi-annual	Project implementation progress reports of HVEN	HVEN
Intermediate Result Indicator Three: Preparation of a new CCGT project completed	☐	Text	n/a	Selection of consultants for feasibility study and	Feasibility study and ESIA completed; and	Tender documents for selection of a private developer	Tender documents for selection of a private developer	Semi-annual	Project implementation progress reports of YTPC	YTPC

[12] UN Population Prospects Report 2013. The share of females in the total population is assumed to remain unchanged
[13] A time period during the year, when the power system dispatch function fails due to technical factors.

				ESIA completed	transaction advisor mobilized	issued	issued			
Intermediate Result Indicator Four: Percent of registered project related grievances responded to within stipulated service standards for response times[14]	☐	%	0	100	100	100	100	Semi-annual	GRM reports of HVEN (covering both Ashnak and YTPC substations)	HVEN

[14] This refers to the environmental and social safeguards related grievances.

Annex 1: Results Framework and Monitoring

REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)
Equipment failures per year in target substations	This indicator measures the number of equipment failures at Ashnak and YTPC substations, caused by technical factors, and resulting in the failure of substation operations. Failure of substation operations impacts the overall reliability of electricity supply in the country.
Average interruption frequency per year in the project area	This indicator measures the average number of interruptions per year in the project area. The indicator is computed by dividing the total number of customer interruptions in a year by the total number of customers in the project area. The baseline is the actual average interruption frequency per year in the project area at the beginning of the project. The project area for the purposes of this project includes the entire country.
Customers served in the project area	No description provided.
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention.
Female beneficiaries	Proportion of the direct project beneficiaries that are female.
Down time of the power system dispatch per year	This indicator measures the duration of the power system dispatch failures caused by technical factors (failure of equipment and operations) and/or emergencies.
Contract for construction of a new CCGT project competitively awarded to a qualified private developer	This indicator measures the progress with development of new generation capacity to ensure electricity supply adequacy.

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)
Total number of substations rehabilitated under the project	This indicator measures the implementation progress of substation rehabilitation.
Back-up dispatch center constructed	This indicator measures implementation progress towards construction of the back-up dispatch center.

Preparation of CCGT project completed	This indicator measures the progress with implementation of feasibility study, ESIA, and transaction advisory for construction of a CCGT with private sector involvement.
Percent of registered project related grievances responded to within stipulated service standards for response times	This indicator measures the progress with responding to project related grievances related to environmental and social safeguards issues.

Annex 2: Detailed Project Description

REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project

95. The proposed project aims to improve the reliability of electricity transmission network in the project area. To this end, the project will support implementation of the following two components: (i) strengthening of the power transmission network; (ii) improvement of the power system management, and (iii) preparation of a new electricity generation project.

96. **Component 1: Strengthening of the power transmission network (US$60.04 million, including IBRD loan of US$48.02 million)**. This component will finance rehabilitation of target power transmission assets to reduce the incidence of plant and equipment failure, thus, improving the reliability of power transmission network in the project areas. Specifically, this component will finance:

97. **Sub-component 1.1: Rehabilitation of Ashnak substation of HVEN (US$20.53, including US$16.42 IBRD loan)**. This sub-component will help reducing the number of equipment failures caused by technical reasons, and, thus, improve the reliability of power transmission network. The Ashnak substation was commissioned in 1983 and has undergone no major rehabilitation since then. The substation is essential for ensuring reliable power supply to consumers in Eastern and North-Eastern parts of Armenia, including a large dairy products company, asphalt plant, and a diamond polishing and jewelry production factory, which employ around 3,500 people.

98. The scope of this sub-component will include complete rehabilitation of the substation, including: (a) complete rehabilitation of 220 kV OSY and 110kV OSY; (b) replacement of two existing 220/110/10 kV MTRs with boosting transformers with two new MTRs with boosting transformers; (c) complete rehabilitation of 10 kV cubicles and an associated building; (d) installation of SCADA and replacement of PRs with open architecture; (e) replacement of house transformers and Alternating Current/Direct Current (AC/DC) system; and Construction of a new building for control rooms. The existing SF6 circuit breakers will be retained and not replaced under the project.

99. **Sub-component 1.2: Rehabilitation of YTPC's substation (US$35.88, including US$28.70 IBRD loan)**. This sub-component will help reducing the incidence of plant and equipment failure at YTPC substation, and, thus, allow for reliable evacuation of the electricity generated at the modern CCGT station at YTPC. The substation was commissioned in 1965, and has not been rehabilitated since then. All key equipment is in poor condition and requires urgent rehabilitation. The substation is used for evacuation of electricity from the modern and efficient Combined Cycle Gas Turbine (CCGT) plant with 240 MW of installed capacity. The existing CCGT plant accounts for 20 percent of the total annual electricity generation in the country, which is expected to increase as the second unit is constructed.

100. The scope of this sub-component will include complete rehabilitation of this substation, including: (a) rehabilitation and expansion of 220 kV OSY and rehabilitation of 110 kV OSY; (b) installation of new main transformers; installation of SCADA and replacement of protection

relays; (c) construction of a new building for control rooms in OSY; (d) reconnection of disconnected OTLs required for evacuation of power from YTPC.

101. **Sub-component 1.3: Purchase of Machinery and Equipment for Maintenance of the Power Transmission Network (US$3.30 million, including US$2.60 million IBRD loan)**. This sub-component will contribute to improvement of the maintenance of the Ashnak and YTPC substations, and, thus, contribute to sustainability of investments in the power transmission assets. HVEN has a shortage of specialized machinery and equipment, which extends the duration of recurrent repairs and emergency response to network failures caused by technical and other factors. This sub-component will help to ensure sustainability of investments made under this project.

102. This sub-component will finance purchase of cranes, aerial towers, specialized vehicles and other equipment, which is required for timely and appropriate maintenance of the substations. HVEN will implement this sub-component.

103. **Sub-component 1.4: Implementation support to HVEN (US$187,500, including IBRD loan of US$150,000)**. This will include support in technical supervision of rehabilitation works.

104. **Sub-component 1.5: Implementation support to YTPC (US$187,500, including IBRD loan of US$150,000)**. This will include support in technical supervision and safeguards compliance of rehabilitation works.

105. **Component 2: Improvement of the power system management (US$3.13 million, including IBRD loan of US$2.50 million):** This component will finance establishment of a back-up dispatch center, which is important for ensuring continuous management and control of the power system in case the primary dispatch center (located in down-town Yerevan) fails due to technical or other reasons. In 2012-2014, the primary dispatch power system was down an average of 22 minutes per year.

106. The back-up dispatch center will allow to immediately restoring the control and management of the power system in case of such failure. If the operation and management of the system is not restored, then it may jeopardize reliability of power system operation, which may cause electricity supply outages. The proposed back-up dispatch center will be located in an existing building owned by the MENR.

107. This sub-component will finance: (a) renovation of the interior space of existing building where the back-up dispatch center will be located; (b) procurement and installation of the mimic board, primary and back-up servers; (c) supply and installation of two small in-house transformers; (d) procurement and installation of back-up diesel generator; and (e) fiber-optic and satellite connection with the nearest Haghtanak substation. HVEN will hire a consultant to prepare the design and bidding documents for establishment of the back-up dispatch centre.

108. **Component 3: Preparation of a new electricity generation project (US$1.69 million, including US$1.35 million IBRD loan).** This component will finance:

109. **Sub-component 3.1: Preparation of a new CCGT project (US$1.63, including IBRD loan of US$1.30 million)**. The power system will need around 500 MW of new gas-fired generation capacity to preclude the emergence of a supply capacity gap by 2020. The new CCGT is part of the Government's least-cost power supply plan until 2030. The Government plans to construct the new CCGT with private sector involvement, which will require a number of preparatory activities for which no financing is available.

110. This sub-component will include support for preparation of a bankable feasibility study, environmental and social impact assessment, transaction advisory and other technical assistance required for preparation of a new CCGT project. YTPC will implement this sub-component.

111. **Sub-component 3.2: Project audit (US$62,500, including IBRD loan of US$50,000).** This will include financing of project audits. HVEN will be responsible for the selection of the auditor. Consolidation of the project annual financial statements to be audited will be made by HVEN based on inputs provided by YTPC.

Annex 3: Implementation Arrangements

REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project

Project Institutional and Implementation Arrangements

Project administration mechanisms

112. The project will have two implementing entities – HVEN and YTPC. Having two implementing entities under the project is justified given: (a) different ownership of assets and (b) the need to ensure commitment during implementation.

113. HVEN, the state-owned power transmission company established in 1998, is responsible for operation, construction and maintenance of the high voltage power transmission network in the country. The implementation of the respective project sub-components at HVEN will be overseen by the Project Management Board, consisting of representatives of the HVEN, the Government and power sector companies. The HVEN operations are overseen by the company's Board, which consists of representatives of the HVEN, MENR, Ministry of Finance, other energy sector companies, and the State Property Management Department.

114. HVEN is currently implementing the World Bank financed ESRP and the Grant for Preparation of Electricity Transmission Network Improvement Project. Under the ongoing World Bank financed projects, HVEN is directly involved in all aspects of project implementation and has gained some experience in World Bank fiduciary and safeguards policies and operating procedures, however, further capacity building is required.

115. HVEN has designated a project team comprised of qualified project coordinator/engineer, power engineer, procurement specialist, financial manager, and project accountants responsible for daily implementation of the project related activities. HVEN will also hire the second procurement specialist given the increase in the work-load to ensure timely implementation of the project.

116. YTPC, the state-owned power transmission company established in 1999, is responsible for operation and maintenance of the power generation units of YTPC and its substation. The implementation of the respective project sub-components at YTPC will be overseen by the Project Management Board, consisting of representatives of the HVEN, the Government and power sector companies. The YTPC operations are overseen by the company's Board, which has the same composition as the Board of HVEN.

117. YTPC does not have experience with implementation of Bank financed projects but has implemented US$260 million new CCGT project financed by Japan International Cooperation Agency (JICA). However, YTPC has already started forming a project team and designated a procurement specialist and FM specialist to work under the project. Moreover, YTPC hired experienced procurement and FM consultants to provide the required guidance to newly-appointed project staff. YTPC will also have implementation support consultant to help with

technical supervision, contract administration and review of safeguards compliance of the project.

118. HVEN and YTPC will be responsible for the implementation of the financial management (FM) function of the project including planning and budgeting, accounting, financial reporting, external auditing, funds flow, and internal controls. Each entity will be responsible for the implementation of the project sub-components/activities assigned to it.

119. HVEN and YTPC have overall adequate FM/accounting staffing assigned to the project's implementation, which will also be supported by an experienced FM consultant who will be retained until the necessary knowledge and experience in the Bank's FM policies and procedures is built within the HVEN and YTPC. The financial manager of YTPC is on leave and is expected to be back before the project implementation commences. Meanwhile, it was agreed that in case the financial manager's return is delayed, YTPC will ensure that a new financial manager, acceptable to the Bank, is hired before the implementation of the project. In addition, before the project implementation YTPC will procure a separate project accounting module of the software and utilize it specifically for the project accounting (the above are not conditions but capacity building actions).

120. As it was agreed during the project assessment, prior to Negotiations HVEN and YTPC developed and adopted Financial Management Manuals (FMMs) for the Project, which were agreed with the Bank.

Financial Management, Disbursements and Procurement

Financial Management

121. The FM arrangements of HVEN and YTPC were reviewed and assessed as acceptable to the Bank and overall adequate for the Project implementation. As it was agreed during the Project assessment, prior to Negotiations HVEN and YTPC developed and adopted Financial Management Manuals (FMMs) for the Project, which were agreed with the Bank. The project FM assessment undertaken in December 2014 confirmed that, in particular: (i) the audits of the active Bank-financed project implemented by the HVEN revealed no major issues; and (ii) the IFRs on the active project implemented by HVEN were always received on time, and in general were found to be acceptable to the Bank, with a few exceptions. Meanwhile, YTPC has no any prior experience with the Bank-financed projects; however the entity has gained an experience in implementing the JICA funded new CCGT project. There is a strong ownership of the project by the management of both entities.

122. The overall FM risk for the project is assessed as Substantial, with the Inherent Risk assessed as moderate, while Control Risk is Substantial.

123. HVEN and YTPC are overall capable of preparing relevant budgets. The project annual budget will be based on the procurement plan. The budget will be classified by categories, components, and sources of funds.

124. HVEN and YTPC have overall adequate FM/accounting staffing assigned to the project's implementation, which will also be supported by an experienced FM consultant who will be retained until the necessary knowledge and experience in the Bank FM policies and procedures is built within the HVEN and YTPC. The financial manager of YTPC is on leave and is expected to be back before the project implementation. Meanwhile it was agreed that in case the financial manager's return is delayed, YTPC will ensure that a new financial manager, acceptable to the Bank, is hired before the implementation of the project.

125. Both entities utilize 1C accounting software (used by a few Armenian PIUs for quite a while and found to be adequate), which has a flexible and convenient report writing tool to generate reports in customized formats. Before the project implementation YTPC will procure a separate project accounting module of the software and utilize it specifically for the project accounting. For the project accounting and reporting accrual basis is applied. The entities use IFRS for reporting purposes. The current chart of accounts for the ongoing project will be adapted to be used for the project as well.

126. There are overall adequate internal control systems at HVEN and YTPC. As it was agreed during the project assessment, prior to Negotiations HVEN and YTPC developed and adopted Financial Management Manuals (FMMs) for the project, which were agreed with the Bank. It was also agreed that for the new project both entities will not use petty cash box and all the payments under the project will be made via treasury/bank transfers.

127. There are overall adequate contract management systems at both entities. The monitoring of the contract payment related data is conducted via specifically tailored Excel spreadsheets, where all the information about the contract progress (such as accepted deliverables and payments made under the acceptance acts and cumulative, as well as the remaining balances) is tracked. The reconciliation of the project's accounting records with the WB disbursement data will conducted on a regular basis (at least once a quarter) via the WB Client Connection System.

128. SOEs will be prepared in Excel spreadsheets and reconciled to the accounting software. Both entities maintain fixed assets register in the accounting software. All fixed assets of the HVEN and YTPC are allocated to the personnel, who are formally responsible to safeguard the allocated assets. Both entities conduct annual stocktaking of fixed assets. No internal audit function exists at either entities, while the internal audit function of MENR conducts audits of the entities operations, considered acceptable.

129. The format of the IFRs has been confirmed during assessment and includes: (i) Project Sources and Uses of Funds, (ii) Uses of Funds by Project Activity, (iii) Designated Account Statement, (iv) A Statement of the Financial Position, and (v) SOE Withdrawal Schedule.

130. HVEN and YTPC will produce full sets of IFRs every calendar semester throughout the life of the project. These financial reports will be submitted to the Bank within 45 days of the end of each calendar semester. Separate IFRs will be prepared and submitted to the Bank by HVEN and YTPC for the respective sub-components/activities of the project under their implementation.

131. Until recently the local legislation required that the annual financial statements of large entities be audited. Recently this requirement was removed from the local law on accounting, and the audit is no more mandatory. Meanwhile, under the project the audits of both entities' annual financial statements will be required to monitor the implementing entities' financial results and performance, which is critical for the project implementation. In this respect certain financial rations will be monitored through respective loan covenants.

132. YTPC has no experience in the audit arrangements for the Bank-financed projects. The auditor issues unmodified (clean) opinion on the FY2013 entity audit[15] of YTPC (while there were some issues resulting in qualified opinion in previous years audits of YTPC financial statements, which were improved subsequently). HVEN's current auditing arrangements are overall satisfactory to the Bank (there are no pending audits under the ongoing project implemented by HVEN, and no major issues[16] have arisen in the latest audit of the active project implemented by HVEN).

133. It has thus been agreed that audit arrangements similar to those under the on-going project implemented by HVEN will be adopted for the project, to cover the project financial statements, while the auditor appointment process at both entities (for the Project and entities audit) will be closely monitored by the Bank. The annual audits of the entities and the project financial statements will be provided to the Bank within six months since the end of each fiscal year; and for the project also at the Project closing. If the period from the date of effectiveness of the project to the end of the Borrower's fiscal year is no more than six months, the first audit report of the project may cover financial statements for the period from effectiveness to the end of the second fiscal year. The Borrower has agreed to disclose the audit reports for the project and the entities within one month of their receipt from the auditors and acceptance by the Bank, by posting the reports on its (http://www.minenergy.am or www.hven.am) web sites. Following the Bank's formal receipt of these reports from the Borrower, the Bank will make them publicly available according to World Bank Policy on Access to Information.

134. Consolidated financial statements will be prepared for the project; the consolidation of the Project annual financial statements to be audited will be made by HVEN based on inputs provided by YTPC. The audit of the entities (HVEN and YTPC) and the project will be conducted (i) by independent private auditors acceptable to the Bank, on terms of reference (TOR) acceptable to the Bank and procured by HVEN and YTPC[17], and (ii) according to the International Standards on Auditing (ISA) issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants (IFAC). The sample audit TORs for the Project and the entities audit were agreed with the Bank. The cost of the project audit will be cover by the project, while the entity audits will be financed from the entities' funds.

[15] The audits of the entity (YTPC) financial statements were conducted by auditors which were not from the list of eligible auditors acceptable to the Bank.
[16] Meanwhile the auditor issues qualified opinion on the FY2012 entity (HVEN) financial statements, while the audit opinion was unmodified on the latest (FY2013) audited financial statements of the entity.
[17] The entities audits will be procured by HVEN and YTPC, while the Project audit will be procured by HVEN.

Disbursements

135. The FM/accounting staff of the HVEN is aware of the Bank's disbursement policies and procedures as currently HVEN implements a Bank-financed project. Meanwhile the YTPC FM/accounting staff has no experience in the Bank disbursement policies and procedures. The FM consultant hired by the entities will provide necessary support in the management of the Project's Designated Accounts and the Bank disbursement procedures.

136. HVEN and YTPC will establish and manage two separate Designated Accounts (DA), in US$, specifically for this Project (each for sub-components/activities under HVEN and YTPC implementation) in the Single Treasury Account of the Ministry of Finance at the Central Bank of Armenia, which is holding almost all DAs for ongoing World Bank financed projects in Armenia.

137. Project funds will flow from the Bank, either: (i) via the DAs to be maintained in the Treasury, which will be replenished on the basis of SOEs or full documentation; or (ii) on the basis of direct payment withdrawal applications and/or special commitments, received from the HVEN or YTPC. The government funding will be made via the Treasury through regular budget allocation procedures initiated by the implementing agency in accordance with standard Treasury and Budget execution regulations. No issues are expected with the government counterpart funding as the level and timeliness of the government counterpart funding under the Armenian portfolio (including the ongoing project) is adequate for a number of years. Meanwhile, the recent economic slowdown in Armenia may have some adverse impact on the level and timeliness of the co-financing of donor funded project. Both the Bank and the counterpart funding will be managed by HVEN and YTPC, each of which will be responsible for its DA and the counterpart funding account for the implementation of their sub-components/activities respective.

138. Withdrawal Applications documenting funds utilized from the DAs will be sent to the Bank at least every three months. The following disbursement methods may be used under the Project: Reimbursement, Advance, Direct payment and Special Commitment. The DA ceiling for YTPC is proposed to be established at US$2,000,000 and for HVEN – at US$1,500,000, which is reflected in the Disbursement Letter. Detailed instructions on withdrawal of loan proceeds are provided in the Disbursement Letter.

Procurement

139. Procurement for the project will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-consulting Services Under IBRD Loans and IDA Credits and Grants" dated January 2011and revised as of July, 2014 (Procurement Guidelines); and "Guidelines: Selection and Employment of Consultants Under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011 and revised as of July 2014 (Consultant Guidelines) and the provisions stipulated in the Legal Agreement (LA) and the project OM. The World Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credit and Grants dated October 15, 2006 and

revised on January 2011, would also apply. The various items to be procured under the project and the different expenditure categories are described below.

140. Risk Rating**:** The procurement risk is assessed as Substantial. The following measures were agreed to mitigate the risks and maintain the implementing team's capacity**.**

Description of Risk	Risk Rating	Mitigation Measures	Residual Risk Rating
YTPC has no experience in procurement under Bank-financed projects.	S	Procurement specialist of YTPC attended the procurement workshop organized by the World Bank in Yerevan on September 28-October 2, 2014. Additionally, the procurement specialist attended specific procurement courses in ILO Turin. The procurement specialist will continue to undergo more training to further improve the knowledge of the Bank's procurement procedures and apply them in project implementation. Moreover, YTPC hired an experienced procurement consultant to provide support and guidance during implementation of the project.	M
Weak capacity of YTPC to prepare Terms of Reference for consulting assignments.	S	The Bank team will provide sample TORs to the YTPC, which can be used to formulate TORs for the assignments. Close involvement of Bank technical experts in the review of the TORs for hiring such consultants.	M
Limited capacity at HVEN and weak capacity at YTPC to prepare technical specifications for the works to be procured.	S	The project will finance consultant services to support HVEN and YTPC to prepare technical specifications.	M
Works contracts are delayed due to faulty technical designs leading to contract amendments and	M	Bank's technical expert will provide the required support during preparation of the detailed	L

implementation delays.		designs and will review the technical specifications in the bidding documents. In addition, the implementing entities will hire consulting firms to help supervise works.	
Low participation of firms in bidding for goods and selection of consultants.	S	The implementing agency will publish Invitation for Bids (IFBs) and Request for Expressions of Interest (REOIs) and allow firms sufficient time to respond. HVEN and YTPC will keep the list of firms responding to the GPN so that they can be notified directly when IFBs and REOIs are published.	M

141. **General Procurement Notice**: Initial General Procurement Notice (GPN) at identification stage was published in the UNDB on November 15, 2013. A GPN update will be published in the UNDB after project Board approval. Specific Procurement Notices (SPN) will be published for all procurement under ICB and Consulting contracts as per the Bank's Procurement and Consultant Guidelines.

142. Thresholds for Procurement Methods

143. Goods: Goods and equipment estimated to cost US$1,000,000 or more would be procured through International Competitive Bidding (ICB). Goods estimated to cost less than US$1,000,000 and more than US$100,000 would be procured through National Competitive Bidding (NCB). Readily available off-the-shelf goods estimated to cost less than US$100,000 each may be procured through Shopping (SH) on the basis of at least three written quotations obtained from qualified suppliers. The World Bank Standard Bidding Documents for Goods and sample for Invitation to Quote shall be used. Direct Contracting method for goods consistent with justifications per Procurement Guidelines will be subject to the World Bank prior review.

144. Works: Works estimated to cost US$5,000,000 and more would be procured through ICB. Works estimated to cost less than US$5,000,000 and US$200,000 and more would be procured through NCB. Contracts estimated to cost less than US$200,000 each may be procured through Shopping (SH) procedures on the basis of at least three written quotations obtained from qualified contractors. Direct Contracting method for works consistent with justifications per Procurement Guidelines will be subject to World Bank prior review.

145. Consultant Services**.** Consultancy services to be provided by consulting firms estimated to cost US$300,000 or more would be procured through Quality and Cost Based Selection

(QCBS) method. Consultancy services to be provided by consulting firms estimated to cost less than US$300,000 may be procured through Consultants' Qualifications Selection (CQS) method. Other methods such as Fixed Budget Selection (FBS), Quality Based Selection (QBS), and Least Cost Selection (LCS) shall be made available through the legal agreement. Individual Consultants (IC) will be selected in accordance with Section V of the Consultancy Guidelines. Single Source Selection (SSS) method for firms and individuals consistent with justifications per Consultant Guidelines will be also specified in the Legal Agreement and it will be subject to the World Bank prior review. For assignments estimated to cost less than US$300,000, the shortlist may comprise only of national firms according to the paragraph 2.7 of the Consultant Guidelines. However, if foreign firms express interest, they shall be considered.

146. Prior Review Thresholds

Procurement Method	**Prior Review Threshold**
ICB (Works)	All contracts
ICB (Goods)	All contracts
NCB (Works)	First contract, if any, for each implementing entity
NCB (Goods)	First contract, if any, for each implementing entity
Shopping (Works)	First contract, if any, for each implementing entity
Shopping (Goods)	First contract, if any, for each implementing entity
Direct Contracts (Goods and Works)	All contracts
Selection Method*	
QCBS, QBS, FBS, LCS	=/> $500,000
CQS	First contract
Single Source Selection (Consulting Services)	All contracts

147. All TORs are subject to prior review irrespective of prior/post review status.

148. Procurement Plan**.** For each contract to be financed under the project, the various procurement or consultant selection methods, the estimated costs, prior review requirements, and time frame have been agreed between the Borrower and the Bank and presented in the Procurement Plan (Annex 5). There is no prequalification anticipated under the project. However, there are two ICB works contract for rehabilitation of substations. These two ICB contracts amount to approximately US$45 million, which is 87 percent of the loan amount. The rest of the loan amount is to finance consulting services for technical supervision services and preparation of new CCGT project, all under QCBS except for project audit which will be under LCS.

149. The Procurement Plan will be updated as required to reflect the actual project implementation needs and improvements in institutional capacity. The Procurement Plan, its updates or modifications, shall be subject to the Bank's prior review and no objection before implementation. Since there are two implementing agencies, HVEN will take the lead in submitting any revision of the procurement plan. YTPC will coordinate with HVEN when any revision is required, HVEN will reflect it in the plan, and then submit it to the Bank for review and no objection. The final version of the Procurement Plan will be disclosed (without cost estimates) and posted on the Bank's external website in accordance with paragraph 1.18 of

Procurement Guidelines and paragraph 1.25 of the Consultants Guidelines and in www.procurement.am.

150. Post-review Percentages and Frequency**.** In addition to the prior review supervision to be carried during the Bank team's implementation support missions, post review by the Bank' procurement specialist will be carried out on a sample basis (15% in terms of number of contracts) once per year. Physical inspection will also be conducted for at least 10% of the contracts.

151. Procurement Files**.** Both implementing agencies will maintain complete procurement files, which will be reviewed by the Bank's implementation support missions. All procurement related documentation that requires the Bank's prior review will be cleared by the Procurement Specialist and relevant technical staff.

Environmental and Social (including safeguards)

152. **Environmental**: The investments under the project will include rehabilitation of Ashank substation and the substation serving YTPC, and establishment of a back-up dispatch center. The project is not expected to have significant irreversible impact on the natural environment and is therefore classified as environmental Category B. All proposed works will be undertaken within the footprint of the existing infrastructure.

153. Rehabilitation of Ashank and YTPC substations will imply replacement of dilapidated control buildings and almost entire set of obsolete equipment. All works will be undertaken within the fenced territories of substations that are registered as public property on the balance sheets of HVEN and YTPC accordingly. The main environmental risk associated with rehabilitation of substations is the generation of hazardous waste, such as replaced acid batteries and used transformer oils potentially containing PCBs. Waste disposal is a generally challenging task in Armenia due to lack of adequate infrastructure and effective control mechanisms. Some types of hazardous waste, including replaced acid batteries and transformer oils, will be put in storage at HVEN and YTPC facilities until the above entities find acceptable and affordable solutions for their permanent disposal. This practice will be applied at Ashnak and YTPC substations. Site-specific Environmental Management Plans (EMPs) developed for works at the beneficiary substations provide detailed information on the conditions of the allocated on-site storage facilities and lay out instructions for safe storage. Used oils may be treated on-site and sold for re-use by HVEN. A specialized company with years of experience in Armenia is capable of providing oil treatment services. However, sale of used oils is optional and subject to discretion by HVEN, not being part of the project activities.

154. Small scale civil works for establishment of premises for the back-up dispatch center of EPSO will be undertaken within fenced plots belonging to beneficiary institutions within urban setting, with minimal likelihood of any environmental and social impacts that will be addressed by adherence to simplified checklist EMPs prepared for these works and applying general good construction practice.

155. **Social**: The social impact of this project is positive as the project will improve the reliability of electricity supply in the project areas and generate indirect economic benefits. The project will create benefits for all energy consumers, including vulnerable and impoverished households. As specific beneficiary-level results are not expected, disaggregating project outcomes between men and women will not be attempted. It is expected that the project will have indirect benefits across genders to all electricity consumers in areas serviced by target substations. It should be noted that improvement of supply reliability will be especially beneficial for people who spend most of their time at home such as the elderly, children and women as well as those who have the primary responsibility for cooking and cleaning, typically women. The Armenia Gender Assessment (2014) shows that women spend about 5 more time than men on household and family care activities, and a reliable electricity supply in their households is particularly important for them. Further, over 60 percent of the population above the age of 55 is female. This group is vulnerable to poverty and is likely to benefit from stable electricity services.

156. The project will support widespread stakeholder information-sharing and consultation. The project activities and potential risks will be communicated in a transparent manner. The project will promote gender-sensitive consultation mechanisms at all stages. A grievance redress mechanism will also be in place to support citizen engagement with the project. The GRM will be operated by HVEN for both substations and allow project affected people and other interested stakeholders to submit all types of complaints, suggestions, or questions related to the project. HVEN will be responsible for widely advertising the availability of the GRM in the vicinity of both substations (on public billboards, in the vicinity of construction sites, in its offices, etc.), and it will accept complaints submitted via regular mail, email, phone, or as part of in-person meetings. All complaints will be registered by HVEN and a tracking registration number will be assigned to each complainant. Regular complaints will be addressed within 15 days, and complex complaints that require further inquiry will be addressed within 30 days (the complainant will be notified accordingly in such a case). In case that the complaint cannot be resolved by HVEN, they will be responsible for registering it, conveying to the relevant authority, and notifying the complainant accordingly. All responses will be provided to complainants in a written form. The implementation of the GRM will be monitored as part of Key Indicator #3 on the percent of registered project related grievances responded to within stipulated service standards for response times.

Monitoring & Evaluation

157. HVEN and YTPC will be responsible (each for its relevant sub-components) for monitoring and evaluating the PDO Level and Intermediate Results Indicators during implementation, and submitting semi-annual implementation progress reports to the World Bank. HVEN, YTPC, Public Services Regulatory Commission (PSRC), UN Population Division, and Electric Networks of Armenia (ENA), the power distribution company, generate all of the required data to monitor the progress towards achievement of the PDO Level Results Indicators. The baseline values for the results indicators were provided by HVEN and YTPC. The target values were discussed and agreed with the implementing entities and the MENR.

158. To monitor the outcome indicator related to annual substation failures, HVEN and YTPC will use their existing substation log book records that contain chronological entries on all equipment failures at target substation. The average interruption frequency per year in the project area (which includes the entire country), caused by transmission network failures, will be monitored by HVEN through the data published quarterly by PSRC. HVEN will be getting from ENA the data required for monitoring of the supplemental indicator of customers served in the project area. HVEN will be responsible for monitoring and reporting the number of direct project beneficiaries (including female beneficiaries) and the supplemental indicator of female beneficiaries based on the data published by the UN. HVEN will monitor the outcome indicator on dispatch down time in the country based on the data to be provided by EPSO, which maintains a log book registering the emergencies/failures of the dispatch function. HVEN will be responsible for operating the grievance redress mechanism under the project (for both substations) to monitor the results indicator on grievances registered and responded to within the stipulated service standard, which is 15 days for regular complaints and 30 days for complex complaints that require further inquiry.

159. HVEN and YTPC have capacity to collect and process data required for the M&E system. In addition, the World Bank team will supervise implementation progress at least twice a year, including results indicators defined in Annex 1 as well as additional financial management and procurement aspects of project implementation. A comprehensive evaluation of project results will be conducted during the project's mid-term review.

Annex 4: Implementation Support Plan

REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project

Strategy and Approach for Implementation Support

160. The implementation support strategy was developed considering the risks identified in the SORT and targets provision of flexible and efficient implementation support to the client.

- Procurement**:** The procurement related implementation support will include: (i) timely advice on various procurement related issues and guidance on the Bank's Procurement and Consultant Guidelines; (ii) technical support in reviewing the bidding documents, Request for Proposals, amendments, evaluation reports and other procurement-related documents; (iii) monitoring of procurement progress against the procurement plan; and (iv) post review of contracts.

- Financial management: As part of its project implementation support and supervision missions, the Bank will conduct risk-based financial management implementation support and supervisions within a year from the Project effectiveness, and then at appropriate intervals. During the Project implementation, the Bank will supervise the Project's financial management arrangements in the following ways: (a) review the Project's semi-annual IFRs as well as the entities' and the Project's annual audited financial statements and auditor's management letters and remedial actions recommended in the auditor's management letters; and (b) during the Bank's on-site missions, review the following key areas (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (iii) disbursement arrangements and financial flows, including counterpart funds, as applicable; and (iv) any incidences of corrupt practices involving project resources. As required, a Bank-accredited Financial Management Specialist will participate in the implementation support and supervision process.

- Various technical aspects: The Bank team will provide just-in-time implementation support to HVEN and YTPC on: (i) technical aspects of substation rehabilitation, including technical specifications; and (ii) resolving issues related to detailed designs of substations to be rehabilitated under the project.

- Environmental and social safeguards: The Bank's environmental and social specialists will provide regular support to HVEN and YTPC in ensuring compliance with EMPs under the project, timely resolution of safeguards issues, and timely response and clarifications on safeguards related questions and issues. Additionally, YTPC will be supported during project implementation by a Consultant with proven and broad experience in international good practice conduct, which will also provide advice and practical assistance in safeguards matters.

Implementation support plan

161. The project team will provide timely and effective implementation support through regular implementation support missions (i.e. within six months from the project effectiveness date, and then at appropriate intervals), recurrent monitoring and evaluation of project results, facilitating implementation of procurement and financial management risk mitigation measures recommended by the Bank and providing technical advice to HVEN and YTPC on fiduciary requirements, safeguards, operations and technical aspects to support project implementation. The project team consists of both headquarter and country office based staff to ensure an appropriate mix of sectoral, operational, country and fiduciary experts. The team will conduct an extensive mid-term review and provide the following implementation support through a combination of field visits and regular exchanges using video conferencing, audio conferencing, and emails).

- Procurement support: The project team will conduct risk-based implementation support and supervise procurement arrangements in the following ways: (i) providing detailed guidance on the Bank's Procurement and Consultant Guidelines to HVEN and YTPC; and (ii) prior and/or post-review of procurement documents, including timely comments and suggestions for improvements;

- Financial management: As part of its project implementation support and supervision missions, the Bank will conduct risk-based financial management implementation support and supervisions within a year from the Project effectiveness, and then at appropriate intervals. During the Project implementation, the Bank will supervise the Project's financial management arrangements in the following ways: (a) review the Project's semi-annual IFRs as well as the entities' and the Project's annual audited financial statements and auditor's management letters and remedial actions recommended in the auditor's management letters; and (b) during the Bank's on-site missions, review the following key areas (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (iii) disbursement arrangements and financial flows, including counterpart funds, as applicable; and (iv) any incidences of corrupt practices involving project resources. As required, a Bank-accredited Financial Management Specialist will participate in the implementation support and supervision process.

- Technical support: The technical support of the project team will focus on: (i) supporting preparation of technical specifications for bidding documents; (ii) support with review of detailed designs for rehabilitation of substations; (iii) supervising rehabilitation of substations.

- Environmental and social safeguards: The Bank team will regularly monitor implementation of the site-specific EMPs to help implementing entities address any safeguard related issues that may arise.

Time	Focus	Skills Needed	Resource Estimate (staff weeks (SW))
First twelve months	Task management	Sr. Energy Economist	5 SWs
	Technical review of the bidding documents	Power engineer	4 SWs
	Procurement review of the bidding documents	Procurement specialist	6 SWs
	Financial management	Sr. Financial management specialist	4 SWs
	Support with review of detailed designs; and supervision of rehabilitation of target infrastructure; and construction of new infrastructure	Power engineer	4 SWs
	Environmental supervision	Sr. Environmental specialist	2 SWs
12-48 months	Task management	Sr. Energy Economist	25 SWs
	Review of procurement documents, and procurement guidance	Procurement specialist	16 SWs
	Financial management and disbursements	Financial management specialist	10 SWs
	Guidance and implementation support on technical/power engineering issues	Power engineer	20 SWs
	Environmental supervision	Environmental specialist	4 SWs
	Social supervision	Social development specialist	4 SWs

162. The staff skill mix and focus in terms of implementation support is summarized in the tables below.

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task team leader	30	Field trips as required	Country office based
Procurement specialist	22	4-6	Headquarters based. Trips to be combined with support mission for other Armenia projects
Sr. Financial management specialist	14	Field trips as required	County office based
Power engineer	28	6-8	Headquarters based
Environmental specialist	6	4	Georgia office based
Social specialist	4	4	Headquarters based

Annex 5: Procurement Plan
REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project

I. General

1. **Project information**:
   a. Project Name: Electricity Transmission Network Improvement Project
   b. Project ID – P146199
   c. Implementing Agencies: High Voltage Electric Networks CJSC, Yerevan Thermal Power Plant CJSC
2. **Bank's approval Date of the procurement Plan**:
3. **Date of General Procurement Notice**: November 15, 2013
4. **Period covered by this procurement plan**: 20 months

II. Goods and Works and Non-consulting services.

1. **Prior Review Threshold**: Procurement Decisions subject to Prior Review by the Bank as stated in Appendix 1 to the Guidelines for Procurement:

	Procurement Method	Prior Review Threshold	Procurement Method Threshold	Comment
1.	ICB (Works)	All contracts	≥US$5.0 mil	
2.	ICB (Goods)	All contracts	≥US$1.0 mil	
3.	NCB (Works)	First contract, if any, for each implementing entity	<US$5.0 mil.	
4.	NCB (Goods)	First contract, if any, for each implementing entity	<US$1.0 mil.	
5.	Shopping (Works)	First contract, if any, for each implementing entity	<US$200,000	
6.	Shopping (Goods)	First contract, if any, for each implementing entity	<US$100,000	
7.	Direct Contracts (Goods and Works)	All contracts.		

All negotiations with lowest bidder, cancellation of procurement or selection process and/or rebidding shall be subject to prior review.

2. **Pre-qualification**. – N/A
3. **Reference to (if any) Project Operational/Procurement Manual:** Operational Manual acceptable to the Bank prepared by the Borrower;
4. **Any Other Special Procurement Arrangements**: N/A
5. **Procurement Packages with Methods and Time Schedule**

Ref. No.	Contract (Description)	Est. Cost, US$ (tax inclusive)	Est. Cost, US$ (tax exclusive)	Proc. Method	Review by Bank (Prior / Post)	Expect. Bid-Open. Date
ETNIP_HVEN_ICB_1/2015	Rehabilitation of Ashnak substation	20,525,000	16,420,000	ICB	Prior	Nov. 2015
ETNIP_YTPP_ICB_1/2015	Rehabilitation of substation of YTPC	35,875,000	28,700,000	ICB	Prior	Nov. 2015
ETNIP_HVEN_ICB_3/2015	Establishment of back-up dispatch center	3,125,000	2,500,000	NCB	Prior	Apr. 2016
ETNIP-_HVEN_ICB_4/2015	Procurement of specialized machinery and vehicles	3,250,000	2,600,000	ICB	Prior	Apr. 2016

ICB - International Competitive Bidding (in accordance with section 2 of the Guidelines);
NCB - National Competitive Bidding (in accordance with paragraph 3.3 – 3.4 of the Guidelines)
SH - Shopping (in accordance with paragraph 3.5 of the Guidelines);
DC - Direct Contracting (in accordance with paragraphs 3.7-3.8 of the Guidelines)

III. Selection of Consultants

1. **Prior Review Threshold**: Selection decisions subject to Prior Review by Bank as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants:

	Selection Method	Prior Review Threshold	Comments
1.	Contracts with Firms	=/>US$ 500,000 and all SSS contracts	
2	Contracts with Individual Consultants	=/>US$ 200,000 and all SSS contracts	

2. **Short list comprising entirely of national consultants:** Short list of consultants for services, estimated to cost less than $300,000 equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.
3. **Any Other Special Selection Arrangements:** None
4. **Consultancy Assignments with Selection Methods and Time Schedule**

Ref. No.	Description of Assignment	Est. Cost US$ (tax inclusive)	Est. Cost US$ (tax exclusive)	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
ETNIP_HVEN_CS_1/2015	Project implementation support to HVEN	187,500	150,000	QCBS	Prior	Jun. 2015	
ETNIP_YTPP_CS_2/2015	Project implementation support to YTPC	187,500	150,000	QCBS	Prior	Jun. 2015	
ETNIP_YTPC_CS_2/2015	Feasibility study for new CCGT project	750,000	600,000	QCBS	Prior	Jun. 2015	
ETNIP_YTPC_CS_3/2015	Environmental and social impact assessment study for new CCGT	375,000	300,000	QCBS	Prior	Aug. 2015	

	project						
ETNIP_YTPC_CS_4/2015	Transaction advisory support for new CCGT project	500,000	400,000	QCBS	Prior	Oct. 2015	
ETNIP_HVEN_CS_1/2016/2017/2018/2019/2020	Project Audit	62,500	50,000	LCS	Post		

QCBS = Quality and Cost-based Selection (in accordance with paragraphs 2.1 - 2.35 of the Consultant's Guidelines)
FB-Selection under Fix Budget
QBS = Quality Based Selection (in accordance with paragraph 3.2 the Consultant's Guidelines)
LCS = Least-Cost Selection (in accordance with paragraph 3.6 of the Consultant's Guidelines)
CQ = Consultants Qualifications (in accordance with paragraph 3.7 of the Consultant's Guidelines)
SSS= Single source Selection (in accordance with paragraph s 3.8-3.11 of the Consultant's Guidelines)
IC = Individual Consultant (in accordance with section V of the Consultant's Guidelines)
SS-Soul Source Procedures for the Selection of IC
SOE= Statement of Expenditure

Annex 6: Map

REPUBLIC OF ARMENIA: Electricity Transmission Network Improvement Project