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IDA/R2018-0398/2

January 14, 2019

Closing Date: Tuesday, January 15, 2019 at 6:00 p.m.

FROM: Vice President and Corporate Secretary

West Bank and Gaza - Electricity Sector Performance Improvement Project

Additional Financing

Extension of Closing Date

Due to the inclement weather and the closure of WBG Washington, D.C. offices in effect Monday, January 14, 2019, the closing date for the proposed additional grant from the Trust Fund for Gaza and the West Bank, administered by the International Development Association to the Palestinian Liberation Organization (for the benefit of the Palestinian Authority) for the Electricity Sector Performance Improvement Project (IDA/R2018-0398) is being extended to **Tuesday, January 15, 2019**.

Distribution:
Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC, and MIGA

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IDA/R2018-0398/1

December 18, 2018

Closing Date: Monday, January 14, 2019 at 6:00 p.m.

FROM: Vice President and Corporate Secretary

West Bank and Gaza - Electricity Sector Performance Improvement Project

Additional Financing

Project Paper

Attached is the Project Paper regarding a proposed additional grant to West Bank and Gaza for the Electricity Sector Performance Improvement Project (IDA/R2018-0398), which is being processed on an absence-of-objection basis.

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Document of

The World Bank

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Report No: PAD3110

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL GRANT

IN THE AMOUNT OF US$5 MILLION

FROM THE TRUST FUND FOR GAZA AND WEST BANK (TFGWB)

WITH CO-FINANCING FROM THE PARTNERSHIP FOR INFRASTRUCTURE DEVELOPMENT MULTI-DONOR TRUST FUND (PID-MDTF) IN THE AMOUNT OF US$7 MILLION

TO

THE PALESTINIAN LIBERATION ORGANIZATION (FOR THE BENEFIT OF THE PALESTINIAN AUTHORITY)

FOR

THE ELECTRICITY SECTOR PERFORMANCE IMPROVEMENT PROJECT

December 14, 2018

Energy and Extractives Global Practice
Middle East And North Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective November 20, 2018)

Currency Unit =	Israeli New Shekel (ILS)

US$1 = ILS 3.74

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
AMI	Advanced Metering Infrastructure
BI	Business Intelligence
C-GAP II	Second Country Gender Action Plan
CMS	Commercial Management System
DISCOs	Distribution Companies
EIRR	Economic Internal Rate of Return
ERP	Enterprise Resource Planning
ESMF	Environmental and Social Management Framework
ESPIP	Electricity Sector Performance Improvement Project
FIRR	Financial Internal Rate of Return
GEDCO	Gaza Electricity Distribution Company Ltd.
GENRP	Gaza Electricity Network Rehabilitation Project
GHG	Greenhouse Gas
GoI	Government of Israel
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HEPCO	Hebron Electric Power Company
ICRC	International Committee of the Red Cross
IEC	Israeli Electric Corporation
IFC	International Finance Corporation
IMS	Incidence Management System
JDECO	Jerusalem District Electricity Company
M&E	Monitoring and Evaluation
MFD	Maximizing Finance for Development
MIGA	Multilateral Investment Guarantee Agency
MIS	Management Information System
MoFP	Ministry of Finance and Planning
MSMEs	Micro, Small, and Medium Enterprises
NEDCO	Northern Electric Distribution Company
NGO	Nongovernmental Organization
NPV	Net Present Value
OPEX	Operational Expenditure

PA	Palestinian Authority
PDO	Project Development Objective
PENRA	Palestinian Energy and Natural Resources Authority
PERC	Palestinian Electricity Regulatory Council
PETL	Palestinian Electricity Transmission Company Limited.
PID-MDTF	Partnership for Infrastructure Development Multi-Donor Trust Fund
PMU	Project Management Unit
POM	Project Operations Manual
PPA	Power Purchase Agreement
PPG	Project Preparation Grant
PV	Photovoltaic
RPP	Revenue Protection Program
SED	Securing Energy for Development
SELCO	Southern Electric Company
SMEs	Small and Medium Enterprises
TA	Technical Assistance
TEDCO	Tubas Electricity Distribution Company
WHO	World Health Organization

Regional Vice President:	Ferid Belhaj
Country Director:	Marina Wes
Senior Global Practice Director:	Riccardo Puliti
Practice Manager:	Erik Magnus Fernstrom
Task Team Leader:	Monali Ranade

West Bank and Gaza
Electricity Sector Performance Improvement Project - Additional Finance

TABLE OF CONTENTS

BASIC INFORMATION – PARENT (West Bank and Gaza Electricity Sector Performance Improvement Project - P148600)

Country	Product Line	Team Leader(s)		
West Bank and Gaza	Special Financing	Monali Ranade		
Project ID	**Financing Instrument**	**Resp CC**	**Req CC**	**Practice Area (Lead)**
P148600	Investment Project Financing	GEE05 (9263)	MNC04 (5562)	Energy & Extractives

Implementing Agency: Palestinian Energy and Natural Resources Authority (PENRA)

Is this a regionally tagged project?
No

Bank/IFC Collaboration
No

Approval Date	Closing Date		Original Environmental Assessment Category	Current EA Category
27-Jul-2017	30-Jun-2022		Partial Assessment (B)	Partial Assessment (B)

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach [MPA]	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-Linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	

Development Objective(s)

The Project Development Objective is to enhance institutional capacity of the energy sector, improve efficiency of the distribution system in targeted areas, and pilot a new business model for solar energy service delivery in Gaza.

Ratings (from Parent ISR)

	Implementation	Latest ISR
	01-Dec-2017	17-Jun-2018
Progress towards achievement of PDO	S	S
Overall Implementation Progress (IP)	S	S
Overall Safeguards Rating	S	S
Overall Risk	H	H

BASIC INFORMATION – ADDITIONAL FINANCING (Electricity Sector Performance Improvement Project - Additional Finance - P167914)

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P167914	Electricity Sector Performance Improvement Project - Additional Finance	Restructuring, Scale Up	No
Financing instrument	Product line	Approval Date	
Investment Project Financing	Special Financing	14-Jan-2019	
Projected Date of Full Disbursement	Bank/IFC Collaboration		
30-Jun-2022	No		
Is this a regionally tagged project?			
No			

Financing & Implementation Modalities

[ ] Series of Projects (SOP)	[✓] Fragile State(s)

[ ] Disbursement-Linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[✓] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	
[ ] Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
Grants	11.00		11.00	0 %

PROJECT FINANCING DATA – ADDITIONAL FINANCING (Electricity Sector Performance Improvement Project - Additional Finance - P167914)

FINANCING DATA (US$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	11.00	12.00	23.00
Total Financing	11.00	12.00	23.00
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

Non-World Bank Group Financing

Trust Funds	12.00
Partnership for Intrastructure Development MDTF	7.00
Special Financing	5.00

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any other Policy waiver(s)?

[ ] Yes [✓] No

INSTITUTIONAL DATA

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Monali Ranade	Team Leader (ADM Responsible)		GEE05
Lina Fateh Allah Abdelmauty Rjoub	Procurement Specialist (ADM Responsible)		GGOPM
Riham Hussein	Financial Management Specialist (ADM Responsible)		GGOMN
Helen Z. Shahriari	Social Specialist (ADM Responsible)		GSU05
Zeyad Abu-Hassanein	Environmental Specialist (ADM Responsible)		GEN05
Andrianirina Michel Eric Ranjeva	Team Member		WFACS
Elisabeth Maier	Team Member		GEE05
Eman S. M. Ashour	Team Member		GEE05
Fifi Z. Antar	Team Member		MNCGZ
Imtiaz Hizkil	Team Member		GEE05
Mark M. Njore	Team Member		GEE05
Natalia Robalino	Counsel		LEGAM
Pedro Antmann	Team Member		GEE08
Sara Badiei	Team Member		GEE05

Extended Team

Name	Title	Organization	Location

I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Country Context

1. The fragile conditions in the West Bank and Gaza have worsened in 2018, particularly due to a decline in economic activity and ongoing border conflicts in Gaza. The economy has been restrained for more than two decades by restrictions on movement, access, and trade that have kept investment levels extremely low and has resulted in deindustrialization. Substantial transfers, mostly in the form of aid from the international community, have helped mitigate the impact of the restrictions through fueling consumption-driven growth. Nevertheless, transfers have also been declining, particularly in Gaza, resulting in a lower growth trajectory for the overall economy. The current critical situation requires renewed efforts by the donors, the Palestinian Authority (PA), and the Government of Israel (GoI).

2. One of the fastest growing challenges facing West Bank and Gaza is the high unemployment rate. In Gaza, 53.7 percent of labor force were unemployed in the second quarter of 2018. Lack of electricity supply is one of the several factors that are severely constraining economic opportunities, particularly in Gaza. Until there is a permanent peace agreement, the economy and the electricity sector cannot achieve its full potential. However, even in the interim, the electricity sector can contribute toward enhancing the performance of the economy, reducing fiscal deficits, and ensuring improved competitiveness and fiscal sustainability of the Palestinian economy through improved service delivery.

B. Sector Context

3. Electricity sector institutions in West Bank and Gaza are relatively nascent. The Palestinian Energy and Natural Resources Authority (PENRA) was established in 1995, and while efforts to consolidate the sector into distribution companies (DISCOs) began as early as in 1997, the Palestine Electricity Regulatory Council (PERC) was created in 2009. The Palestine Electricity Transmission Company Limited (PETL) was created in 2013, as a 'single buyer and transmission system operator' to bring cohesion in the sector. All the key Palestinian institutions are now established with continued efforts to consolidate customers currently serviced by villages and local municipal bodies into existing or new DISCOs. The Palestinian and Israeli electricity sectors remain deeply intertwined with Israeli imports accounting for approximately 95 percent of electricity supply in West Bank and more than half in Gaza.

4. PENRA's strategic long-term vision is to achieve greater autonomy through advanced transmission and distribution infrastructure, domestic generation through independent power producers, and financial and operational sustainability of its institutions. This vision is being implemented through a sustained reform process that is led by PENRA and supported by the donor community, to transform the energy sector into a structured, regulated, and efficient service. This process has also witnessed the establishment and growth of PETL and PERC. World Bank support to the energy sector takes a long-term, programmatic approach. Successive and complementary engagement through Electricity Utility Management Project (2008–16), development policy grants, and flagship technical assistance (TA), such as the Securing Energy for Development (SED) report, have contributed to defining PENRA's vision and supporting realization of its vision.

5. Financial sustainability is crucial for the energy sector to become creditworthy to attract interest of the private sector and to invest in continuous improvements in service delivery. This requires a

significant reduction in nonpayment and revenue losses to the distributors and payment discipline across the sector. For years, the PA subsidized non-payers of electricity, creating a moral hazard through the mechanism known as 'net lending', which allows Israeli Electric Corporation (IEC) to recover unpaid dues from the tax revenues collected by the GoI on behalf of the PA. In September 2016, the PA and GoI entered into an agreement to resolve past electricity sector debt. An interim Power Purchase Agreement (PPA) was signed by PETL in July 2017 that further strengthens their role in the energy sector. This is expected to be followed by a long-term PPA between IEC and PETL that would provide much-needed coherence and economies of scale to the sector. The overarching PPA framework was initialed in May 2018, with the details still under negotiation.

6. The Electricity Sector Performance Improvement Project (ESPIP) was designed to provide continued support to PENRA's long-term vision of strengthening financial and operational sustainability of the electricity sector and diversification of power sources through short-term measures to enhance the energy sector's institutional capacity, improve efficiency of the electricity distribution system, and pilot a new business model for solar energy service delivery in Gaza. The ESPIP supports institutions and interventions along the Palestinian energy supply chain, covering generation, transmission (PETL), distribution (DISCOs), and regulation (PERC). Given the fragile and complex nature of operations in West Bank and Gaza, the scope of ESPIP components was designed to allow flexibility to support scale-up.

7. Building on current status of electricity sector reforms and institutional development, significant further efforts are required to achieve sustained improvements, address power supply constraints that limit private sector development and job creation, particularly in Gaza Strip; support implementation of the Israeli-Palestinian electricity debt agreement and the interim and long-term PPAs with Israel; and enable diversification of power supply and sources. The proposed Additional Financing (AF) continues the programmatic engagement by scaling up ESPIP activities and paving the way for continued support to development of the energy sector in West Bank and Gaza.

C. ESPIP Implementation Summary

8. The ESPIP was approved by the World Bank Group Board of Executive Directors in July 2017, and become effective in January 2018. Project Preparation Grant (PPG) of US$2.5 million was extended in August 2016 to begin implementation of Components 1 and 4 (see below) enabled PENRA to make significant progress, as summarized in the following paragraphs. As of December 7, 2018, 21 percent (US$2.32 million) of the original ESPIP grant of US$11 million had been disbursed, and the remaining funds are expected to be fully disbursed before the closing date of June 30, 2022.

9. **Component 1: Strengthening the Capacity of Palestinian Electricity Sector Institutions** focuses on sustainability and performance of PETL and PERC. Procurement of equipment for PETL for testing, commissioning, and maintenance of the new high voltage substations has been completed as a high-priority task. This has enabled PETL to start generating revenues through the sales of power to the cities of Jenin and Tubas under the interim PPA and reduce its dependence on donor support. The component also focuses on supporting monitoring and evaluation (M&E) and financial audit functions of PERC. The implementation of a dedicated PERC interface has been integrated in the management information system (MIS) activity for DISCOs to allow seamless transfer of information on key performance indicators.

10. **Component 2: Improving the Operational Performance of Palestinian Electricity Distribution**

Companies (DISCOs). For the Revenue Protection Program (RPP), the ESPIP focused on the five DISCOs in West Bank, and for the MIS, the ESPIP only focuses on partial implementation in two DISCOs in West Bank. The recently conducted technical studies, undertaken as part of Energy Sector Programmatic TA[1], assessed and reconfirmed the importance for the ESPIP to engage all DISCOs and PERC to ensure alignment of technical practices and standards for procurement of metering infrastructure as part of an RPP and harmonization of MIS. The technical specifications for the RPP and MIS are being finalized, in consultation with all six DISCOs. To enhance cost-effectiveness, efficiency, and ensure harmonization, comprehensive procurement and implementation plans for the RPP and MIS are expected to cover all DISCOs using ESPIP and ESPIP AF funds.

11. **Component 3: Improving Energy Security in Gaza with Solar Energy** was formally launched in October 2018. PENRA and Gaza Electricity Distribution Company Ltd. (GEDCO) have signed the agreement for management of the revolving fund, which defines the operational details, including household and small business (small and medium enterprise [SME]) selection criteria, respective roles and responsibilities, and terms of GEDCO's financial guarantee. The project will offer rooftop solar Photovoltaic (PV) kits of sizes 2 kWp, 3 kWp, 5 kWp, 7 kWp, and 10 kWp with the repayment accumulating into a revolving fund. Technical specifications for these kits have been finalized and installation for the pilot phase is expected to start in 2019. The ESPIP also envisaged support to a health facility and PENRA, in coordination with the World Health Organization (WHO) and the Ministry of Health, has identified Nasser hospital as a potential beneficiary. Based on initial assessment undertaken as part of the Energy Sector Progammatic TA, a rooftop PV system could be implemented in Nasser hospital to complement the ongoing efforts of the WHO and the International Committee of the Red Cross (ICRC) and the ESPIP and ESPIP AF funds could be pooled to install up to 400 kWp system. The detailed technical design is expected to be completed by June 2019 through the ongoing Energy Sector Progammatic TA.

12. **Component 4: Technical Assistance, Capacity Building, and Project Management.** This component has been supporting staffing of the Project Management Unit (PMU) and financing other capacity-building activities. The PMU has agreed on a Sustainability Plan, which involved gradual transfer of PMU staff from the ESPIP budget to PENRA payroll by July 2019. This is proceeding as planned with around 75 percent of the PMU staff already transferred. This has resulted in savings that could allow the ESPIP to provide strategic support to the PMU, focusing on key positions and technical experts until project closing in 2022.

13. The project ratings are Satisfactory for financial management, project management, safeguards, and M&E and Moderately Satisfactory for procurement. Interim unaudited financial reports were regularly submitted and found acceptable to the World Bank. There are currently no overdue audit reports for the project. The overall progress toward achievement of the Project Development Objective (PDO) and implementation progress are currently rated Satisfactory.

D. Rationale for Additional Financing (AF)

14. The ESPIP was designed to be scalable to facilitate identification and systematic deployment of additional funds toward the strategic and long-term goals of the electricity sector. In the initial year of

[1] The TA is funded by the Partnership for Infrastructure Development Multi-Donor Trust Fund (PID-MDTF) in West Bank and Gaza

project implementation, PENRA has extensively engaged PETL, PERC, and DISCOs in West Bank and Gaza. This engagement has been undertaken as part of the Energy Sector Progammatic TA. This has created a community of experts across the Palestinian energy sector institutions and enabled an improved understanding of the support required from the ESPIP to improve the operational and financial performance of DISCOs and effective information sharing among PETL, PERC, and PENRA. This engagement has resulted in identification of the specific needs for a project scale-up, which are addressed through this AF. The alternative instruments to the AF were assessed, such as a new operation, and it was agreed to proceed with an AF for the following reasons:

(a) The proposed AF is fully consistent with the development objectives of the parent project and is strategically aligned with the current World Bank Group's Assistance Strategy, which highlights the promotion of an environment for dynamic, inclusive private sector growth for job creation, and strengthening of institutions' accountability and capability. The activities under the ESPIP and this AF will improve creditworthiness of the electricity institutions and attractiveness of the sector to private companies.

(b) The AF will scale up original project activities and thus follow the same components and rationale for the financing allocation as outlined in the next section under proposed changes.

(c) The components under the ESPIP parent project were essentially designed as pilot activities with the flexibility to support scale-up, as funds become available.

(d) The AF will allow the use of donor funds that have been made available for immediate utilization, specifically to support scale-up of the ESPIP.

(e) The AF operation will allow to consolidate and streamline the implementation and technical capacity that was built under the parent project (ESPIP) and strengthen the intended outcomes.

(f) In terms of processing, the AF operation would help reduce transaction costs and implementation time, while allowing streamlined preparation and processing procedures—both from the World Bank and the client's perspective.

(g) The AF is not expected to change the environmental safeguards category or trigger new safeguard policies.

15. The AF, similar to the parent project, remains fully aligned with the World Bank Group's Assistance Strategy FY18-21 for West Bank and Gaza (Report No. 115201-GZ, discussed by the Board of Executive Directors on December 5, 2017), whose overarching objective is to create conditions that incentivize the private sector and simultaneously mitigate the risks faced while investing in a fragile and uncertain environment. The project supports the World Bank Group's strategic goals of ending extreme poverty and boosting shared prosperity in a sustainable manner through improved service delivery for people living in fragile and conflict-affected situations. The project contributes to implementation of the World Bank Group's regional Middle East and North Africa strategy pillars: 'Renewing the Social Contract' and 'Recovery and Reconstruction,' by strengthening reliability and transparency in energy sector institutions and enhancing energy security in Gaza Strip. The project also contributes to the World Bank

Group and Middle East and North Africa Climate Action plan, and will contribute to reducing approximately 830,000 tons of $CO2e^2$ across West Bank and Gaza over the technical lifetime of all components of the project, including the diesel-based power supply that will be directly offset by the Gaza solar component.

16. **Maximizing finance for development (MFD).** The project directly supports the MFD approach by supporting sector reform, capacity development, and revenue strengthening interventions across the value chain as the foundation for financial and operational sustainability of the sector, which is crucial to encourage private sector participation in the power sector. The Palestinian electricity sector suffers from binding constraints, such as limited creditworthiness and accumulated arrears that impede private sector investments in power generation. The ESPIP is an integral part of the complementary support being provided by World Bank Group institutions (including International Finance Corporation [IFC] and Multilateral Investment Guarantee Agency [MIGA]), in terms of transaction advisory, risk insurance, financing and co-investment grants to structure demonstrative transactions to accelerate private sector solutions and financing for the sector.

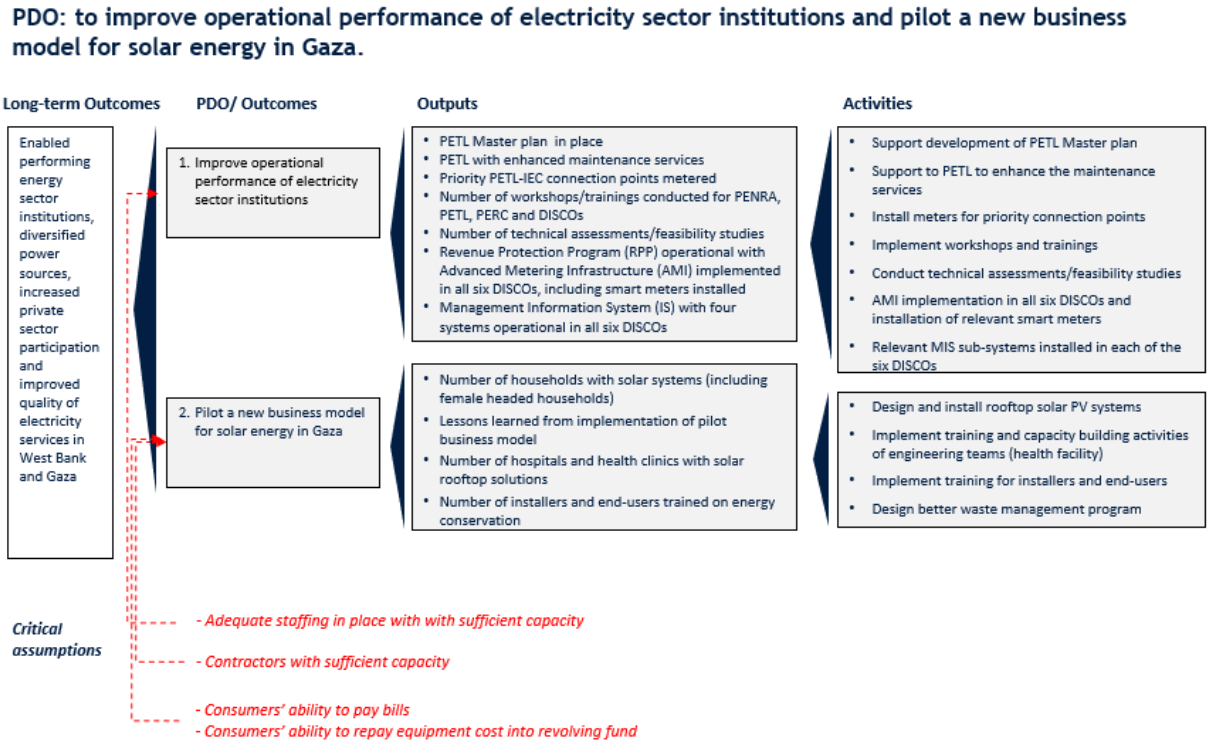
II. DESCRIPTION OF ADDITIONAL FINANCING

A. Project Design

17. The AF encompasses and scales up each of the components under the ESPIP based on experience gained during the first year of implementation of the parent project. The theory of change for the AF is presented in figure 1. A description of the specific activities being financed by the AF is provided below, and table 1 summarizes the project costs and financing by component.

[2] Carbon dioxide equivalent

Figure 1. Theory of Change for the AF



18. **Component 1: Strengthening the Capacity of Palestinian Electricity Sector Institutions, PETL and PERC.** The AF will enhance focus on operational performance of PETL through the following additional activities, based on the priorities identified by PENRA, which are essential for PETL to fulfill its responsibilities as the single buyer and transmission system operator and implement the long-term PPA with the IEC. The AF is providing technical, operational and legal function support to the PETL aimed at strengthening its capacity including, through

(a) Development of PETL master plan

(b) Enhancement and support of PETL maintenance services

(c) Support metering of 80 priority electricity connection points that will be managed by PETL, as part of the transition plan that is agreed under the IEC-PETL PPA

19. **Component 2: Improving the Operational Performance of Palestinian Electricity Distribution Companies (DISCOs).** The AF will finance a simple and direct scale-up of the activities being implemented under the ESPIP parent project to include all the six DISCOs in West Bank and Gaza and enable support to new DISCOs that will be created as part of the ongoing sector consolidation efforts. The simultaneous planning and installation across all DISCOs will ensure harmonization of operational and reporting capabilities of DISCOs and strengthen planning and monitoring across the sector.

(a) **RPP.** Based on the detailed technical review of the current metering systems and key challenges, uniform installation of advanced metering infrastructure (AMI) will be installed

in the six DISCOs across West Bank and Gaza. The AF will support expansion of smart meters deployment under the RPP to Gaza DISCO, in addition to the plans under the ESPIP for West Bank DISCOs.

(b) **MIS.** Based on the detailed technical review of the current MIS in the six DISCOs, their emerging needs and opportunities for harmonization to improve information flows within the sector, a comprehensive and flexible approach has been defined. While ESPIP target was to support two DISCOs in West Bank, the revised target (with AF) is for each of the six DISCOs in West Bank and Gaza to have a functioning MIS that includes all four subsystems: Enterprise Resource Planning (ERP), Customer Management System, Incident Management System (IMS), and Business Intelligence (BI). In addition, the MIS at each DISCO will also include reporting linkage with PETL, PERC, and PENRA. As PENRA continues to pursue consolidation in the sector, 1 to 2 new DISCOs may be created in 2019–20, the AF will enable the same MIS system to be deployed in these new DISCOs once they are duly registered in the company register.

20. **Component 3: Improving Energy Security in Gaza with Solar Energy.** This component will scale up: (a) the pilot solar revolving fund established under the ESPIP parent project and (b) the solar rooftop solutions for health facilities in Gaza Strip.

(a) Pilot Solar Rooftop PV Revolving Fund.

21. This sub-component supports the design and pilot implementation of a sustainable business model for rooftop solar energy program in Gaza, including purchasing and installing rooftop solar systems on rooftops of Beneficiaries, and designing a pay-back scheme aimed at, inter alia: (i) reducing the barrier to entry for all income levels to ensure beneficiaries from the entire income spectrum can participate in the program; (ii) increasing energy security in case of conflict; (iii) providing longer hours of available power supply and better alternative to stand-by generators.

22. This component seeks to pilot a sustainable business model, in the form of a revolving fund mechanism (payback scheme), that would enable adoption of rooftop solar PV systems by households and SMEs. The business model will not only have a multiplier effect as repayments from beneficiaries support additional customers, it will also support development of a local market for solar PV system design, supply, installation, and after-sales service. The mechanism will be supported by awareness and capacity-building program to improve sustainability of the impact. The pilot will be reviewed on an ongoing basis to ensure continued improvement and course correction, which will be documented through a periodic report on lessons learned.

23. The revolving fund is being implemented through a PENRA-GEDCO agreement, referenced in the previous section, which enshrines the key requirements to enhance sustainable operation of the business model, such as selection of customers with good track record of payment of GEDCO bills, verifiable and steady source of income of beneficiaries, and availability of required roof areas. The initial phase of the revolving fund mechanism will focus on salaried employees and small businesses. The economic conditions in Gaza Strip have deteriorated further over the past years with widespread loss of jobs and incomes. The private sector entities, especially micro, small, and medium enterprises (MSMEs) are facing loss of productivity due to frequent power cuts and a major loss of income due to the exorbitantly high

price of electricity (as high as US$1 per kWh) from diesel generators, which they can only afford for very short periods. This situation is also resulting in MSMEs reducing their own staff, contributing to rising unemployment. This has led to the decision to strengthen the focus on the urgent energy needs of MSMEs. It is expected that the systems can help improve productivity and incomes for MSME, which would not only enable the revolving fund mechanism but also, more importantly, help contribute to the local economy.

24. The economic situation has led to the identification of a new customer category in the household category, which is a multigenerational, multifamily dwelling ('household') with multiple income streams. Such a household typically has the available roof space, needs a larger system, and can pool resources under the umbrella of the head of the family to afford monthly repayments toward the 48-month desired payback period. Many such dwellings are also used for multiple purposes, with small workshops being run on the premises or next to the premises. During consultations with potential customers in Gaza, many MSMEs and householders indicated that larger-size systems (5 kWp–10 kWp) would fulfill multiple purposes, they can run their businesses or households and potentially share the excess power for specific uses by other occupants in the building, which could include family members or neighbors. These factors contribute to expanding the range of rooftop solar PV systems from 2.5 kWp to 10 kWp. The AF will supplement the original ESPIP funds to enable procurement of larger solar units with a special emphasis on SMEs.

25. **Gender.** According to Second Country Gender Action Plan (C-GAP II) for West Bank & Gaza (FY2018–21), Palestinian women are among the most educated in the Middle East and North Africa Region with female students representing over 60 percent. However, the majority are clustered in social fields compared to science, technology, engineering, and mathematics (STEM) fields and do not meet the needs of the employment market. Female labor force participation rates increased from a low 10 percent to 20 percent between 2000 and 2017 (Middle East and North Africa average rate is 21 percent). Access to financial institutions, measured through the percentage of females (21 percent) and males (27 percent) with a bank account, is low across West Bank and Gaza. In addition, unemployment rates for women (28 percent) and young women (52 percent) are particularly high.[3] C-GAP II calls for economic empowerment programs promoting control of assets and financial inclusion among women, including access to financial literacy, financial products and capital, and financial skills building for growing businesses. Furthermore, anecdotal evidence collected from female-owned businesses during the pre-appraisal mission, suggests that female business owners have identified access to electricity as one of the key constraints of conducting, sustaining, and increasing their businesses. Studies show that female-owned businesses tend to hire more women than male-owned businesses, yet only 2.5 percent of firms in West Bank and Gaza are female-owned. Therefore, more attention needs to be paid to various constraints that women face, in particular, access to electricity and their ability to adopt solar PV systems.[4]

26. This AF aims to close the gender gap identified under the parent project and supports C-GAP II, notably in terms of: (a) controlling assets by ensuring women's access to solar systems, (b) growing female-led businesses and women's labor force participation by providing them with access to solar energy to increase productivity and reduce electricity cost and thus increase their income, and (c) increasing women's awareness about solar energy use and the productive uses of solar power and

[3] World Bank (2018), Middle East and North Africa Country Gender Scorecards.
[4] World Bank (2013), Enterprise Survey. West Bank and Gaza.

enhancing business skills. The AF will provide solar rooftop systems to female-headed households and women-owned SMEs and promote female entrepreneurship by providing business and marketing skills training (access to finance, formalize the business, marketing and sales, networking and trading, and so on). Furthermore, the project will work with the Gaza Female Engineers' Network to train project beneficiaries in correct use and maintenance of solar equipment. This component has the potential to transform the fragile local economy, increase income and create new job opportunities, which is likely to have other related socioeconomic benefits for a broader group of beneficiaries.

(b) Solar for Hospitals and Medical Clinics

27. This component supports the design and implementation of rooftop solar energy systems in select hospitals and medical clinics, and financing training and capacity building of engineering teams from the hospitals and medical clinics. Gaza Strip has approximately 14 hospitals and 51 clinics that can benefit from solar rooftop solutions. The Energy Sector Progammatic TA is currently financing the assessment for one hospital and five medical clinics. The priority hospitals and health facilities are identified in consultation with PENRA, Ministry of Health, the WHO, and GEDCO. These health facilities are expected to further optimize solar power by replacing the lights and if possible some cooling equipment. The AF will support the following activities:

- A proposed 650 kWp solar PV system in Nasser hospital, which has been identified as a potential first hospital. This system is being supported by WHO (250 kWp) and could include complementary support from the ESPIP for installation of up to 400 kWp system (200 kWp from the ESPIP and 200 kWp from the AF);
- Installation of solar rooftop solutions in up to five health clinics;
- Training and capacity building of engineering teams from the health facilities.

28. **Component 4: Technical Assistance, Capacity Building, and Project Management.** Strengthening the capacity of PENRA to ensure coordination with PETL, PERC and the DISCOs on all equipment and technical assistance to be provided under the Project; provision of technical assistance to PENRA for Project-related activities, including, inter alia, in developing a business model that enables low income and vulnerable households to benefit from the rooftop solar energy program; supporting technical assessments and feasibility studies for a proposed pipeline of projects; and supporting staffing of the Project Management Unit within PENRA for Project implementation, including Training and the provision of Operating Costs.

B. Project Cost and Financing

Table 1. Summary of Project Cost

Project Components	ESPIP	ESPIP AF	Total
1. Strengthening the capacity of Palestinian electricity sector institutions: PETL and PERC	**2.5**	**2.7**	**5.2**
1a PETL	*1.8*	*2.7*	*4.5*
1b PERC	*0.7*	*—*	*0.7*
2. Improving the operational performance of	**5.3**	**5**	**10.3**

Palestinian Electricity Distribution Companies (DISCOs)			
2a: Revenue Protection Program	*3.4*	*2.0*	*5.4*
2b: Management Information Systems	*1.9*	*3.0*	*4.9*
3. Improving energy security in Gaza with solar energy	**2.5**	**3.3**	**5.8**
3a: Revolving Fund for households and SMEs	*2.0*	*1.5*	*3.5*
3b: Solar for Hospitals and medical clinics	*0.5*	*1.8*	*2.3*
4. Technical Assistance, Capacity Building and Project Management	0.7	1.0	1.7
Total Project Costs	**11.0**	**12.0**	**23.0**

C. Lessons Learned and Reflected in the Project Design

29. The AF design incorporates the following key lessons:

(a) **Opportunity for knowledge sharing across Palestinian institutions.** Energy sector institutions in West Bank and Gaza range from highly mature to very new, which creates a unique opportunity for PENRA to facilitate knowledge exchange. For example, Jerusalem DISCO (JDECO) is 100 years old and Tubas DISCO (TEDCO) is less than 5 years old. While they are vastly different in scale, they still belong to the same sector and have valuable knowledge, insights, experience, and resources to share. The RPP and MIS component is being led by a 'community of experts' from each DISCO and could help improve the implementation; enhance the long-term outcome, and sustain the dialogue necessary for continuing improvement.

(b) **Ensuring flexibility and simplicity in design.** Given the complex political and economic environment, it is important to ensure the activities are designed to ensure simplicity and flexibility in implementation and M&E. It is also important to align with counterpart capacity to ensure the project is set up for success. The results framework has been accordingly simplified to focus on critical indicators that would effectively capture progress at multiple levels.

(c) **Need for harmonization of technical standards and processes.** As the total customer base across West Bank and Gaza is relatively small, harmonizing standards and combining procurements could be highly efficient and cost effective. This is being planned for the RPP and MIS.

(d) **Allowing for extra time for completion of activities.** Travel and transportation of materials within West Bank and particularly into Gaza requires extra time and is unpredictable. It is important to allow for extra time for this movement, which can sometimes also be in batches. Intermediate targets are included for each result indicator in the Project Paper, while annual targets will also be tracked through the Project Operations Manual (POM) and the annual workplans.

D. Proposed Changes to ESPIP parent project

30. The ESPIP parent project is proposed to be restructured as follows

(a) Modify the PDO to better align with and reflect the project activities and intended results.

(b) Modify the Results Framework, namely streamlining the outcome indicators for improved monitoring; revise targets to reflect the expanded scope of the interventions; and reduce the number of intermediate outcome indicators.

(c) Distinguish between Component 3(a) revolving fund for households and SMEs and 3(b) solar for health facilities (hospitals and medical clinics).

(d) Clarify the operation and financial management of revolving fund mechanism in Section IV (C) on Financial Management and in the updated POM.

III. KEY RISKS

31. The overall risk rating for the ESPIP with inclusion of the AF remains High.

32. **Political and governance risks remain High.** On the political front, the peace process remains vulnerable, and the domestic political situation remains unsettled. Political instability and the long-lasting Israeli restrictions on movement, access, and trade continue to be major impediments to project implementation, particularly in Gaza. As part of risk mitigation, political and security developments are monitored routinely for the World Bank Group to remain alert to any situation that may require adjustments to its operation. The World Bank Group also partners with local communities, municipalities, NGOs, utilities, and educational institutions, which could provide additional modes of implementation to ensure program and project continuity, should the need arise. Additionally, the World Bank retains a healthy relationship with donor agencies and countries, who continue to play a constructive role in the development process.

33. **Macroeconomic risk remains High.** Political instability, including the 2014 conflict in Gaza and the outbreak of clashes in West Bank, have remarkably increased the level of uncertainty and negatively affected business confidence. Since the beginning of 2018, economic growth has stagnated in West Bank and has seen dramatic contraction in Gaza. The productive capacity of the Palestinian economy has been eroded over the years with a significant decline in the size of manufacturing and agriculture in the economy. Also, the continued restrictions on movement, access, and trade imposed by the GoI present a key binding constraint to private sector investment and economic growth. On the fiscal side, risks relate to the PA's persistently high fiscal deficit financed through donor grants that have been unpredictable and on a declining path since 2008. Also, the possibility of suspensions of revenue transfers for taxes collected by the GoI on behalf of the PA and the latter's lack of control over public finances and economic management in Gaza significantly add to the risks. While the PA has a course toward lesser dependence on external aid and is undertaking the relevant reforms, it will take time for the PA to achieve fiscal sustainability and that too will only be possible if there is a political settlement that allows for strong private sector-led growth. In summary, a further reduction in the overall level of donor assistance or lack of its predictability is a significant source of additional risk to the PA's finances and the Palestinian economy, as a whole, which will be closely monitored.

34. **Sector Strategy and Policies risks remain Substantial** and could affect achievement of the development objectives. PENRA has started the process of extensive energy sector reform measures, combined with a strategy for improving the infrastructure for better financial and operational performance of the sector. This requires PENRA to maintain close coordination with the key sector institutions (PETL, PERC, DISCOs) and continually develop and implement incentive mechanism to ensure progress. The WB is providing additional support through the Energy Sector Progammatic TA to PENRA for continued strategy and policy dialogue.

35. **Fiduciary risks remain High** and could have a negative effect on the achievement of the development objectives. However, close supervision of all procurement and financial management by PENRA PMU as well as preventive actions, for example, technical audits, will reduce the fiduciary risk. In addition, PENRA is also considering strengthening PMU capacity by hiring technical and procurement experts.

36. The Bank's Articles of Agreement provide for the World Bank to ensure that the proceeds of any financing are used only for the purposes for which the financing was granted. As a specialized agency of the United Nations, the Bank pays due regard to decisions of the UN Security Council under Chapter VII of the UN Charter, and it is the Bank's policy not to make payments to persons or entities on the UN sanctions list. The Bank has an established Anti-Money Laundering/Combating the Financing of Terrorists (AML/CFT) and sanctions screening program. All disbursements made directly by the Bank to individual contractors or entities are checked against the Bank's AML/CFT lists, which are updated on a continuous basis. These lists include any contractors or individuals subject to UN sanctions or to suspension or debarment by the Bank (including cross-debarments where the Bank recognizes suspension or debarment by other international financial institutions). Furthermore, in order to disburse funds around the world, the Bank makes regular use of commercial banks and other regulated institutions that are subject to national laws. For this reason, the Bank's AML/CFT program also examines whether transactions will be permitted through its commercial banking partners. The Bank has developed a risk-based approach for escalating cases that may raise concerns about sanctioned parties and the appropriate use of Bank funds, thereby seeking to avoid payment blockages by commercial banks and other financial institutions. Finally, all projects are subject to the Bank's procurement procedures and financial management requirements, including auditing, and pre-defined selection criteria for individual beneficiaries or SMEs.

IV. APPRAISAL SUMMARY

A. Economic and Financial (if applicable) Analysis

37. The economic and financial returns on improving the operational performance of DISCOs and bringing energy security to Gaza are high. The overall project, including the parent and AF funds, excluding capacity-building activities, will invest US$16.1 million into two components: (a) improving the operational performance of DISCOs through an RPP and MIS, and (b) improving energy security in Gaza through solar energy. The project is expected to have an economic return of 60 percent for the RPP and MIS programs and 159 percent for the Gaza solar energy program. There is no financial return calculated for the RPP and MIS component as these are grants to the utilities; however, the financial return for the

Gaza solar program is calculated at 148 percent as the beneficiaries are receiving the solar PV systems as a zero-interest loan that needs to be repaid into the revolving fund.

38. The RPP and MIS programs bring down commercial losses attributable to large and medium customers by the installation of smart meters for the commercial and industrial sectors. Two main types of benefits can be associated with reducing commercial losses. First, revenues from high-value customers will increase. This is primarily a financial benefit for DISCOs. It would generate a welfare gain to the society at large when DISCOs apply the increased revenues to continue investing in improving service quality and expanding electricity access. Second, smart meters influence consumer behavior, resulting in energy savings. With the RPP, consumers become more aware of their consumption, and its cost, they are motivated to use electricity more efficiently resulting in a reduction in generation. The result of economic analysis shows an expected economic internal rate of return (EIRR) of 60 percent at 6 percent discount rate. There is no financial internal rate of return (FIRR) because the program is provided to utilities on a grant basis. Thanks to reduced generation, the project is expected to result in 741,690 tCO2e of avoided GHG emissions. Other customer societal benefits of the RPP are avoided capacity costs, avoided generation capacity costs, enhanced customer service, billing accuracy improvement, informed decision on energy usage, reduced consumption on inactive meters, supply reliability, environmental preservation through reduced peak time usage, increased safety for meter readers and field services personnel, and job boost to the local economy.

39. Sensitivity analysis showed the program to be quite robust. For the RPP and MIS programs, the nontechnical loss reduction could be as small at 0.5 percent (as opposed to the 3–4 percent used in the base case and observed in similar World Bank programs around the world) and the investment would still provide an economic return. In the base case, it was assumed that a US$10.3 million investment would allow the program to reach approximately 50 percent of the customer base. The switching analysis shows that even if only 10 percent of customers are reached through the program, it would still have an economic return.

Table 2. Base Case Economic Analysis

Net Present Value (NPV) (US$, million) at 6% Discount Rate	
Recaptured nontechnical losses resulting in reduced generation: West Bank/Gaza	44 36
Avoided cost of greenhouse gas (GHG) emissions due to reduced generation: West Bank/Gaza	11 7
Total benefits: West Bank and Gaza	94
Capital expenditure (CAPEX)	10
Operational expenditure (OPEX)	2
Total cost	10
Net benefit (US$, millions)	84
EIRR (%)	60

Table 3. Switching Values for Net Benefit and EIRR

Switching Values	Net Benefit (US$, millions)	EIRR (%)
Decrease in nontechnical losses attributed to the	6	12

project' changed from 3% in base case to 0.5%		
High-value customer segment covered changed from 50% in base case to 10%	9	14

40. The economic analysis shows that the proposed solar project component in Gaza is economically viable when GHG global environmental benefits are included. The project's EIRR for a large residential consumer (734 kWh per month consumption) is 159 percent with NPV of US$44,377. The results scale linearly for all customers ranging from small residential customers with consumption as low as 300 kWh per month, to large hospitals with consumption of over 7,000 kWh per month. The economic evaluation of the solar project component takes a conservative approach to the estimation of benefits. In particular, it does not account for a number of benefits that are difficult to quantify, such as energy security and market development. Lessons from the solar pilot project can facilitate further deployment of solar PV and reduce costs. It is hence quite likely that the EIRR of the proposed project would be higher than estimated results of this analysis. The FIRR is calculated at 0 percent because customers repay the cost of the solar system at 0 percent interest rate which is a form of grant subsidy. At 0 percent discount rate, the FIRR is 148 percent with NPV for a large residential customer calculated to be US$99,330. Thanks to offsetting diesel-based power generation with solar power, the project is expected to result in avoided GHG emissions of 121 tCO2e for a typical large residential customer (734KWh/mo). Again, the results scale linearly for smaller and larger customers.

41. Switching analysis shows that the program is sensitive to the cost of solar systems and the cost of fuel for diesel generators. First, in the base case it is assumed that solar systems, including batteries and components, cost on average US$2 per watt. However, if this assumption is changed to US$7 per watt the economic and financial returns quickly drop to zero. Therefore, it is important that this program obtains low prices for solar systems to remain competitive with diesel generators. Second, in the base case it is assumed that the cost of fuel is US$1.6 per liter (average of 2011–16 actual values); however, if the price of fuel drops to below US$0.4 per liter then diesel-based generation remains competitive to solar systems. It should be noted that diesel prices have not dipped below US$0.5 per liter since the year 2000. Finally, some analysis was done on the sensitivity to the frequency of battery replacements. It was found that even if batteries are replaced every year (as opposed to every three years as assumed in the base case), the solar project is still more profitable than diesel-based generation.

Table 4. Results from Base Case for Large Residential Customer

Base Case for a Large Residential Customer (734 kWh per month)	Economic Analysis at 6% Discount Rate		Financial Analysis at 0% Discount Rate	
Scenarios	**NPV Per Customer (US$)**	**EIRR Per Customer (%)**	**NPV Per Customer (US$)**	**FIRR Per Customer (%)**
Base case[a]	44,377	159	99,330	148

Note: a. Assuming: Solar system cost of US$2 per watt, fuel price of US$1.6 per liter, battery systems replaced every 3 years costing 30 percent of original CAPEX price each time.

Table 5. Switching Analysis

Switching Values	Economic Analysis at 6% Discount Rate		Financial Analysis at 0% Discount Rate	
Scenarios	**NPV Per Customer**	**EIRR Per Customer**	**NPV Per Customer**	**FIRR Per Customer**

	(US$)	(%)	(US$)	(%)
'Solar system cost' changed from US$2 per watt in base case to US$7 per watt	2,604	0	21,830	−2
'Cost of fuel' changed from US$1.6 per liter in base case to US$0.4 per liter	1,233	1	2,156	−10
'Frequency of solar battery replacements' changed from every 3 years in base case to every year	24,535	81	54,330	73

B. Technical

42. The AF will further strengthen the ongoing capacity building measures of the institutions involved in the Palestinian energy supply chain covering generation, distribution, transmission, and regulation. As described in the previous sections, the scaled-up components of the project will continue to target the primary beneficiaries of the ESPIP. The AF will provide additional contribution to the RPP and allow the scope to be enhanced toward installing AMI, including smart meters, accompanying software, and control center, for all DISCOs, by expanding the scope to include GEDCO and will further enable alignment of technical standards across all DISCOs. Similarly, the MIS would also be expanded under the AF to ensure operationalization of the full MIS, set of four subsystems, in DISCOs across West Bank and Gaza. This scale-up will contribute to development of capacity of PENRA, PETL, PERC, and DISCOs. This will also increase interest of vendors and consultants in the local market and help deepen existing knowledge of local companies.

43. The scope of Gaza rooftop solar revolving fund will be expanded to provide the appropriately, larger-size solar kits to target customers, households, and SMEs in Gaza. As described in the previous section, a key lesson learned during the design period was that the solar kits need to be right-sized to ensure their correct utilization and to attract target beneficiaries to ensure sustainability of the revolving fund mechanism. This has modified the original ESPIP funding allocation as the revolving fund will no longer offer 1 kWp system, instead focusing on 2 kWp, 3 kWp, and 5 kWp for households and 5 kWp and larger systems for SMEs. The AF will also finance the design and installation of solar rooftop solutions for hospitals and clinics. The scale-up will contribute to increased capacity in Gaza to design customized solar solutions for SMEs and hospitals; increased interest of vendors, suppliers, and others in the rooftop solar market in Gaza, besides availability of increased electricity supply to the customers.

C. Financial Management

44. The Financial Management Assessment for PENRA, which was carried out during the ongoing Gaza Electricity Network Rehabilitation Project (GENRP) and updated for ESPIP will be adequate for ESPIP AF. The assessment evaluated the institutional capacity of the PMU to implement the Financial Management (FM) and disbursement arrangements under Bank Guidelines. There is no change in disbursement

arrangement. The PMU will have the overall responsibility for the financial management and disbursement of the grant funds. The PMU has in place an adequate computerized financial system and employs qualified financial staff. It also has a satisfactory track record with the Bank and other donor funded projects. The PMU will open two new U.S dollar Designated Accounts (DA) for the AF, one for each financing source (PID-MDTF and TFGWB). Strong governance arrangements at PENRA will continue to be maintained so that the revolving fund continues to operate properly throughout implementation. The PMU will ensure that the necessary authority exists for the funds and that the MoFP is made aware of all funds established. Revolving funds will follow the MoFP financial policies and guidelines. To ensure sound financial management, a comprehensive financial policies and procedures manual for the revolving funds was prepared as part of the Project Operations Manual (preparation of an acceptable POM was a condition for project effectiveness of the parent project).

45. The revolving fund will be accounted for as a separate accounting entity. The accounts should be kept on an accrual basis so that expenditures can be related to revenues and assets made subject to quality accounting control. There is a dedicated account separate from other project activities managed by PENRA where repayments on customer loans will be paid, out of which, future loans for new customers will be financed. The World Bank will not directly finance the revolving fund but will pay the suppliers for equipment. An automated accounting system is used by PENRA. The system captures all project-related transactions and has the flexibility to permit the establishment of separate cost centers to track and report upon the use of project funds. Also, the system is capable of accounting for the revolving fund separately. Each loan payable to customers will be matched with a related repayment. PENRA will continue to use the accounting guidelines that will be set in the comprehensive financial policies and procedures during and after project implementation. An external auditor was hired to audit the financial statements (including the revolving fund financial statements) of the project. In addition to the financial audit, the terms of references will be expanded to include a provision on technical audit in accordance with International Standards on Auditing. The cost of the audit will be financed from grant proceeds. According to the World Bank Policy on Access to Information issued on July 1, 2010, the audit report with audited financial statements of the project will be made available to the public. The overall financial management risk for this grant is assessed as 'High' mainly because of the risks associated with operating the revolving fund.

D. Procurement

46. The AF will follow the same procurement arrangements in place for the ESPIP. Procurement for the AF will be carried out in accordance with the World Bank Procurement Regulations for Borrowers under Investment Project Financing dated July 1, 2016, revised November 1, 2017 and August 1, 2018. Furthermore, the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants,' dated October 15, 2006, and revised in January 2011 and as of July 1, 2016, shall apply to the AF. The Procurement Plan and Project Procurement Strategy for Development has been approved by the World Bank on November 19, 2018. PENRA, through the PMU, will continue to hold the overall responsibility for project procurement and will act as the World Bank's counterpart on procurement. ESPIP procurement performance has been rated 'Moderately Satisfactory' given the delay in launching the procurement process of key packages. It is important to note that due to the complex nature of the components, it was agreed to recruit expert consultants to work with PERNA, PERC, and all DISCOs as part of Energy Sector Programmatic TA. This complementary TA has resulted in preparation of detailed assessments and draft technical specifications for most of the components. These

are being reviewed and finalized by PENRA in close cooperation with DISCOs and tendering is expected to follow. The PMU procurement capacity will be further strengthened through hiring an additional qualified procurement specialist and other technical experts (for example, MIS expert) to handle the additional procurement workload. The AF will finance similar procurement packages of goods, consulting services, and MIS to those being prepared under the ESPIP.

E. Monitoring and Evaluation

47. The project will use the indicators and mechanisms defined in the Results Framework. Overall responsibility for M&E lies with the PMU director, with the support of PENRA's Chairman, who will be responsible for data collection on the indicators to be reported to the World Bank on a biannual basis or during the supervision mission. The PMU will also conduct, jointly with the World Bank, a midterm review as well as prepare their own Implementation Completion and Results Report at project closure. The Project Operations Manual will be revised to include the adjusted Results Framework and will further describe M&E responsibilities, data collection requirements and frequency.

F. Social (including Safeguards)

48. The AF does not trigger the World Bank Policy OP 4.12 (Involuntary Resettlement). Similar to the original project, the AF does not involve any civil works. Under Component 3, 'Improving energy security in Gaza with solar energy,' the installations will be provided on the rooftops of existing buildings occupied by the beneficiary households and SMEs Therefore, the project remains as Category B and the ESMF, which was already prepared, will suffice. The PMU environmental officers will screen all the subprojects for social and environmental compliance.

G. Environment (including Safeguards)

49. Project financing will include interventions for installation of rooftop PV solar modules in Gaza, smart meters, equipment for operation of substations, and other meters installed on the networks for DISCOs in West Bank. The environmental impacts of those interventions are limited, localized, and easily mitigated during construction and operation, including noise, dust, interruption of services, occupational health and safety risks, and battery waste disposal. The project triggers OP 4.01 (Environmental Assessment) and the project is classified as Category B (partial assessment). Because the exact locations of subprojects will be fully determined during project implementation, an ESMF was prepared and consulted by the client in 2017, approved by the World Bank, and disclosed on PENRA website. The ESMF has been re-disclosed on PENRA website (link: http://penra.pna.ps/ar/index.php?p=penra11) on November 25, 2018. It includes proposed measures to mitigate for the potential risks, screening methodology for subprojects against safeguards policies, a monitoring plan and implementation arrangements of the ESMF. By virtue of the ESMF, site-specific ESMPs will be prepared for locations of subprojects, for example, the rooftop solar PV systems for Nasser Hospital in Gaza City and other selected clinics and SMEs in the Gaza Strip.

H. Citizen Engagement

50. The AF will follow the same arrangements in place for the ESPIP to seek citizen engagement and beneficiary feedback in its implementation. The existing Grievance Redress Mechanism (GRM) system

used for West Bank and Gaza ESPIP (P148600) has been following the same procedures that, in collaboration with GEDCO, PENRA has established for the Gaza Electricity Network Rehabilitation Project (P116199) through assigning a staff member at GEDCO offices to receive complaints throughout the implementation period of the project. To strengthen the GRM system currently used by the main project and to inform the GRM system for the AF the World Bank conducted an assessment of the existing GRM system. Therefore, a detailed GRM manual procedure has been prepared.

51. The GRM will allow beneficiaries and citizens to seek information, submit inquiries or file complaints. Individuals (including SMEs) and households will have been informed of the process for expressing dissatisfaction and channels to seek redress through awareness campaign and through bills. The manual will include workflow specifying steps and procedures for handling the complaints. The system will focus on adequate recording, with a reference number and tracking of timely responses, including a log of all complaints received, the date received, the date responded to, type of response, and the documentation of complaints. A Grievance Monitoring Report will be prepared on a quarterly basis to keep track of all grievances developed. A copy of the report will be submitted to PENRA.

52. In addition to the GRM, the project will conduct two beneficiary satisfaction surveys. Owing to the fragile context in Gaza, which makes traditional survey work expensive and challenging, the project will explore innovative options to source information from project beneficiaries, such as developing and using crowdsourcing mobile apps where beneficiaries submit their data through the Internet, social media, and smartphone apps. The results of the surveys and feedback provided from beneficiaries will inform adjustments in project design, if need be. The survey results will be published on PENRA's website. Outreach to female beneficiaries will be tailored and ensured through existing women's networks on Facebook, WhatsApp, and SMS.

V. WORLD BANK GRIEVANCE REDRESS

53. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit *www.inspectionpanel.org*

VI. SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Project's Development Objectives	✓	
Results Framework	✓	
Components and Cost	✓	
Implementing Agency		✓
Loan Closing Date(s)		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Implementation Schedule		✓
Other Change(s)		✓

VII. DETAILED CHANGE(S)

PROJECT DEVELOPMENT OBJECTIVE

Current PDO

The Project Development Objective is to enhance institutional capacity of the energy sector, improve efficiency of the distribution system in targeted areas, and pilot a new business model for solar energy service delivery in Gaza.

Proposed New PDO

The Project Development Objective is to improve operational performance of electricity sector institutions, and pilot a new business model for solar energy in Gaza.

COMPONENTS

Current Component Name	Current Cost (US$, millions)	Action	Proposed Component Name	Proposed Cost (US$, millions)
Component 1 - Strengthening the Capacity of Palestinian Electricity Sector Institutions, PETL and PERC	2.50	Revised	Component 1 - Strengthening the Capacity of Palestinian Electricity Sector Institutions, PETL and PERC	5.20
Component 2 - Improving the operational performance of Palestinian electricity Distribution Companies (DISCOs)	5.30	Revised	Component 2 - Improving the operational performance of Palestinian electricity Distribution Companies (DISCOs)	10.30
Component 3 - Improving Energy Security in Gaza with Solar Energy	2.50	Revised	Component 3 - Improving Energy Security in Gaza with Solar Energy	5.80
Component 4 - Technical Assistance, Capacity Building, and Project Management	0.70	Revised	Component 4 - Technical Assistance, Capacity Building, and Project Management	1.70
TOTAL	**11.00**			**23.00**

Expected Disbursements (in US$)

Fiscal Year	Annual	Cumulative
2018	2,800,000.00	2,800,000.00
2019	6,000,000.00	8,800,000.00
2020	5,200,000.00	14,000,000.00
2021	5,000,000.00	19,000,000.00

2022	4,000,000.00	23,000,000.00
2023	0.00	23,000,000.00

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	High	High
Macroeconomic	High	High
Sector Strategies and Policies	Substantial	Substantial
Technical Design of Project or Program	Moderate	Moderate
Institutional Capacity for Implementation and Sustainability	Moderate	Moderate
Fiduciary	High	High
Environment and Social	Moderate	Moderate
Stakeholders	Moderate	Moderate
Other		
Overall	High	High

LEGAL COVENANTS – Electricity Sector Performance Improvement Project - Additional Finance (P167914)

Sections and Description
No information available

Conditions

VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: West Bank and Gaza

Electricity Sector Performance Improvement Project - Additional Finance

Project Development Objective(s)

The Project Development Objective is to improve operational performance of electricity sector institutions, and pilot a new business model for solar energy in Gaza.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Improve operational performance of Electricity Sector Institutions *(Action: This Objective is New)*				
PETL collection rate (Percentage)		0.00	50.00	90.00
Action: This indicator has been Revised				
Electricity losses per year in West Bank DISCOs (Percentage)		23.00	22.00	19.00
Action: This indicator has been Revised				
Pilot a new business model for solar energy in Gaza. *(Action: This Objective is New)*				
People provided with new or improved electricity service (CRI, Number)		0.00		9,300.00

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Action: This indicator has been Marked for Deletion				
People provided with new or improved electricity service - Female (CRI, Number)		0.00		2,000.00
Action: This indicator has been Marked for Deletion				
Lessons learned report (Number)		0.00	1.00	2.00
Action: This indicator is New				
Total installed rooftop solar PV systems (Number)		0.00	100.00	800.00
Action: This indicator is New				
Installed solar PV systems for SMEs (Number)		0.00	150.00	250.00
Action: This indicator is New				
Installed solar PV systems in female-headed households and SMEs (Number)		0.00	50.00	100.00
Action: This indicator is New				

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Component 1: Strengthening the Capacity of Palestinian Electricity Sector Institutions *(Action: This Component is New)*				
Number of electricity connection points metered by PETL (Number)		0.00	50.00	80.00
Action: This indicator has been Revised				
No. of audits completed by PERC (Number)		0.00	0.00	2.00
Action: This indicator has been Revised				
Component 2: Improving the Operational Performance of Palestinian DISCOs *(Action: This Component is New)*				
JDECO's Electricity losses per year (Percentage)		24.00		20.00
Action: This indicator has been Marked for Deletion				
JDECO electricity losses per year without refugee camps (Percentage)		18.00		13.00
Action: This indicator has been Marked for Deletion				
HEPCO's Electricity losses per year (Percentage)		20.00		18.00
Action: This indicator has been Marked for Deletion				
SELCO's Electricity losses per year (Percentage)		25.00		20.00
Action: This indicator has been Marked for Deletion				

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
NEDCO's Electricity losses per year (Percentage)		20.00		16.00
Action: This indicator has been Marked for Deletion				
TEDCO's electricity losses per year (Percentage)		22.00		17.00
Action: This indicator has been Marked for Deletion				
Number of smart meters installed (Number)		0.00	6,000.00	13,500.00
Action: This indicator has been Revised				
Number of DISCOs with fully operational Management Information Systems (Number)		0.00	2.00	6.00
Action: This indicator has been Revised				
Component 3: Improving Energy Security in Gaza with Solar Energy *(Action: This Component is New)*				
Installed solar PV systems (Number)		0.00		800.00
Action: This indicator has been Marked for Deletion				
Installed solar PV systems for SMEs (Number)		0.00		250.00
Action: This indicator has been Marked for Deletion				
Installed solar PV systems in female-headed households and SMEs (Number)		0.00		100.00
Action: This indicator has been Marked for Deletion				

Indicator Name	DLI	Baseline	Intermediate Targets	End Target
			1	
Rate of response to grievances received related to the project (Percentage)		0.00		100.00
Action: This indicator has been Revised				
Installed solar PV systems in health facilities (Number)		0.00	2.00	4.00
Action: This indicator is New				

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
PETL collection rate	Collection rate is defined as the Total collected revenue against the Total billed revenue by PETL. PETL is a new institution, which only started supplying electricity in October 2017 so the baseline is 0.	Bi-Annually	PENRA implementation report	Data from PETL billing system	PENRA/PMU
Electricity losses per year in West Bank DISCOs	Electricity losses represent the average total losses of JDECO, HEPCO, SELCO, NEDCO and TEDCO, the DISCOs in West Bank that are supported from the Component 2. Gaza DISCO	Bi-annually	PENRA implementation report		PENRA PMU

	is not included due to the ongoing issues, it is measured separately. This indicator is calculated as the percentage of Total billed amount of energy/Total purchased amount of energy.				
People provided with new or improved electricity service		PENRA/PMU	PENRA implementation report		Bi-annually
People provided with new or improved electricity service - Female		PENRA/PMU	PENRA implementation report		Bi-annually
Lessons learned report	This is a review of the Gaza rooftop solar project that will be conduct every 2 years and is expected to capture lessons learned during implementation. The report will capture feedback from customers, Banks, suppliers regarding technical, financial and other issues; document any resulting design changes and capture insights from implementation of the project.	Q1 2020 and Q1 2022	PENRA PMU	Customer surveys, interviews, reports	PENRA PMU
Total installed rooftop solar PV systems	Total rooftop solar PV systems installed for households and SMEs	Bi-annual	PENRA implementation report	Installation report from PENRA and GEDCO	PENRA PMU

Installed solar PV systems for SMEs	Solar PV systems installed in SMEs	Bi-annually	PENRA implementation report		PENRA PMU
Installed solar PV systems in female-headed households and SMEs	rooftop solar systems installed in households	Bi-annually	PENRA implementation report		PENRA PMU

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Number of electricity connection points metered by PETL	The number of electricity connection points metered by PETL. This refers to the priority connection points as per the PETL-IEC long-term PPA.	Bi-annually	PENRA implementation report	Report from PETL	PENRA PMU
No. of audits completed by PERC	PERC audits the reports from two DISCOs in order to verify that data transmitted to the regulator is sound and of high quality. This indicator will be achieved after the MIS systems are implemented.	annual	PENRA Implementation report		PENRA PMU

JDECO's Electricity losses per year	This indicator is calculated as JDECOâ s percentage of Total billed amount of energy/Total purchased amount of energy.	PENRA/PMU	PENRA implementation report		Bi-annually
JDECO electricity losses per year without refugee camps	This indicator is calculated as JDECOâ s total network losses in all its concessionary area except its refugee camps.	PENRA/PMU	PENRA implementation report		Bi-annually
HEPCO's Electricity losses per year	This indicator is calculated as HEPCOâ s percentage of Total billed amount of energy/Total purchased amount of energy	PENRA/PMY	PENRA implementation report		Bi-annually
SELCO's Electricity losses per year	This indicator is calculated as SELCOâ s percentage of Total billed amount of energy/Total purchased amount of energy	PENRA/PMU	PENRA Implementation report		Bi-annually
NEDCO's Electricity losses per year	This indicator is calculated as NEDCOâ s percentage of Total billed amount of energy/Total purchased amount of energy	PENRA/PMU	PENRA implementation report		Bi-annually
TEDCO's electricity losses per year		PENRA/PMU	PENRA implementation report		Biannually
Number of smart meters installed	Total number of smart meters installed, which are financed under the Revenue Protection	Bi-annual	PENRA implementation report	Report from PENRA	PENRA PMU

	Program for the DISCOs in West Bank & Gaza				
Number of DISCOs with fully operational Management Information Systems	The MIS includes 4 sub-systems (ERP, CMS, IMS and BI) and required sub-systems will be deployed at each of the 6 DISCOs based on the needs assessment so each DISCO has a fully functioning MIS.	Bi-annually	PENRA implementation report	Reports from DISCOs and PENRA	PENRA PMU
Installed solar PV systems	Total number of solar PV systems installed in Gaza under component 3	PENRA/PMU	PENRA implementation report		Bi-annually
Installed solar PV systems for SMEs	Number of solar PV systems installed in SMEs. Income generating activities is defined as â agricultural, commercial and industrial activities involving electricity services as a direct input to the production of goods or provision of servicesâ .	PENRA/PMU	PENRA implementation report		Bi-annually
Installed solar PV systems in female-headed households and SMEs	Self-explanatory	PENRA/PMU	PENRA implementation report		Bi-annually
Rate of response to grievances received related to the project	Rate of response = [(Number of grievances responded / Number of grievances received)*100]. This is the responsibility of	Bi-annually	PENRA implementation report		PENRA PMU

	the relevant department(s) in PENRA & GEDCO based on the established GRM				
Installed solar PV systems in health facilities	The number of rooftop solar PV systems installed in select hospitals and medical clinics in Gaza strip.	Bi-annual	PENRA implementation report	Report from PENRA & GEDCO	PENRA PMU