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IDA/R2019-0305/2

November 13, 2019

FROM: Vice President and Corporate Secretary

Afghanistan - Afghanistan Gas Project (AGASP)

Extension of Closing Date

At the request of Mr. Zattler, the closing date for the proposed grant to Afghanistan for the Afghanistan Gas Project (AGASP) (IDA/R2019-0305) that was distributed for consideration on an absence-of-objection basis with a closing date of November 19, 2019, is being extended to **Tuesday, November 26, 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/R2019-0305/1

October 31, 2019

Closing Date: Tuesday, November 19, 2019 at 6:00 p.m.

FROM: Acting Vice President and Corporate Secretary

Afghanistan – Afghanistan Gas Project (AGASP)

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed grant to Afghanistan for the Afghanistan Gas Project (AGASP) (IDA/R2019-0305), which is being processed on an absence-of-objection basis.

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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Report No: PCBASIC0201267

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED GRANT

IN THE AMOUNT OF SDR 38.60 MILLION
(US$52.50 MILLION EQUIVALENT)

TO THE

ISLAMIC REPUBLIC OF AFGHANISTAN

FOR AN

AFGHANISTAN GAS PROJECT (AGASP)

October 29, 2019

Energy and Extractives Global Practice
South Asia Region

CURRENCY EQUIVALENTS
(Exchange Rate Effective October 7, 2019)

Currency Unit =	Afghani (AFN)
US$ 1 =	AFN 78.25
US$1 =	SDR 0.7335

FISCAL YEAR
December 21 – December 20

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AE4D	Afghanistan Extractives for Development
AEITI	Afghanistan Extractive Industries Transparency Initiative
AFMIS	Afghanistan Financial Management Information System
AGASP	Afghanistan Gas Project
AGE	Afghan Gas Enterprise
AOGRA	Afghanistan Oil and Gas Regulatory Authority
ARTF	Afghanistan Reconstruction Trust Fund
Bcf	Billion Cubic Feet
BRT	Business Receipts Tax
CPF	Country Partnership Framework
CSO	Civil Society Organization
DA	Designated Account
DAB	Da Afghanistan Bank
DABS	*Da Afghanistan Breshna Sherkat*
DM	Deputy Minister
E&P	Exploration and Production
E&S	Environmental and Social
EIRR	Economic Internal Rate of Return
EITI	Extractive Industries Transparency Initiative
EPC	Engineering, Procurement, and Construction
EPSA	Ex-post Social Audit
ESA	Environmental and Social Audit
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FM	Financial Management
FMM	Financial Management Manual
GBV	Gender-based Violence
GIZ	German Agency for International Cooperation (*Deutsche Gesellschaft fur Internationale Zusammenarbeit*)

GoA	Government of Afghanistan
GRM	Grievance Redress Mechanism
GSA	Gas Supply Agreement
HEC	High Economic Council
HEIS	Hands-on Expanded Implementation Support
HSE	Health, Safety, and Environment
IFC	International Finance Corporation
INT	Integrity Vice Presidency
INTOSAI	International Organization of Supreme Audit Institutions
IOC	Incremental Operating Cost
IPP	Independent Power Producer
IPSAS	International Public Sector Accounting Standards
ISM	Implementation Support Mission
IUFR	Interim Unaudited Financial Report
LMP	Labor Management Procedure
M&E	Monitoring and Evaluation
MAOP	Maximum Allowable Operating Pressure
MCM	Million Cubic Meters
MEW	Ministry of Energy and Water
MFD	Maximizing Finance for Development
MIGA	Multilateral Investment Guarantee Agency
MoF	Ministry of Finance
MoIC	Ministry of Information and Culture
MoLSAD	Ministry of Labor, Social Affairs, Martyrs, and Disabled
MoMP	Ministry of Mines and Petroleum
MoU	Memorandum of Understanding
MSCMD	Thousand Standard Cubic Meters Per Day
MSG	Multistakeholder Group
NEPA	National Environmental Protection Agency
NFPP	Northern Fertilizer and Power Plant
NPA	National Procurement Authority
NPV	Net Present Value
O&M	Operation and Maintenance
OHS	Occupational Health and Safety
PAD	Project Appraisal Document
PD	Procurement Directorate
PDO	Project Development Objective
PFM	Public Financial Management
PFEML	Public Finance and Expenditure Management Law
PIT	Project Implementation Team
PMSF	Project Management Support Firm
PMU	Project Management Unit
PPA	Power Purchase Agreement
PPG	Project Preparation Grant
PPSD	Project Procurement Strategy for Development
PRAMS	Procurement Risk Assessment and Management System

PSA	Production Sharing Agreement
QA	Quality Assurance
QC	Quality Control
RAP	Resettlement Action Plan
RF	Resettlement Framework
RP	Resettlement Plan
RPF	Resettlement Policy Framework
SAO	Supreme Audit Office
SCADA	Supervisory Control and Data Acquisition
SDNRP1	First Sustainable Development of Natural Resources Project
SDNRP2	Second Sustainable Development of Natural Resources Project
SE	Supervision Engineer
SEP	Stakeholder Engagement Plan
SMPL	Sheberghan-Mazar Pipeline
SOE	State-owned Enterprise
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
TAGHIR	Tackling Afghanistan's Government HRM and Institutional Reforms
TFBSO	Task Force for Business and Stability Operations
TOR	Terms of Reference
TPM	Third-party Monitoring
TTL	Task Team Leader
UNAMA	United Nations Assistance Mission in Afghanistan
UNDB	United Nations Development Business
USAID	United States Agency for International Development
VAT	Value Added Tax

Regional Vice President: Hartwig Schafer

Country Director: Henry G. R. Kerali

Regional Director: Riccardo Puliti

Practice Manager: Christopher Gilbert Sheldon

Task Team Leader(s): Michael C. Stanley, Noora Arfaa

TABLE OF CONTENTS

DATASHEET

BASIC INFORMATION

Country(ies)	Project Name
Afghanistan	Afghanistan Gas Project (AGASP)

Project ID	Financing Instrument	Environmental and Social Risk Classification
P172109	Investment Project Financing	Substantial

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)	

Expected Approval Date	Expected Closing Date
19-Nov-2019	31-Oct-2024

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The PDO is to facilitate a sustainable supply of gas through targeted investments in gas infrastructure and enhanced gas sector governance .

Components

Component Name	Cost (US$, millions)
Component A: Sustaining Gas Supply	35,200,000.00
Component B: Strengthening Gas Sector Governance	13,300,000.00
Component C: Project Management	4,000,000.00

Organizations

Borrower:	Islamic Republic of Afghanistan
Implementing Agency:	Ministry of Mines and Petroluem

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	52.50
Total Financing	52.50
of which IBRD/IDA	52.50
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	52.50
IDA Grant	52.50

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Afghanistan	0.00	52.50	0.00	52.50
National PBA	0.00	52.50	0.00	52.50

Total	**0.00**	**52.50**	**0.00**	**52.50**

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

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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

10. Overall	● High

COMPLIANCE

Policy

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

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description
No later than one (1) month after the Effective Date: The Recipient shall ensure that the Project Management Team shall include the following staff: (A) one (1) Project coordinator; (B) one (1) dedicated financial management specialist; (C) one (1) dedicated procurement specialist; (D) one (1) environmental specialist; and (E) one (1) social specialist. (Schedule 2, Section I.A.1(b)(ii) of the FA)

Sections and Description
No later than three (3) months after the Effective Date: MoMP shall recruit an expert in national internal audit, on the basis of terms of reference, qualifications and experience satisfactory to the Association to, among other things, assist in building the capacity of MoMP's internal audit department. (Schedule 2, Section I.A.1(c) of the FA)

Sections and Description
No later than eight (8) months after the Effective Date: MoMP shall recruit a management firm, with terms of reference, qualifications and experience satisfactory to the Association to, among other things, build the capacity of the staff of the Project Management Team and MoMP and provide support for the management of the Project (including on fiduciary aspects). (Schedule 2, Section I.A.1(d) of the FA)

Sections and Description
No later than one (1) month after the Effective Date (and prior to implementing any Project activities within AGE or AOGRA -as the case may be), MoMP shall enter into a memorandum of understanding (MoU) with AGE and a MoU with AOGRA, or a MoU with AGE and AOGRA, to among other things, (A) record the scope and modalities of cooperation between AGE or AOGRA, as the case may be, and MoMP and (B) further define the implementation arrangements, including the procurement of assets on behalf of a beneficiary and their ownership, the responsibility to supervise delivery of services by consultants, and the recording of the Recipient's investment in AGE and AOGRA under the Project. (Schedule 2, Section I.A.1(e) of the FA)

Sections and Description
No later than one (1) month after the Effective Date: the Recipient (through the MoMP) shall adopt one or more manuals for the implementation of the Project. (Schedule 2, Section I.E.1 of the FA)

Sections and Description
No later than one (1) month after the Effective Date or such other date which the Association has confirmed in writing is acceptable to the Association: the Recipient shall contract the services of a supervision engineer selected on the basis of terms of reference, qualifications and experience satisfactory to the Association to, support MoMP and AGE for activities related to the construction of the Sheberghan - Mazar-e-Sharif Pipeline and operation and maintenance of the pipeline and key facilities. (Schedule 2, Section I.A.3 of the FA)

Sections and Description
The Recipient shall ensure that the Project is carried out in accordance with the Environmental and Social Standards and the ESCP, in a manner acceptable to the Association, including with respect to the preparation, consultation, disclosure and implementation ofthe ESIA, RP and ESMP related to Sheberghan - Mazar-e-Sharif Pipeline and new desulfurization amine plant, to environmental and social reporting and notifications and to the maintenance and

publicization of the Project's grievance redress mechanism. (Schedule 2, Section I.C of the FA)

Conditions

Type	Description
Disbursement	Conditions of disbursement of the funds allocated to Category 1(b) (works and goods for the construction of the pipeline: (i) each of the pre-construction survey, the detailed inventory of existing equipment and pipe and additional equipment and pipe required forthe completion of the construction of the Sheberghan - Mazar-e-Sharif Pipeline, the engineering survey and the detailed design for the construction of the Sheberghan - Mazar-e-Sharif Pipeline prepared by the Supervision Engineer is available in scope and level of details acceptable to the Association; and (ii) the Recipient at that time is not in default of its obligations under the ESCP which are related to the construction of the Sheberghan - Mazar-e-Sharif Pipeline.

I. STRATEGIC CONTEXT

A. Country Context

1. Substantial improvements in development outcomes have been observed in Afghanistan since 2001, particularly in expanded access to water and sanitation, electricity, education, and health services. Macroeconomic management remains strong, government revenues have grown rapidly since 2014, and the government has engaged in an impressive range of business environment and public financial management (PFM) reforms.

2. However, some gains are now eroding, and risks are rapidly rising. Economic growth has slowed substantially with a significant reduction in international troop numbers and increased insecurity since 2014. Civilian casualties remain at unprecedented levels: 10,459 killed or wounded in 2017 and 10,993 in 2018. While the United Nations Assistance Mission in Afghanistan (UNAMA) reported a 27 percent decrease in casualties in the first half of 2019 compared to the same period in 2018, violence has increased afterward, especially in August and September. Various efforts toward a political settlement with the Taliban have been ongoing throughout 2019, but the probability of significant improvements in the security situation in the short run seems low.

3. Afghanistan faced severe economic headwinds in 2018, with the economy growing by an estimated 1.8 percent. Two main factors drove the slow growth. First, severe drought had a strong negative impact on agricultural production. Second, business and investor confidence deteriorated significantly in the context of elevated uncertainty around (a) the level and duration of international security assistance, (b) prospects of continued or worsening election-related violence (civilian deaths reached their highest level since 2001), and (c) prospects of a peace settlement.

4. Real gross domestic product growth is expected to have accelerated to 2.5 percent during the first half of 2019, mainly driven by the easing of drought conditions and improved agricultural production. Growth is expected to accelerate further through 2021, assuming a smooth political transition after the 2019 elections. With the population growing at 2.7 percent, however, the projected growth path will not be strong enough to improve incomes and livelihoods for most Afghans.

5. The poverty rate in Afghanistan has increased markedly from 38 percent in 2011/12 to 55 percent in 2016/17. It is estimated to have grown and deepened since then. The drought negatively affected the livelihoods of many of the 82 percent of the poor living in rural areas. Drought-induced displacement reached record levels of 298,582 individuals, mainly to urban areas in adjacent provinces. Poverty is expected to remain high in the medium term, driven by weak labor demand (despite an increasing labor force) and security-related constraints on service delivery.

6. For the longer term, growth prospects are predicated on improvements in security, steady progress with reforms, and sustained aid. Growth could also be enhanced by mobilizing investment in extractives, energy, and connectivity; building and harnessing the skills of Afghanistan’s youth and women; and taking steps to realize the job creation potential of agriculture and agribusinesses.

B. Sectoral and Institutional Context

7. Reforms and investments in the extractives and energy sectors are key for Afghanistan to achieve its full growth potential**.** Reforms are required immediately to both improve general investment confidence and mobilize existing economic potential. Aside from agriculture, extractives and energy are the only areas that harbor significant economic development potential for Afghanistan.[1]

8. Access to grid-based electricity has steadily increased since 2004 but remains low overall. Reliant on imported electricity, the failure of the transmission lines between Uzbekistan, Tajikistan, and Afghanistan in February 2016, which would have normally provided 81 percent of Afghanistan's electricity that year, illustrates the fragility of the system and the need for diversifying power supply. Similar failures took place in early 2018 and imports still constitute 75 percent of energy supply. In 2006, the U.S. Geological Survey (USGS) and the Ministry of Mines and Petroleum (MoMP) assessed the undiscovered conventional, technically recoverable natural gas resources of northern Afghanistan at a substantial 15.7 trillion cubic feet (TCF).

9. Accelerated development of gas and downstream power sectors is needed for the following reasons: (a) diversifying sources of electricity supply will provide more Afghans with access to the electric grid, which will enable them to lift themselves out of poverty by allowing them to engage in more productive uses; (b) diversifying electricity sources will also provide for more stable supply for those who already have access to the electric grid; and (c) increasing the supply of gas-fired power will help technically stabilize the electricity grid as the Government is advancing a 2,000 MW solar energy program (compared to 522 MW domestic power currently installed) as part of a wider green growth agenda.[2]

10. It is well recognized that gas power plants by independent power producers (IPPs) with medium- to long-term power purchase agreements (PPAs) can serve as an anchor for gas sector development. IPPs also serve as an effective on-the-job capacity-building opportunity in support of the expansion of gas-based power generation. However, Afghanistan has yet to demonstrate a fully integrated 'proof of concept' investment to develop and deliver natural gas. Against this background, the Government of Afghanistan (GoA) has requested the World Bank Group's (WBG) support on a dedicated gas-to-power development program, which includes three interrelated initiatives (see paragraph 11) aimed at jump-starting the extractives sector through a combined push-pull strategy.

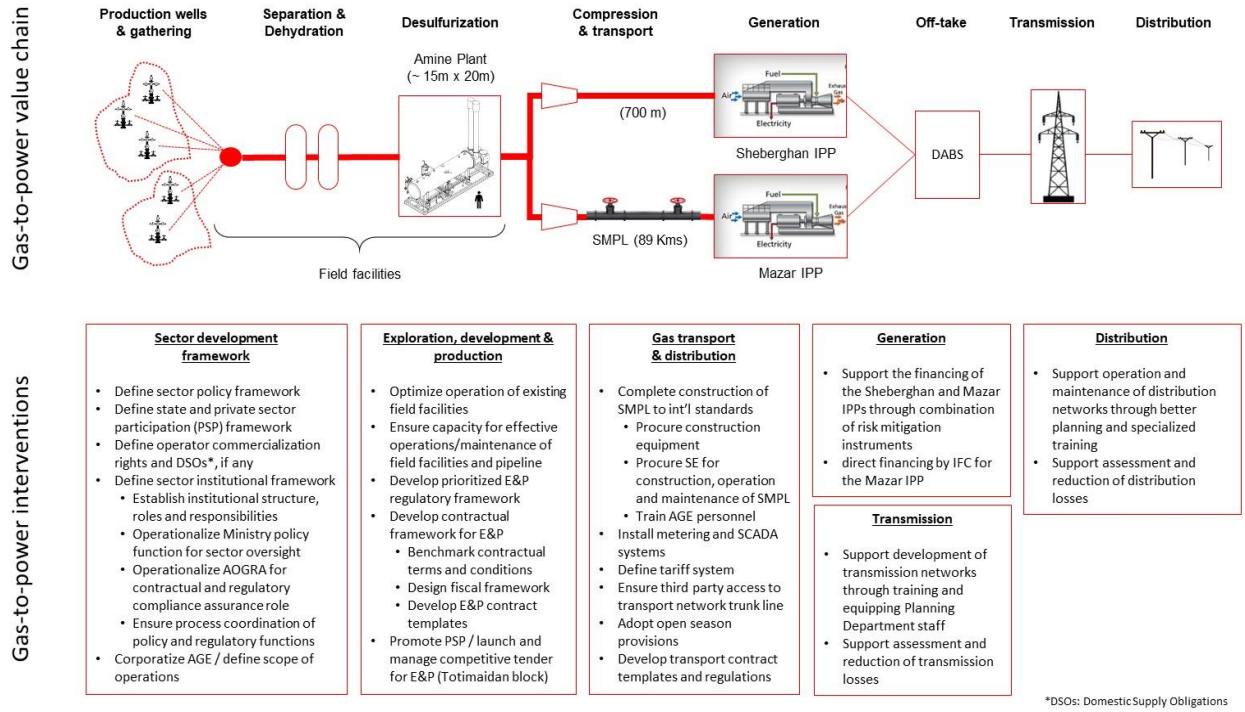
11. The 'push' for the development of the gas sector is provided for by a targeted project helping develop specific gas supply infrastructure and improve the governance of the gas sector: the proposed Afghanistan Gas Project (AGASP, P172109) is a US$52.50 million IDA grant to the GoA. The A-GASP ensures that enough gas can be supplied for the current consumers, such as Fertilizer Plant that is currently one of the biggest consumers, as well as future consumers, in particular for power generation purposes. The 'pull' is being provided by two small-size gas-fired power plants which will create the cornerstone market for gas: (a) a 40 MW gas-fired IPP at Sheberghan to operate in the short term and sited near the existing

[1] World Bank Group. Afghanistan Development Update. Building Confidence Amid Uncertainty, July 2019.
[2] Extractives, which consists of both natural gas and mining subsectors, in Afghanistan will only reach maturity over time, but important impacts may be felt early. If properly leveraged through reforms and public investment, extractives offer a powerful instrument to maximize growth impact on livelihoods.

gas fields (Sheberghan Gas-to-Power Project, P166405) and (b) a 58.6 MW gas-fired IPP to operate over a 20-year time frame located at Mazar-e-Sharif (Mazar e-Sharif Gas-to-Power Project, P157827).

12. The World Bank Group will support the first project with an IDA Guarantee. The second project will be supported by IDA and Multilateral Investment Guarantee Agency (MIGA) guarantees, an International Finance Corporation (IFC) loan, and IDA Private Sector Window and other risk-mitigation instruments. The gas demand of these two projects requires the optimization of gas field facilities, procurement and installation of the new amine plant, and the completion of construction of the Sheberghan-Mazar Pipeline (SMPL). These pieces of infrastructure are being funded under the AGASP. Figure 1 details how these three operations are interlinked.

Figure 1. Gas-to-Power Value Chain



Note to Figure 1: AGE = Afghan Gas Enterprise; AOGRA = Afghanistan Oil and Gas Regulatory Authority; DABS = *Da Afghanistan Breshna Sherkat*; E&P = Exploration and Production; SE = Supervision Engineer; SCADA = Supervisory Control and Data Acquisition.

13. The development of Afghanistan's gas resources has been identified as a critical link for long-term security and diversification of energy supply, growth, and stability for the country. Over the short term, indigenous gas resources offer opportunities for increased energy access and energy security and create the space for the deployment of variable, intermittent renewable energy. The Mazar-e-Sharif Gas-to-Power Project Appraisal Document (PAD) notes that harnessing indigenous gas resources to generate electricity and diversifying away from energy imports, will enhance energy security.

14. Since 2002, the MoMP has been strengthening the enabling environment for private/commercial sector investments, targeting further development of the currently producing and discovered fields in northern Afghanistan and testing untapped potential in other prospective basins. Internationally competitive natural gas tender rounds have confirmed investor interest, but unaddressed impediments to investment across the gas value chain remain an obstacle to continued sector development.

15. **Mazar and Sheberghan gas power plants.** Afghanistan has yet to demonstrate a fully integrated 'proof of concept' investment to develop and deliver natural gas to credit worthy customers. It is expected that the development of Afghanistan's hydrocarbons potential will initially be anchored in the expansion of domestic uses of natural gas and fundamentally in the expansion of gas-based electric generation capacity as part of current efforts to increase availability of power and energy from domestic sources. As discussed earlier, two main gas-to-power projects: (a) a 58.6 MW gas power plant in Mazar-e-Sharif ('the

Mazar IPP') (project agreements, including PPA, signed in January 2018) and (b) a 40 MW gas power plant in Sheberghan ('Sheberghan IPP') (project agreements signed in March 2018).[3] The implementation of both projects will be dependent on confirmed access to sufficient and sustainable gas supply from the currently productive fields, sustained investment in the development of upstream gas production, and processing capacity to ensure long-term gas supply.

16. The Sheberghan IPP Project is based on a mobile gas turbine generator. The Sheberghan IPP has entered into a five-year PPA with DABS, with the possibility of extension. The Mazar IPP and DABS have entered into a 20-year PPA with commissioning targeted for June 2021. Gas power plants by IPPs with medium- to long-term PPAs underpin the case for gas sector development.

17. The GoA faces an urgent challenge to increase gas production and transportation from the current 350 million standard cubic meters per day (Mscmd) to 920 Mscmd to supply fuel gas for the Sheberghan and Mazar IPPs and for existing off-takers, including the Northern Fertilizer and Power Plant (NFPP). To meet this demand and fulfil its contractual obligations, the GoA will need to accelerate construction of the new SMPL and debottleneck the process to treat gas to contracted gas quality specifications.

18. **Existing pipeline between Mazar-e-Sharif and Sheberghan.** In 2014, a detailed assessment of plant and field facilities of the Sheberghan gas fields and their condition was conducted with WB support, including that of the existing Mazar-e-Sharif pipeline[4]. The original 89.1 km pipeline, still in operation today, was commissioned in 1974. Over time the existing pipeline system went into disrepair due to corrosion and lack of maintenance. In 2009 and 2010, large sections of the old pipeline were replaced with support from the U.S. Task Force for Business and Stability Operations (TFBSO). However, to meet increasing demand in the Mazar area from the planned IPP, the pipeline needs to support much higher pressures than it can currently withstand. The nameplate Maximum Allowable Operating Pressure (MAOP) of the pipeline is stated at 83 bars; at present, however, it is transporting about one-tenth of its capacity at one-fifth of its nameplate MAOP. Given its age and condition, the existing pipeline can no longer be refurbished or safely pressurized to deliver twice the currently transported volume to meet the proposed Mazar IPP requirements.

19. **New SMPL.** In addition to its efforts to rehabilitate the existing pipeline and considering the limited practical scope for its refurbishment, TFBSO purchased and delivered pipe and some associated materials for the construction of a new 89.1 km (12 inches in diameter) pipeline in 2013/14.[5] Starting in 2016, AGE began to undertake the construction of the new pipeline, and approximately 44 km has been laid and partially trenched along the route of the old structure using the pipe and materials delivered by TFBSO.

20. The Government, through a Project Preparation Grant (PPG) to the Ministry of Energy and Water (MEW), procured the services of an independent Supervision Engineer (SE), which was mobilized in January 2019 to undertake an assessment of the already constructed portion of the SMPL and gas processing facilities; prepare an Environmental and Social Impact Assessment (ESIA), Environmental and

[3] Both IPP projects were reviewed and approved by the World Bank Board of Directors on 10 October 2019.
[4] "Assessment of the Status of Afghan Gas Operations", Unicon Limited for the Ministry of Mines and Petroleum of Afghanistan, August 2014.
[5] Detailed documentation regarding the TFBSO provision of equipment to the MoMP it not available.

Social Management Plan (ESMP), and Resettlement Action Plan (RAP); and supervise and certify the completion of construction of the remaining portion of the SMPL.

21. Based on an assessment carried out by the SE in January/February 2019, AGE engineers were found to be competent in welding, construction, and operations and have many of the necessary skills to complete the construction of the pipeline. However, they do not have required knowledge and experience in modern application of quality assurance (QA) and quality control (QC), health, safety, and environment (HSE); design and engineering as well as in commissioning and operation and maintenance (O&M).

22. AGE faces additional challenges resulting from a lack of construction machinery, equipment, materials, personal protective equipment, consumables, and testing equipment. The GoA and AGE have requested the World Bank's support to fill these gaps and finance the design, engineering, supervision, and construction of the new SMPL. Based on the 2014 assessment of AGE's inventory of tools and equipment (mentioned in para 20), the SE prepared a preliminary list and estimated costs of the equipment that will be required for the completion of construction of the SMPL and field facilities (see annex 3)[6]. A definitive and more comprehensive list of equipment, with final technical specifications, to be procured or leased will be developed following the completion of detailed engineering and design for the construction of the SMPL by a SE. The detailed design and engineering, to be completed by a SE, will be consistent with international construction standards and requirements for climate-resilient infrastructure. As such the project includes, as a disbursement condition for category 1b, the finalization of the detailed design and engineering survey for the construction of the SMPL, a detailed inventory of existing equipment, and the final equipment list to be procured or leased.

23. The design engineering work for the SMPL is delayed with selection of a consulting firm under discussion, as the Government considers its procurement options. Once this procurement is completed, the supervision engineer has estimated the time line for completion of construction of the SMPL at 14 to 15 months, including a preparatory phase of 5-months for surveying, design and engineering, and procurement; a construction phase of 8-months; and a post-construction phase of 2-months for testing and commissioning.

24. **Yatimtaq gas field.** The sustainable supply of natural gas to the Sheberghan and the Mazar IPPs into the long term—20 years in the case of the Mazar IPP PPA—will be dependent on continued gas supply from the Yatimtaq and surrounding gas fields, as existing production wells begin to deplete in approximately five years (see paragraphs 116–122 for more a detailed discussion on gas supply). The Yatimtaq gas field is located approximately 18 km east of the city of Sheberghan and covers an area of 9 km^2. Geologically, the field lies within the Amu Darya Basin which extends from the prolific gas-prone basins of Turkmenistan and Uzbekistan into northern Afghanistan.

25. In 2016, consultants commissioned by the United States Agency for International Development (USAID) conducted a resource assessment of seven gas fields in the Sheberghan area and estimated that 1,050 billion cubic feet (Bcf) of recoverable resources remain, of which the Yatimtaq gas field contains 200 Bcf. With support from the Asian Development Bank (ADB), workovers were recently conducted on three

[6] Based on the preliminary list in annex 3, an engineering firm has since prepared technical specifications for procurement of equipment known to be required.

wells. Two wells currently produce 150 Mscmd out of a total production volume of approximately 350 Mscmd in the Sheberghan area.

26. By 1988, a total of 35 wells had been drilled in Yatimtaq, of which 2 are currently in production and an additional 2 are on standby. Pending the preparation of an updated field development plan for Yatimtaq, the MoMP foresees the need for an additional seven wells over the next five years to ensure a sustainable supply of natural gas to existing and prospective IPP off-takers. The existing development plan is based on information gathered before the Soviet departure from Afghanistan in 1988. An updated development plan is now required on the basis of data collected since then on the Yatimtaq wells. Once the plan is completed, it will be possible to better determine the number, sequencing, location, and cost of the new wells. The plan will also help the government determine the optimal source of financing for these activities.

27. **Field facilities.** Yatimtaq's natural gas is considered 'sour', meaning that it contains commercially unacceptable levels of hydrogen sulfide that require extraction before commercial-quality natural gas can be injected into the pipeline transport system. In 2014, TFBSO delivered a new amine plant to remove the high sulfur content from Yatimtaq's raw natural gas. The plant was recently commissioned by AGE without expert supervision or technical guidance. It is currently operating at around 20 percent of its nameplate capacity and requires optimization.

28. The SE also determined that optimization of field facilities to deal with increased offtake volumes, including dehydration and compression, will be required. In addition, a new amine plant is recommended for backup during downtime for maintenance and repair of the existing plant and to de-risk investments by ensuring an uninterrupted gas flow to current and prospective IPP off-takers.

29. Further investments will therefore be needed to ensure continued sustainable and reliable delivery of commercial-quality natural gas. These include the optimization of field facilities to deal with projected increased offtake volumes, including dehydration, compression, and desulfurization (existing amine plant) to address recently identified fluctuations in gas flow pressures, temperature, and composition of natural gas flows. In the meantime, the GoA, with World Bank support, has procured international experts (on-site since June 2018) to assist in the optimization of the existing amine desulfurization plant and is also in the process of tendering a turnkey contract to procure a new amine plant.

30. **Totimaidan gas block.** As mentioned earlier, the sustainable supply of natural gas to the Sheberghan and the Mazar IPPs in the long term will be dependent on the continued development of gas resources available in the Sheberghan area as the existing wells will begin to deplete in approximately five years. The current estimates based on projected demand and on the existing field development plan indicate that beginning in 2023, it will be necessary for the government to bring new wells into production to meet the needs of the IPPs as well as the existing off-takers (a total of approximately 365 Mcm per day) (see paragraphs 116–122 for more a detailed discussion on gas supply).

31. The Totimaidan gas block contains significant accumulations of already discovered natural gas that, to date, have not been developed. As supplies from older fields begin their normal decline, it is expected that Totimaidan resources will be needed to replace them. The Totimaidan block, located west of Sheberghan, covers 7,130 km^2 in the Afghan portion of the Amu Darya basin. It includes the

undeveloped Juma and Bashikurd gas fields. Consultants commissioned by USAID estimated that the two fields hold 580 Bcf of gas resources.

32. In anticipation of the gas requirements of the Sheberghan and the Mazar IPPs, the MoMP has recently initiated steps to de-risk supply by opening the development of the Totimaidan block for international competitive tender. Earlier, in September 2014, the MoMP announced the successful conclusion of a Tender Agreement, negotiated with a consortium of developers for E&P rights of the gas-prone block. By 2018, however, negotiations had proven to be unproductive, and the contract was rescinded. The proposed project will provide technical support to the MoMP to successfully prepare and manage the tender for development of the Totimaidan block.

Institutional Framework for the Extractive Industries

33. Resource development outcomes are largely determined by the quality of public institutions that govern the sector, in which the government plays several key roles. Extractives governance broadly consists of (a) a modern and strong policy, legal, regulatory, and contractual framework for private sector investments; (b) strong institutions and professional capacities that enable consistent implementation and oversight; and (c) transparent and accountable decision-making, contract award, licensing and regulatory processes that underpin a sustainable sector development.

34. In the context of Afghanistan, these key institutions include the MoMP, Afghan Oil and Gas Regulatory Agency (AOGRA), National Environmental Protection Agency (NEPA), and Afghan Gas Enterprise (AGE), among others. These institutions need to coordinate and work effectively to ensure good governance, enable private investment, and ensure the long-term sustainability of the hydrocarbons sector.

35. **MoMP.** The MoMP is the core government entity responsible for overseeing the management and development of the extractives sector. Over the years, through several donor-funded programs, the Government has attempted to rationalize and prioritize the operations of the ministry to focus its efforts primarily on establishing a modern and transparent legal, policy, and strategic framework for sector development. Despite restructuring efforts, institutional capacity within the ministry remains limited due to a lack of continuity in policies and strategies and the loss of trained technical staff and institutional memory derived from frequent changes in key leadership positions.

36. Today, the core responsibilities of the MoMP include sector development oversight, policy and strategy, and investment promotion. There are four state-owned enterprises (SOEs) that operate under the remit of the MoMP, including (a) the NFPP, (b) the North Coal Enterprise, (c) AGE, and (d) the Jabal-al-Saraj Cement Enterprise.

37. Further restructuring of the MoMP is expected over the next several years. As envisioned in the Government's Mining Sector Road Map (2018), "MoMP will retain and strengthen its policy-making role, while relinquishing its regulatory and operational roles." The MoMP has undertaken a number of actions over the last 24 months to reform its organizational structure and establish basic capacity to face its most pressing challenges. A new organizational structure has been developed based on the Mining Sector Road

Map, the 2018 Hydrocarbons Law, and the 2018 Minerals Law. The hydrocarbons sector unit been partially staffed with a small cadre of young, capable professionals on whom the MoMP largely relies to address its most urgent challenges. But overall staffing of highly competent professionals across all units remains to be completed.

38. **AOGRA.** AOGRA, formally created by decree in September 2018 as an independent regulator with an organizational structure separate from that of the MoMP, is charged with responsibility for contractual and regulatory oversight over the oil and gas value chain, including exploration, development, processing, transport, and commercialization of hydrocarbon resources. Its responsibilities include geological data management, contract management and compliance, regulatory monitoring, and oversight. The World Bank has been approached to provide immediate capacity-building and advisory support for its operationalization.

39. While AOGRA is assigned responsibility over contractual compliance and regulatory oversight, the Hydrocarbons Law stipulates that the MoMP retains sole authority over sector policy; hence, ultimate responsibility for the development and content of contract models, fiscal regimes, and regulations will continue to reside with the MoMP (subject to approval by the Cabinet), while executive responsibility for their operationalization will be assumed by AOGRA. This approach follows recommended international practice. A draft Administrative Institutional Regulation clarifying the roles and responsibilities of the Ministry and AOGRA and outlining coordination processes and corresponding procedures to discharge their respective functions under a system of checks and balances was developed with World Bank support in 2018. The draft was submitted in early 2019 for consideration and Cabinet approval. The regulation remains under review by different entities within the GoA and has yet to be approved.

40. **AGE.** AGE was formed in 1967 to explore and develop natural gas in Afghanistan. As an SOE, the enterprise is listed among the assets of the Ministry of Finance (MoF), with a dotted reporting line to the MoMP. In 2014/15, with support from the Second Sustainable Development of Natural Resources Project (SDNRP2, P118925), an assessment was undertaken to prepare a plan to corporatize AGE. The report highlighted several persistent deficiencies in the enterprise's organizational, operational, and human resource structure, including the following:

- Hierarchical organizational structure with authority tightly controlled among a few senior managers
- Aging employee profile, with senior employees having limited formal qualifications
- Lack of training opportunities and limited exposure to modern business techniques and oil and gas industry best practices
- Weak internal standards for technical asset O&M, with assets operated beyond their life
- Inadequate gas production and processing facilities
- Inadequate gas distribution system, unable to meet current and projected growth in demand

41. Modernizing and strengthening AGE will be necessary to ensure its capacity to effectively discharge its responsibilities over the management and O&M of plant, equipment, and personnel to international standards and to reliably and sustainably respond to downstream power sector development requirements—this includes the SMPL and field facilities at Yatimtaq. The Government has

recently engaged the services of an international law firm to move forward with the legal process of corporatization as established in the Law on State-owned Corporations approved in 2018.[7]

42. Other ministries and agencies involved in the management and regulation of the natural gas sector include the MoF (taxes, and royalties), NEPA (environmental oversight), Ministry of Interior (security), Ministry of Transport (associated infrastructure), Ministry of Urban Development (land management/use), and the Ministry of Information and Culture (MoIC) (management of cultural heritage). Most of these agencies play a critical role in managing environmental and social (E&S) impacts associated with the sector.

43. **Afghanistan Extractive Industries Transparency Initiative (AEITI).** Since 2008, the GoA has been implementing the Extractive Industries Transparency Initiative (EITI), a global standard to promote the open and accountable management of oil, gas, and mineral resources. The AEITI reporting process is implemented under the oversight of the AEITI Multistakeholder Group (MSG) with administrative assistance by the Afghanistan National EITI Secretariat, housed within the MoMP. On January 18, 2019, following a periodic 'validation' by the international EITI Board, Afghanistan was suspended from EITI owing to overall 'inadequate progress' in implementation of AEITI. Since then, a number of corrective actions have been taken which broadly involve (a) improving mechanisms for steering AEITI implementation, (b) improving quality of extractives sector data disclosed through AEITI reports and implementing online data disclosures,[8] and (c) demonstrating positive impacts of AEITI implementation for Afghanistan. The mandatory commencement deadline for Afghanistan's next EITI validation is July 18, 2020. However, given the importance of reversing its suspension, the MoMP plans on submitting an early revalidation request to the EITI Board by January 2020.

44. The World Bank, through several stand-alone grants funded by the Extractives Global Programmatic Support Trust Fund, SNDRP2, the Fiscal Performance Improvement Support Project (FSP, P159655), and an ongoing PPG, has been providing support to the implementation of AEITI from the outset.

Legal Framework

45. **The Hydrocarbons Law.** A new Hydrocarbons Law was approved in mid-2018, establishing clear mandates and areas of responsibility for the ministry and the newly created independent regulator, AOGRA. In addition to the traditional provisions for hydrocarbons development, the law provides clarity on AOGRA's governance mechanisms, establishing a largely independent Board of Directors, a Hydrocarbons Register, and data bank to be administered by the regulator. The law also provides for the construction of a private sector-enabling contractual and regulatory framework, stipulating the exclusive use of model contracts and international competitive tenders for the award of hydrocarbons contracts along the business value chain. Subject to the development of an attendant regulatory framework, the law effectively lays the groundwork for the modern governance of Afghanistan's hydrocarbons sector.

[7] The corporatization process of AGE is ongoing; the exact time line as to when it will be completed is not available.

[8] See AEITI report for FY2015/162016/17, available at: http://aeiti.af/Content/Media/Documents/AEITIReport1395-13962906193062019722017155332532 5.pdf. For online disclosures, see https://afghanistan.revenuedev.org/dashboard and https://momp.gov.af/ ('transparency' tab).

Mining Sector Road Map

46. The GoA's new Mining Sector Road Map (which addresses both mining and hydrocarbons), approved by the High Economic Council (HEC) of the GoA in January 2018, expresses its commitment to transparent and accountable mining and hydrocarbon sector development. The Government considers these sectors as critical for economic growth to benefit Afghanistan's citizens, for the generation of fiscal resources for the Government, and for increased prosperity across generations.

47. The Mining Sector Road Map specifically points to the importance of having strong institutions and good sector governance, recognizing that if poorly managed, Afghanistan's extensive natural resource endowments could contribute to a political economy with increased levels of conflict and lower rates of economic growth. With this understanding, the Government has taken a long-term view of the country's natural resource endowment and is setting out to establish an institutional framework aimed at creating the conditions for Afghanistan to promote the development of the extractives sector as a source of growth over the coming decades.

48. The proposed AGASP aligns with both the road map and underlying reform strategy through the following:

- This road map sets out the direction for the sectors, including restructuring of the MoMP as an institution fundamentally focused on policy, strategy, sector oversight, and investment promotion.
- Operationalization of the independent hydrocarbons regulatory authority (AOGRA).

World Bank's Engagement in the Sector

49. The First Sustainable Development of Natural Resources Project (SDNRP1) and SDNRP 2 (P098118 and P118925) focused on establishing the foundational elements of mining sector governance while also supporting limited analytical activities in the hydrocarbons sector. Given Afghanistan's vast resource potential, technical assistance (TA) in the extractive industries under the AGASP will now broaden its focus on improving energy access through development on the country's significant natural gas potential, including the development of urgently required gas infrastructure. The World Bank recognizes that in the Afghan context, building strong sector governance will require a long-term programmatic approach.

50. In September 2018, the Afghanistan Reconstruction Trust Fund (ARTF) Advisory Services, Implementation Support and Technical Assistance (ASIST) window committed an additional US$2.1 million in World Bank-executed support aimed to enhance the administration of extractive resource development by strengthening the capacity of key government institutions, strengthening professional skills, and supporting sector investment opportunities. To date, in the gas sector, the ASIST facility has supported capacity-building activities to the MoMP and AOGRA to develop a private sector-enabling gas sector regulatory framework.

C. Relevance to Higher Level Objectives

51. The proposed project is aligned with the Country Partnership Framework (CPF) (2017–2020) for Afghanistan[9] which has been extended by two years to FY22 during the 2019 Performance Learning Review (PLR). The CPF focuses on (a) building strong and accountable institutions, (b) supporting inclusive growth, and (c) deepening social inclusion which remains relevant in maintaining the balance between protecting the poor and laying the foundations for longer-term growth. The pillar on inclusive growth indicates that "support for extractive industries aims to improve governance and increase revenues, and to provide a base for more diversified growth in the longer term along key resource corridors." The Afghanistan Development Update (2019) notes that over the medium-term, economic development progress will depend on mobilizing the sectors with greatest capacity to support increased growth, job creation, exports, and government revenues. Gas supports a balanced growth strategy through improved energy access and energy security, including the realization of Afghanistan's substantial extractives potential.

52. There is a need over a medium-term framework to improve the policy and regulatory capacity and provide 'proof of concept' investments that would stress-test the governance, contractual, and regulatory regime for gas. The framework commits the World Bank Group to supporting the creation of an enabling environment by supporting improvement in policies, regulatory capacity, and infrastructure for transparent and sustainable development of the extractive sector.

53. The project is also aligned to the country's own National Peace and Development Framework (2017–2021), recognizing that without peace the prospects for growth in the short run are uncertain. It lays out four main development priorities, one of which includes "Economic growth and job creation through a comprehensive agriculture development program, private sector-led development program, mineral and resource development, and energy and infrastructure development as well as promoting regional integration, improving human resource skills, and urban development."

54. **Relationship with the World Bank Group's Gender Strategy.** The World Bank's New Gender Strategy (FY16–23), with its emphasis on gender equality and poverty reduction, will guide the project's design by contributing to closing the gender gap in the sector. A desk review of existing data in the sector undertaken for the proposed project found that gender disparities in the extractives sector in Afghanistan persist in multiple areas.

55. **Access to employment and skills.** Globally, according to the World Bank estimates, only 5–10 percent of employees in the extractives industry are women. Cultural and sometimes legislative barriers to women's participation in the sector leave space for improving their active participation primarily through formal employment in the MoMP, AOGRA, AGE, and other relevant institutions, including in the private sector. According to data from the national central statistics organization, as of 2017, only 12 percent of employees in the MoMP were women (4.8 percent contracted employees and 7.2 percent government officials). More specifically, the overall planned Tashkil (that is, organogram) for AOGRA is 264 persons. Currently, only 12 people are hired and working, among which only 2 are women in the lower managerial level. This shows a very low percentage of female employees compared to male employees due to social norms and general perceptions about a sector seen as male dominated, where

[9] Report Number: 120366. The World Bank Group in Afghanistan: Country Update. Issue no. 051 (October 2017).

women's roles have been narrowly framed. According to data from the Higher Education Information System, no more than 2,000 women are enrolled in public universities in fields such as engineering, petroleum, energy, power, geology, geodesy, and others. In addition, a very small number of female graduates in those fields are recruited in these sectors for different reasons, including sociocultural norms which guide occupational gender segregation and a restricted vision of women's participation by both employers and female job seekers. These female students, if approached and further trained with required skills and provided with enabling workplace environment, can occupy technical-level jobs and increase female participation in decision-making roles. It is important to note that the MoMP, through its newly adopted Mining Sector Road Map, places significant emphasis on the negative impacts of the oil and gas sector activities on women and the lack of employment and promotional opportunities for women in the MoMP. Under the road map's Institutional Reform and Development pillar, the ministry identifies a number of actions, including the preparation of a Gender Mainstreaming Strategy and an initiative on lobbying and coordinating research on the impact of the extractive sector on women.

56. Building on this analysis, the AGASP will seek to undertake the following activities to address these gaps:

(a) **Women's employment in the gas sector and extractives more broadly.** The project includes a range of activities (under Component B) that relate to staffing of public institutions including the establishment of a young professional's program within the MoMP, aimed at recruiting young women and men with high potential. The project will explore mechanisms (for example, recruitment campaigns targeted specifically to women, behavioral change intervention to support women's role and participation in the sector, supporting the establishment of female professional network in mining sector, and establishing a link between academic institutions and the ministry to offer internships for female students) to increase women's employment in the ministry in general and their enrollment in the established ministry programs from 12 percent to 20 percent. Furthermore, the project will support the ministry to take specific action to support work environments that are conducive to women's employment (for example, raising awareness on sexual harassment issues, establishing a reporting mechanism for gender-based violence [GBV], and sexual harassment incidents). In promoting women's employment at technical/managerial levels within the ministry, the project will include skills training targeted to the existing women staff. These training initiatives will be aimed at narrowing the gender gap in technical skills and may also include soft skills training (for example, confidence building and leadership). As part of analytical work, the project will support the ministry to conduct a study of the impacts of extractives on women. Also, under the project, gender sensitization trainings for the staff of the relevant stakeholders as well as for the communities affected by the project will be designed and conducted.

(b) **Institutional capacity on gender.** The ministry has established a Gender Unit; its capacity, however, is rather limited, particularly as it is related to knowledge of the gender dimensions of the sector, including Gender Based Violence (GBV). To address this, the project will provide technical support to strengthen the Gender Unit of the MoMP to implement the existing GoA gender policy, develop a code of conduct for GBV prevention in the extractives sector, and conduct gender-sensitization training for the relevant ministry staff.

(c) **Gender action plan.** The project has been rated Moderate risk under the GBV infrastructure assessment tool as part of a review of GBV risks in the Afghanistan portfolio and pipeline. The project will develop and implement a gender action plan during implementation.

57. **Maximizing Finance for Development (MFD).** The proposed AGASP is aligned with the World Bank's MFD strategy by focusing on creating the enabling environment for private sector investment in the gas-to-power value chain. Since 2003, World Bank assistance has focused on the MoMP's role as administrator of Afghanistan's mineral and hydrocarbons resources, emphasizing the need to incrementally develop a strong policy, legal, regulatory, and contractual framework defining the rules of engagement for non-state investors. This approach is built on and expanded under the AGASP in the components addressing regulatory oversight and transactions support to the MoMP to establish competitive, internationally benchmarked commercial terms and conditions for private sector investment. In addition, the component on Sustaining Gas Supply is aimed at facilitating private sector investment such as the Mazar and Sheberghan gas power plants.

58. Within the AGASP, increasing capacity to deliver commercial-quality natural gas to the existing and prospective IPP off-takers in Sheberghan and Mazar is part of a comprehensive and integrated World Bank/IFC/MIGA approach to boost energy access and energy security in Afghanistan. The proposed project creates the conditions for the sustainable supply of natural gas by attracting private investment for the development of the Totimaidan gas block, by improving sector governance and institutional capacity to ensure transparent, nondiscretionary regulatory oversight, and by strengthening gas processing and transport infrastructure to deliver commercial-quality natural gas to end-use IPPs and current off-takers.

59. The AGASP will specifically contribute to de-risking investments for the two downstream IPP projects (which are expected to generate US$122 million in investment from the private sector and added installed generation capacity of 98.6 MW).

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

60. The Project Development Objective (PDO) is to facilitate a sustainable supply of gas through targeted investments in gas infrastructure and enhanced gas sector governance.

PDO Level Indicators

(a) Increased capacity to deliver commercial-quality[10] natural gas to off-takers in Sheberghan and Mazar

[10] Commercial-quality or pipeline-quality natural gas is understood as raw natural gas that has been processed to be adequate for application by end-users, namely, natural gas whose specifications are (a) within +/- 5 percent of the heating value of pure methane, or 1,010 Btu per ft^3 under standard atmospheric conditions and (b) free of water, toxic, or corrosive contaminants.

(b) Improved institutional, regulatory, and contractual framework for gas sector management and oversight

B. Project Components

61. The project contemplates three components: Component A: Sustaining Gas Supply; Component B: Strengthening Gas Sector Governance; and Component C: Project Management. A detailed summary of each of the components is provided in the following paragraphs.

COMPONENT A: Sustaining Gas Supply (US$34.20 million + US$1 million contingency)

62. The objective of Component A is to support the sustained supply of commercial-quality natural gas for the Sheberghan and Mazar IPPs and other off-takers. Subcomponent A1 will provide support to the MoMP and AGE to ensure sustainable natural gas deliverability for off-takers by supporting gas infrastructure including completing construction of the SMPL, optimization and O&M of gas infrastructure and field facilities, and construction of a new amine plant. Subcomponent A2 supports the international competitive tender for the contract award for development of the Totimaidan gas block.

Subcomponent A1. Gas Infrastructure (US$31.95 million) (Beneficiaries: MoMP, AGE, and AOGRA)

63. This subcomponent will provide technical support to the MoMP and AGE to ensure sustainable natural gas deliverability for off takers. It includes the construction of the SMPL, optimization and installation of upstream field facilities, and assessment of field development for Yatimtaq. Support will focus on facilitating compliance with contractual gas supply commitments already assumed by the Government with the Sheberghan and Mazar IPPs. Specific activities under this subcomponent will include activities A1.1, A1.2, and A1.3.

Activity A1.1. Procurement of equipment and technical assistance for the construction, operations, and maintenance of the new SMPL

64. This activity will finance the procurement of equipment for completion of construction of the SMPL and will provide TA and on-the-job training to the MoMP, AGE, and AOGRA to ensure compliance with international quality and safety standards and practices (including associated E&S management) during construction and O&M of the new 12-inch diameter pipeline between Sheberghan and Mazar-e-Sharif.

65. AGE has been assessed by the SE to have the skills necessary to complete the civil works aspects of construction of the pipeline, subject to the provision of adequate equipment, and project management and QA/AC by the SE. The MoF has allocated budget for labor and civil works to AGE to complete the construction of the pipeline; however, in the event that there is insufficient budget available from the GoA to cover the full labor costs, the proposed project includes a contingency budget for this activity.

66. A more detailed description of activities is as follows:

(a) Procurement of equipment for the construction of the SMPL,[11] including pipe-laying side booms, excavation equipment, water pumps and air compressors, pipeline valves, and safety equipment to comply with international Health Safety and Environmental (HSE) standards. The type of equipment and their technical specifications are based on an assessment of needs and a project implementation plan already prepared by the SE during project preparation (see annex 3 for a preliminary list of equipment).

(b) Implementation support and technical advice to AGE for QA/QC and supervision engineering during the pre-construction, construction, and operating phases of the pipeline, including preparation of E&S documents; pre-construction surveying (including geological, geodetic, environmental, and hydrological engineering); development of a detailed design and engineering plan in accordance with international standards and engineering practices; and O&M.

(c) Implementation support and capacity building (technical advisers) for the MoMP and other relevant stakeholders to monitor and report on the implementation of ESMPs associated with the construction and operation of the 12-inch diameter gas pipeline in accordance with the Environmental and Social Framework (ESF).

Table 1. SMPL Cost Components

Item	Financing Mechanism	Explanation
Construction equipment	TFBSO (US$ - unknown) IDA/AGASP (US$6.3 million)	Some construction materials were procured and delivered by TFBSO in 2013/14. However, according to the assessment of the SE, additional equipment is necessary to complete the construction of the pipeline. See Activity A1.1.
Pipe materials	TFBSO (US$ - unknown)	Pipe was procured by TFBSO and delivered to AGE in 2013/14.
Pre-construction surveying and development of a detailed design and engineering	IDA/AGASP (US$1.74 million)	See Activity A1.1.
QA/QC - SE	ARTF/MAZAR PPG (US$1 million) IDA/AGASP (US$2.4 million)	The SE was originally procured through a PPG financed by the ARTF in late 2018. The original contract amount for the SE was US$3.1 million. Of this original amount, US$1 million will be financed through the PPG, while the remaining amount will be transferred to the AGASP. See Component A1.1.
E&S monitoring	IDA/AGASP (US$1.8 million)	See Activity A1.1.
Capacity building to AGE on O&M gas pipeline and field facilities	IDA/AGASP (US$1.7 million)	See Activity A1.2.
Labor/civil works	MoMP/AGE (US$1.23	The MoMP confirmed that AGE has been allocated

[11] As mentioned earlier, 12-inch pipe for the full length of the SMPL and basic construction equipment were procured by TFBSO in 2013/14; however, the SE has determined that additional construction equipment needs to be procured to meet international standards and specifications for pipeline construction.

Item	Financing Mechanism	Explanation
	million)	budget for new pipeline construction through development budget of the MoMP. Costs will include salaries for the pipeline construction team. [a]

Note: [a] Limited contingency has been built in the project budget in the event that the budget allocation to AGE does not fully materialize for the construction of the pipeline and additional resources are necessary (a contingency of US$1 million is included in the project budget to finance these costs if necessary).

Activity A1.2. Procurement of amine plant and technical assistance for the O&M of gas field facilities

67. This activity will finance (a) the procurement, installation, and commissioning a new desulfurization amine plant; (b) TA to, and building capacity of AGE in the optimization, operation, maintenance, control, and metering of new and existing field facilities and SMPL; and (c) procurement and installation of metering equipment and System Control and Data Analysis SCADA systems.

68. A more detailed description of specific activities is as follows:

(a) Procurement, installation, and commissioning of a new natural gas desulfurization amine plant in the Yatimtaq gas field, including civil works to prepare the site for installation.

(b) TA and on-the-job training for AGE personnel to optimize, operate, maintain, and control the gas pipeline and field facilities (including the amine plants), including gathering, dehydration, compression, and processing.

(c) Procurement and installation of metering equipment and a SCADA system for gathering and analyzing real-time operational data; this activity will also provide training for designated AGE staff in the use of the equipment.

Table 2. Field Facilities Cost Components

Item	Financing Mechanism	Explanation
First amine plant	TFBSO (US$ - unknown)	The first amine plant was procured by TFBSO and installed and commissioned by AGE in 2016.
Optimization of first amine plant	AGASP (US$1.75 million)	See Activity A1.2.
Procurement and installation of second amine plant	AGASP (US$13.25 million)	See Activity A1.2.
Procurement and installation of SCADA and metering equipment	AGASP (US$1.2 million)	See Activity A1.2.
Training to AGE on O&M of field facilities and gas pipeline	AGASP (US$2.0 million)	See Activity A1.2.

Activity A1.3. Technical assistance and on-the-job capacity building to AGE on Yatimtaq gas field

69. This activity will ensure the sustainability of natural gas supply for the Sheberghan and Mazar IPPs and other off takers, given that the existing production wells in Yatimtaq will start to undergo normal depletion in approximately five years. This activity will provide TA and building capacity for AGE to update data and prepare an initial exploration plan and thereafter assess field development plans, focusing

among others, on the Yatimtaq gas field, and to address associated E&S aspects. Field development planning will allow AGE to optimize the use of government funds and/or create opportunities for private sector investment.

70. A more detailed description of specific activities is as follows:

(a) On-the-job capacity building and TA to AGE to prepare and assess field development plans for the Yatimtaq gas field and for the lower horizons of currently declining older fields.

(b) Support to address E&S issues associated with field development, including the preparation of an ESIA or environmental audit of existing impacts if necessary.

Subcomponent A2. Tendering Totimaidan Gas Block (US$3.25 million) (Beneficiaries: MoMP, and AOGRA)

71. The objective of the activities under this subcomponent is to ensure the sustainability of natural gas supply for the Sheberghan and Mazar IPPs and existing off-takers over the longer term through support to the MoMP and AOGRA as they prepare and implement an international competitive tender for the development of the Totimaidan gas block. [12]

72. This subcomponent will finance technical, legal, financial, E&S expertise, and training for the preparation and implementation of the international tender and monitoring of contractual and regulatory compliance (including E&S aspects) of the Totimaidan gas block. A more detailed description of specific activities is as follows:

(a) Provision of expert technical, legal, financial, and E&S advice on contractual terms and conditions related to private investment in the gas sector for the preparation and implementation of an international competitive tender for development of the Totimaidan gas block.

(b) Implementation support (technical advice) and capacity building for the MoMP and AOGRA to monitor contractual and regulatory compliance at Totimaidan gas block, including

- Developing monitoring and reporting systems, field inspection methodologies, and reporting capacity;
- Strengthening technical capacity to understand resource assessments and technical, financial, and economic elements of field development and hydrocarbons production and the optimization of resource pricing and allocation policies in consideration of sector and national development needs;
- Providing on-the-job training and on-demand technical, financial modeling, and engineering expertise to benchmark and adjust contractual and regulatory parameters

[12] Aligned with the World Bank's December 2017 announcement at the One Planet Summit, the project will not finance upstream development of new gas wells which, other than in exceptional circumstances, should be conducted by the private sector.

against international trends; and

- Strengthening capacity to regulate, monitor, and ensure compliance with gas associated HSE management issues.

(c) Implementation support and capacity building (technical advisers) to the MoMP and AOGRA to monitor and report on E&S contractual and regulatory compliance associated with the international tender of the Totimaidan Gas Block, including

- Implementing appropriate standards and integration of E&S protection protocols;
- Building capacity in E&S impact assessment and management, including water resource management; and
- Systematizing tracking of regulatory review processes associated with environmental/social monitoring and reporting.

COMPONENT B: Strengthening Gas Sector Governance (US$13.3 million)

73. The objective of this component is to address institutional capacity gaps that persist in the management of Afghanistan's hydrocarbon resources—ensuring predictability, transparency, and effectiveness. Emphasis will be given to the MoMP's central functions as established in the Hydrocarbons Law (2018) and the Government's Mining Sector Road Map (2018), as well as to the operationalization of AOGRA. Geographic focus will include the MoMP's and AOGRA's central offices in Kabul and, where relevant to the task at hand, field offices responsible for regulatory oversight and inspection, including compliance with occupational health, safety and environmental requirements.

Subcomponent B1. MoMP: Strengthening Capacity to Manage the Gas Sector (US$10.8 million) (Beneficiaries: MoMP)

74. Building on previous support provided to the MoMP, the objective of this subcomponent is to strengthen institutional capacity of the ministry to discharge its functions and responsibilities related to the development of sector policy, sector strategies to achieve short- to medium-term objectives, sector oversight, development of model contracts and regulations, assessment of contractual terms and conditions, financial modeling, and inter-institutional coordination. Specific activities financed through Subcomponent B1 are detailed in the following paragraphs.

Activity B1.1. Gas sector development framework

75. One of the key pillars of the proposed project is to provide TA and capacity building to the MoMP and AOGRA aimed at developing a robust framework to support sustainable gas sector development over the medium to long term. Activity B1.1 supports TA to the MoMP to (a) develop an institutional, legal and regulatory, and contractual framework for the gas sector and (b) enhance its capacity to discharge its designated functions related to sector development and oversight as provided in the new Hydrocarbons Law.

76. The specific details of these activities are as follows:

(a) Provide expert support to the MoMP to enhance its capacity to discharge its designated functions related to the development of sector policy; sector strategy and oversight; development, benchmarking, and assessment of policies and contractual terms and conditions; investment promotion; and inter-institutional coordination (particularly with AOGRA).

(b) Provide expert support to the development of a private sector-enabling regulatory, contractual, and fiscal framework based on international benchmarks and standards. Specifically, this activity will address the drafting of contract templates and regulations (institutional, commercial, technical, and E&S) for the hydrocarbons sector in coordination with AOGRA as provided for in the new Hydrocarbons Law (2018).

Activity B1.2. Sustainable administration and management of the MoMP

77. The activity will finance advisory services to and building the capacity of the MoMP to develop its human resources, including its Gender Unit, and facilitate the development and sustainability of gender-balanced staff and skills, as established in 2018 Mining Sector Road Map. Activities under this subcomponent will be aligned with the ministry's participation in the Tackling Afghanistan's Government HRM and Institutional Reforms (TAGHIR) (P166978) Program.

78. The specific details of these activities are as follows:

(a) Development and implementation of human resource capacity-building program(s), aimed at facilitating the development and sustainability of technical and managerial staff and skills at the MoMP and AOGRA, including initiatives such as the establishment of a young professionals' program to provide employment and training opportunities to young and talented women and men.

(b) Technical advice to the Gender Unit of the MoMP to implement the existing GoA gender policy within the ministry to ensure gender equity in the recruitment and management of its staff, including the preparation of an action plan based on the policy.

Activity B1.3. Building institutional capacity at MoMP for the E&S management of the sector

79. This activity will strengthen institutions, systems, and tools and build capacity in the MoMP for the E&S management of the extractive sector, incorporating citizen engagement and gender sensitivity and implementing a grievance redress mechanism (GRM).

80. This, together with several activities under Component A, will support the project's compliance with the ESF and building the longer-term capacity of government institutions to manage the E&S impact of the gas sector. Specific activities include:

(a) Establishment, operationalization, and training of an E&S Unit within the MoMP;

(b) Design and implementation of an E&S Management system (with a long-term objective to link to the Transparency Portal);

(c) Development of a code of conduct for resource developers to implement GBV prevention in the extractives sector (which includes support to the Gender Unit of the MoMP);

(d) Establishment and implementation of GRMs related to gas infrastructure development and for broader implementation of the AGASP, including capacity building, training, and social mobilization activities for GRM Committee members, relevant communities, and the relevant ministries; and

(e) Implementation of the Stakeholder Engagement Plan (SEP) for the project, including the development and implementation of citizen engagement and social accountability initiatives to ensure that stakeholders are better informed of sector development issues.

Activity B1.4. Strengthening transparency and accountability of the extractives sector

81. The objective of this activity is to support the GoA in its implementation of the AEITI. Direct support will be provided to the AEITI MSG through the AEITI National Secretariat housed within the MoMP, to deliver on the reporting requirements under EITI, addressing of the remaining corrective actions, successfully undergoing revalidation, and mainstreaming transparency and accountability into sector governance. Ongoing funding to AEITI, currently provided under the Fiscal Performance Improvement Support Project (FSP, P159655), will be reallocated to other activities within the project once the AGASP becomes operational.

Subcomponent B2. Strengthening Regulatory Compliance and Monitoring of Gas Sector Activities (US$2.5 million) (Beneficiaries: AOGRA)

82. Sector oversight, policy, and strategic functions remain within the remit of the MoMP, whereas responsibility for regulatory and contractual compliance functions has been devolved to the newly established AOGRA. The objective of this component is to strengthen AOGRA's capacity to discharge its functions and responsibilities as set out in the new Hydrocarbons Law. This subcomponent will finance TA for, and building capacity of, AOGRA to carry out its mandate, including:

(a) Support for the operationalization of AOGRA to discharge its designated functions and responsibilities related to regulatory and contractual oversight of hydrocarbons sector value chain investments and

(b) Expert advisory support to implement the Administrative Institutional Regulation that operationalizes the roles, responsibilities, functions, and processes of the MoMP and AOGRA.

COMPONENT C: Project Management (US$4 million)

83. This component will provide support for project management, in accordance with the World Bank's fiduciary and other guidelines, including financing incremental operating costs (IOCs), equipment,

training on fiduciary and project management issues and project audits, and engagement of technical advisers to support project performance monitoring and planning. This component will also finance the cost of recruiting a project management support firm (PMSF) to support the MoMP in the effective management and implementation of the project, as well as costs associated with 'project implementation staff'.[13] The firm will provide on-the-job training and capacity building to project and ministry staff.

Table 3. AGASP Indicative Project Costing Table

Project Activities	US$, millions	Beneficiary/ Implementing Entity
COMPONENT A: Sustaining Gas Supply	**35.20**	
Subcomponent A1. Gas Infrastructure	**31.95**	
A1.1. Procurement of equipment and technical assistance for the construction, operations, and maintenance of the new SMPL	**13.25**	
(a) Equipment for construction of SMPL	6.30	AGE/MoMP
(b) Pre-construction surveying and development of a detailed design and engineering	1.75	AGE/MoMP
(c) QA/QC and supervision engineering for the construction, O&M of the SMPL, including ESIA/ESPM/RAP preparation	2.40	AGE/MoMP/AOGRA
(d) Capacity building and implementation support to monitor and report on the implementation of ESMPs associated with the SMPL	1.80	MoMP/AGE
Contingency (pipeline construction cost)	1.00	AGE/MoMP
A1.2. Procurement of amine plant and technical assistance for the O&M of gas field facilities	**16.45**	
(a) Procurement, installation, commissioning, and O&M of a new natural gas desulfurization amine plant in the Yatimtaq gas field	13.25	AGE
(b) Procurement and installation of metering equipment and SCADA systems	1.20	AGE
(c) TA and on-the-job training for AGE personnel to optimize, operate, maintain, and control the gas pipeline and field facilities, including gathering, dehydration, compression, and processing	2.00	AGE
A1.3. Technical assistance and on-the-job capacity building to AGE on Yatimtaq gas field	**2.25**	
(a) Capacity building and technical assistance to prepare and assess field development plans, focusing on the Yatimtaq gas field	1.50	AGE
(b) Capacity building and implementation support to prepare, monitor, and report on the implementation of ESMPs at Yatimtaq gas field (as required)	0.75	AGE
Subcomponent A2. Tendering Totimidan Gas Block	**3.25**	
(a) Expert advisers—technical, legal, financial, and E&S—for the preparation and implementation of the international tender for the Totimaidan gas block	1.00	MoMP

[13] While the project may rely on individual consultants to support the client on the technical activities, at this stage it is expected that very few 'project implementation staff' will be procured as consultants. Rather the project is expected to rely on ministry staff for project implementation (financial management [FM], procurement, E&S, M&E, and so on) to the extent feasible. To date, the project has procured a project coordinator and several E&S specialists to support the project. Is it anticipated that the E&S function will eventually fully migrate to the civil service to ensure the sustainability of capacity built at the MoMP. There is currently a budget allocation of US$500,000 for project implementation staff to be financed through Component C on project management.

Project Activities	US$, millions	Beneficiary/ Implementing Entity
(b) Capacity building and implementation support to monitor the contractual and regulatory compliance associated with the Totimaidan gas block	1.50	AOGRA
(c) Capacity building and implementation support to monitor and report on the implementation of ESMPs associated with gas field development activities at Totimaidan	0.75	MoMP
COMPONENT B: Strengthening Gas Sector Governance	**13.30**	
Subcomponent B1. Strengthening the MoMP's Capacity to Manage the Gas Sector	**10.80**	
B1.1. Gas sector development framework	**3.50**	
(a) Provide expert support to the MoMP to enhance its capacity to discharge its designated functions	1.00	MoMP
(b) Provide expert support for the incremental construction of a private sector-enabling regulatory, contractual, and fiscal framework	2.50	MoMP
B1.2. Sustainable administration and management of the MoMP	**1.50**	
(a) Human resource capacity-building program for the MoMP (young professionals' program)	1.00	MoMP
(b) Support to implementation of GoA gender policy within the MoMP	0.50	MoMP/Gender Unit/AOGRA
B1.3. Building institutional capacity at MoMP for the E&S management of the sector	**3.30**	
(a) Establishment, functioning, and staffing of an E&S Unit within the MoMP	1.00	MoMP/E&S Unit
(b) Design and implementation of an E&S Management system	1.00	MoMP/E&S Unit
(c) Preparation of a code of conduct for resource developers to implement GBV prevention in the extractives sector	0.30	MoMP/Gender Unit
(e) Development and implementation of citizen engagement and social accountability initiatives (SEP)	1.00	MoMP/E&S Unit
B1.4. Strengthening transparency and accountability of the EI Sector	**2.50**	
(a) Support to implementation of AEITI	2.50	MoMP
B2. Strengthening Regulatory Compliance and Monitoring of Gas Sector Activities	**2.50**	
(a) Support the operationalization of AOGRA to discharge its designated functions and responsibilities related to regulatory and contractual oversight of hydrocarbons sector value chain investments and activities	2.00	AOGRA
(b) Advisory services to implement the Administrative Institutional Regulation that operationalizes the roles, responsibilities, functions, and processes of the MoMP and AOGRA	0.50	AOGRA
COMPONENT C: Project Management	**4.00**	
PMSF	2.00	MoMP
Other operating costs	2.00	MoMP
Project Total	**52.50**	**MoMP**

C. Project Beneficiaries

84. The direct project beneficiaries will include (a) government agencies, including the MoMP and its key departments who will benefit from TA and capacity building from the project; (b) regulatory agencies such as AOGRA; (c) civil society organizations (CSOs) such as AEITI and its MSG; and (d) AGE, regarding natural gas development and supply.

85. The indirect beneficiaries of the project will include the following:

(a) Electricity consumers supplied by the North-East Power System (NEPS), which includes Kabul, Mazar-e-Sharif, and Jalalabad, enabling access to more consumers throughout the system and eliminate load shedding.

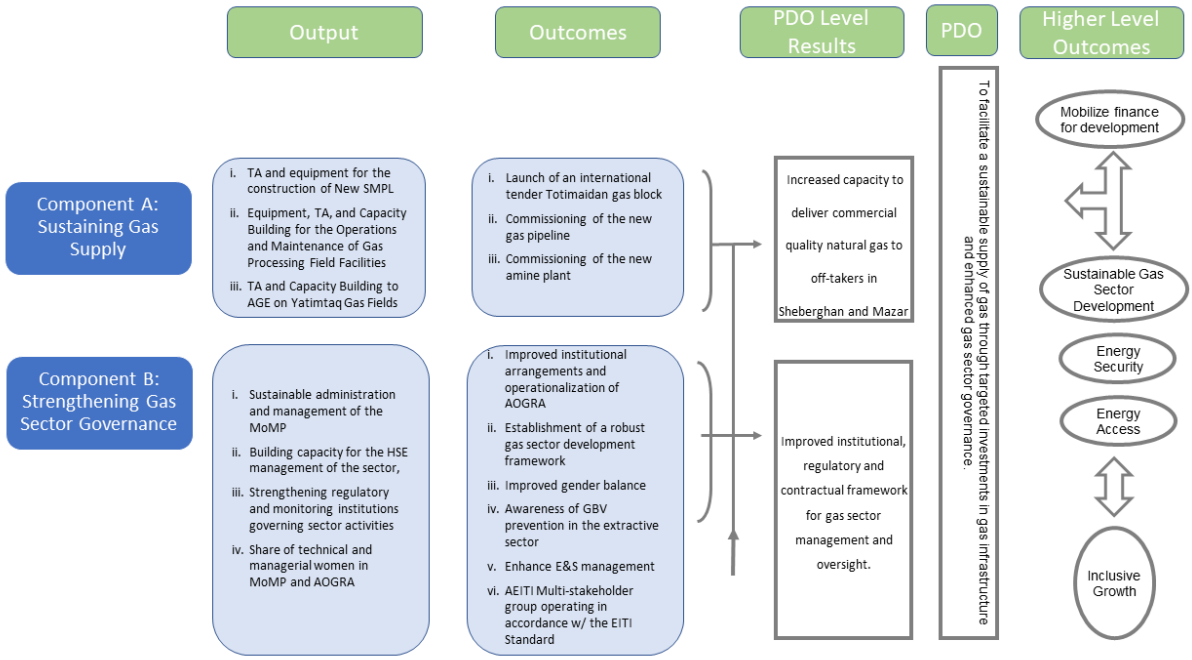
(b) Other related government agencies including (a) Ministry of Commerce and Industries for harmonization of upstream and downstream gas regulation, and (b) MEW for increased generation capacity.

(c) License holders and investors such as those investing in the Mazar and Sheberghan IPPs, who will benefit from an improved regulatory and investment environment and strategic implementation of improved infrastructure and energy access

D. Results Chain

86. The PDO is to facilitate a sustainable supply of natural gas through targeted investments in gas infrastructure and enhanced gas sector governance. The theory of change for the project is relatively straightforward. To achieve a sustainable supply of gas to the Mazar and Sheberghan IPPs, there are two sets of activities that are necessary: (a) the development of gas infrastructure and increased gas supply for the IPPs and other existing off-takers and (b) enhanced gas sector governance, by strengthening the institutional and regulatory environment. The first set of activities is aimed at creating the conditions to enhance viability of specific investments in the gas and energy sectors and building the capacity within the Government to manage those investments (Component A). The second set of activities takes a much wider view of the gas sector and is aimed at consolidating improved sector management and governance capacities by updating the policy and regulatory framework, strengthening capacity in all the main aspects of public sector management and regulation of the gas sector, strengthening transparency, and strengthening E&S management of the sector (Component B). Figure 2 shows the envisaged theory of change moving from main activity areas to project inputs to key project outcomes to long-term (sustainable) outcomes.

Figure 2. AGASP Results Chain



E. Rationale for Bank Involvement and Role of Partners

87. The World Bank is bringing to the gas sector a scalable, proof-of-concept approach for the use of domestic natural gas for domestic power generation and for improvement of energy access and energy security. This approach creates the conditions for the sustainable supply of natural gas for the Sheberghan and Mazar IPPs, by attracting private investment for gas sector development. It will improve sector governance and institutional capacity to ensure transparent, nondiscretionary regulatory oversight, and will strengthen gas processing and transport infrastructure to deliver commercial-quality natural gas to end-use IPPs and current off-takers.

88. The World Bank has provided support to the GoA in the mining sector since 2005, starting with some early analytical work, followed by preparation and implementation of SNDRP1 (2006–2012) and SDNRP2 (2011–2017). In the last two years since SDNRP2 closed (March 2017), the World Bank team has worked with the Government to better understand existing gaps and identify priorities for this next stage of support. The successful passage of the Government's road map for sector reforms through the HEC was a positive culmination of the World Bank's engagement during that period and the basis for further support.

89. As discussed elsewhere in the PAD, the GoA has entered into preliminary agreements with two private enterprises to develop IPPs. Realization of these projects is important in two ways. First, they would supplement existing electricity supply sources (primarily imports) to increase reliability and meet growing demand. Second, they would help anchor gas sector development, providing an initial base market for new gas supply and a model for private participation in integrated gas-to-power projects.

Role of Partners

90. The World Bank is a lead development partner in the sector, and as such its continued engagement is critical to drawing in additional assistance from other development partners for sector development. While, in the past there was a high level of engagement by other development partners, this has reduced over the last two years, following the departure of TFBSO in 2014 and the closing of SNDRP2. Other active development partners in the sector have included the ADB, United Kingdom Department for International Development, USAID, and German Agency for International Cooperation (*Deutsche Gesellschaft fur Internationale Zusammenarbeit*, GIZ).

91. The USAID Sheberghan Gas Development Project was to design a road map for development of the Sheberghan gas fields in northern Afghanistan to address the country's critical power shortage. Under this project, USAID supported drilling/rehabilitating of up to three gas wells; conducted a gas reservoir study to certify existing/producing field reservoir gas quantity, pressures, and quality; and assisted the GoA to partner with the private sector to design, build, and operate a central, expandable gas processing (sweetening) plant and a system to transport raw gas from wells to the processing plant. The project also encouraged the private sector to construct and operate a series of gas-fired power generation plants, starting with an initial 200 MW plant. These power plants would be built, owned, and operated as IPPs. AGE would play a major role in supplying gas to the IPPs in collaboration upstream with private sector gas E&P companies, mid-stream with private sector processing companies, and downstream by delivering processed gas (fuel) to the IPP. The indicative size of the power plant required greater gas reserves than available at the time and as a result the project did not progress to conclusion. The current Mazar IPP capitalizes on much of the inputs provided by USAID, beginning with a scalable proof-of-concept approach.

92. Assistance from the ADB in the gas sector has largely drawn down and included (a) Secretariat services for the development of the legal and institutional framework of the Tajikistan-Afghanistan-Pakistan-India Project, since 2002, and more than US$4 million in TA; (b) formulation of a 20-year (2015–2035) Afghanistan Gas Sector Master Plan and Implementation Strategy (with sequencing of priority investment projects); (c) rehabilitation of eight wells for Sheberghan gas fields, including rehabilitation of six wells which are completed and the capacity gas has arrived to 1.35 million m^3; and (d) rehabilitation of the second part of the Sheberghan gas fields (two additional wells).

93. TFBSO's extractive industries program was focused on working with the Government and local communities to support the development of Afghanistan's mineral and energy industries. TFBSO's energy programs included support to relevant Afghan ministries for the tender and contracting process and programs focused on upgrading or rehabilitating the existing production or distribution capabilities.

94. The GIZ program Promoting Good Governance in the Extractive Sector in Afghanistan supports increasing state revenues, promoting investment, and fighting corruption in the extractives sector (focusing primarily in mining). To promote female participation in the sector, the program has also financed 13 scholarships for Afghan women. The program further supports the AEITI to promote transparency and fight corruption.

95. The MoMP has reestablished its Donor Coordination Forum aimed at (a) ensuring that donor activities avoid duplication and are aligned with the Government policies and priorities, (b) making more efficient use of donor funding by the extractive industry stakeholders, (c) sharing and collaborating on donor research and deliverables to facilitate further development within the extractive industries, and (d) ensuring a better-informed civil society. The World Bank, through SDNRP2, has provided support to this activity in the past and will continue to do so under the proposed AGASP.

F. Lessons Learned and Reflected in the Project Design

96. The design of this project has benefited from lessons learned from the World Bank's support to Afghanistan's extractive sector since 2003 (SDNRP1 and SDNRP2), as well as the collective experience of implementing hydrocarbon reform projects from other parts of the world (Africa and Central Asian country experience are especially applicable). Specific lessons learned incorporated into this proposed project are detailed in the following paragraphs.

97. **Importance of government ownership.** A high-level of government ownership is essential for implementation success, through direct participation of the recipient at the technical, managerial, and political levels. Since 2003, the World Bank has had the benefit of developing a strong partnership with the MoMP that has contributed to the implementation of SNDRP1 and SDNRP2 and the design of the proposed project. It is anticipated that this close relationship will be maintained into the next decade. In addition to this, the World Bank's engagement and policy dialogue with key actors within AGE and AOGRA has intensified in preparation for this project. The World Bank has worked with several new high-level government offices as part of SDNRP1 and SDNRP2 implementation, including Cabinet, the HEC, and the Office of the President and will leverage these relationships to continue the required levels of cooperation, consultation, and information exchange for project success.

98. **Reinvigorated approaches are required for sustained capacity.** Changing leadership and shifting capacity of the MoMP staff, evolving priorities, and departure of significant development partners and assistance that is delayed or does not align with resource investment requirements have resulted in diminished institutional memory, inconsistent technical know-how, and loss of critical sector improvements. Programs to date have provided assistance to build institutional and staff capacity across a variety of technical areas, but these gains have been difficult to sustain. Established data and physical repositories and catalogued libraries have been built, only to be lost in the wake of each departing MoMP management team (at least eight since 2003). The MoMP and other government agency staff changes, in combination with unevenly funded assistance programs, have not resulted in a sustained cadre of sector professionals or a sustained capacity-building framework in which such cadre may develop. Going forward the proposed project will support new approaches for building capacity within the sector that (a) rely less on international experts and (b) emphasize the role of the MoMP and other government agencies in project implementation. This latter point supports the GoA's road map in which several new regulatory and oversight approaches are introduced to be conducted outside the MoMP. For the Government, the project will seek to leverage the MoMP's participation in the TAGHIR program, which aims to improve the capacity and performance of priority line ministries and independent agencies—for its staff in and outside Kabul.

99. **Importance of grounding TA in concrete investments.** One key lesson learned from implementation of SDNRP2 and implementation of other World Bank extractives projects is that TA and capacity building is impactful and sustainable when grounded in the development of concrete projects including field services work, survey activities, specific contract monitoring, and project management activities. To strengthen the existing investments and catalyze new ones, there is a need to ensure that capacity building is based on tangible sector development activities.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

100. The project's implementation arrangements are aimed at enhancing project management, building sustained capacity and ownership within the beneficiary agencies, ensuring a high degree of technical input, and facilitating coordination within the MoMP and among all relevant government agencies.

101. **MoMP.** The project will be managed by the MoMP, which will be responsible for the overall coordination and implementation of the project, including retaining full fiduciary responsibility and oversight (procurement, FM, monitoring and evaluation [M&E], and so on) for support provided to other beneficiaries such as AGE and AOGRA (see additional details in paragraph 105). The MoMP will be responsible for the drafting of annual work programs and budgets of the project, procurement, FM, E&S safeguards (where relevant), and M&E of the project's progress. And where relevant, the MoMP will coordinate closely with other beneficiary agencies (that is, AGE and AOGRA) on these activities. The MoMP will provide updates and inputs to progress implementation reports for the project, which will be finalized by the beneficiary agencies on a quarterly basis in a format and content acceptable to the World Bank.

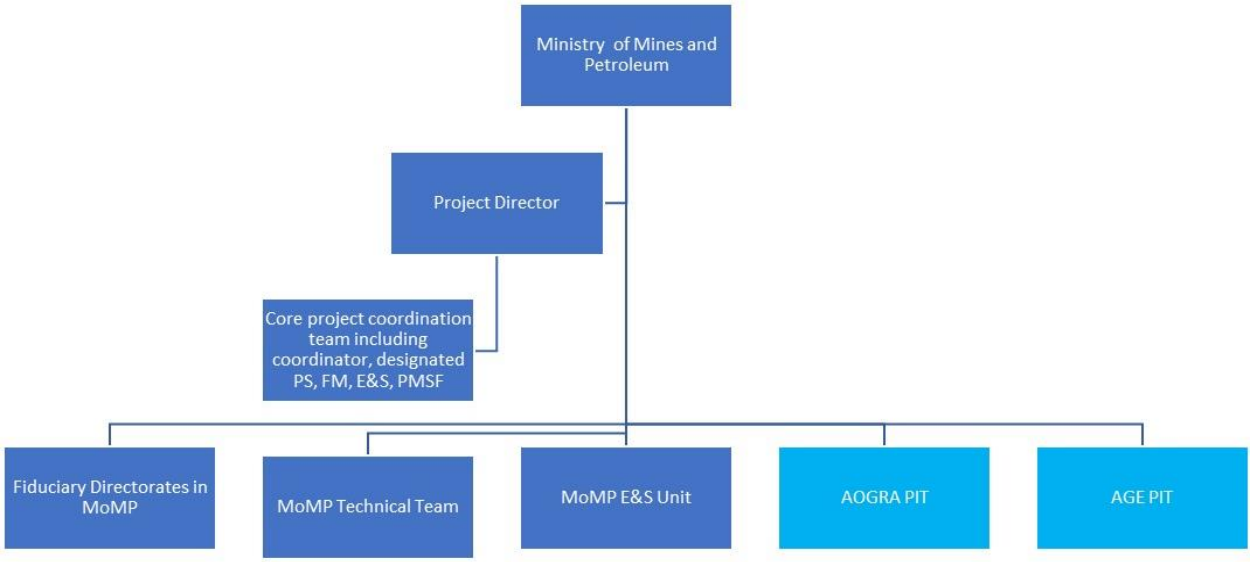
102. There will not be a separate Project Management Unit (PMU) established for the AGASP, but rather the project will rely on the MoMP's own institutional setup and relevant departments for project implementation and fiduciary responsibility. For instance, the Procurement Directorate (PD) of the MoMP will be responsible for overseeing all procurement activities under the project and the FM directorate will do the same. However, it is expected that a small core team of ministry staff will be established, who will be assigned from each of these directorates, to support the various project management and coordination functions. This team (Project Management Team) should include a senior project director (at a Deputy Minister [DM] level), a project coordinator, procurement and FM specialists, an M&E specialist, and one Environmental and one Social specialist. The minister has appointed a DM to oversee the project, as Senior Project Director. A project coordinator has also been recruited to support the DM in overseeing the day-to-day aspects of project management and coordination. It is expected that the recipient will take all reasonable measures to build a strong and sustainable work force for implementation of the project and to limit, or when unavoidable, mitigate, to the extent possible, the adverse impact of change of staff on the successful implementation of the project and the achievement of its objective.

103. **AGE and AOGRA Project Implementation Teams (PITs).** Given the scope of support to other beneficiary organizations (including AGE and AOGRA) under this proposed project, each organization is expected to establish a small dedicated PIT. The PIT will be responsible for overseeing all technical aspects

of project implementation related to their respective activities. A focal point or team lead should be appointed within each of these organizations to lead the PIT and is expected to work in close collaboration with the implementation and project management structure set up under the MoMP to ensure efficiency of the procurement process. Fiduciary responsibility for activities implemented within each of these organizations will rest with the MoMP.

104. The MoMP will sign a memorandum of understanding (MoU) with each of these agencies outlining the process for transferring the ownership of goods procured through the project (that is, pipeline equipment, computer equipment, and so on); the process of payment of consultants/invoices; process of procurement; and so on. More specifically, the MoU will provide details on how the transactions between the Government and AGE will be accounted for. For instance, as a common practice in Afghanistan, the Government recognizes the goods and services delivered to an SOE under a Grant as the Government's investment in the SOE. The MoU will stipulate at what point the assets will be transferred to AGE, for example, at the time of delivery of equipment and gas infrastructure, and which entity will be responsible for safeguarding the assets. Similar details are to be included in the Project Operations Manual.

Figure 3. AGASP Implementation Arrangements



Note: PS = Procurement Specialist, FM = Financial Management Specialist, PMSF = Project Management Support Firm

B. Results Monitoring and Evaluation Arrangements

105. M&E will be carried out by the MoMP on the basis of the indicators and milestones developed in the Results Framework. Where applicable, M&E will include gender-disaggregated data. Strengthening client capacity for M&E for the sector will be an integral part of the project to enable the relevant institutions to keep track of E&S safeguards implementation and compliance.

106. The MoMP will have overall responsibility for M&E of the project subcomponents and activities in accordance with the indicators and benchmarks included in the Results Framework. The other

beneficiary agencies will be responsible for collecting, analyzing, and supplying the indicator data relevant to the project components/activities under their implementation the relevant ministry. The mechanism of feeding the indicator data into a centrally managed system in the MoMP will be also detailed in the Project Operations Manual. The PMSF procured under the project will provide support on M&E, including data collection from the various consultancies procured under the project and analysis on how key targets set out in the Results Framework and other project plans can be met on time.

107. In addition, as one of the core activities under Component A, support will be provided to AGE to procure a SE to provide supervision, Quality Assurance (QA), and technical support for the construction of the SMPL. Supervision and QA of its construction represents an important M&E-related activity. Similarly, SE and E&S monitoring firms will be procured for other activities under the project and will play an important role in M&E. It is expected that the quarterly monitoring report from these firms will be shared with the World Bank for review.

108. No later than 45 days after each quarter, the MoMP will submit to the World Bank the consolidated quarterly progress reports covering all project activities, including a procurement and financial summary report. Biannual reviews, the first one to take place six months after effectiveness, should provide detailed analysis of implementation progress toward achieving the PDOs and include evaluation of the FM and a post-review of procurement aspects.

C. Sustainability

109. Drawing on lessons learned from SDNRP2, the project has sustainability built into its design, including through its implementation arrangements. Unlike projects in the past which relied on a separate PMU, the AGASP will be implemented and managed directly through the MoMP, making use of staff within the ministry to directly manage the project on FM and procurement, as well E&S aspects, in particular. To enhance sustainability after project close, the PMSF will be procured to build the professional capacity of staff within the MoMP to manage projects relevant to sector development. In addition to this, the project will leverage beneficiary institutions' involvement in TAGHIR (P166978) to foster staff stability.

110. From a technical perspective, sustainability after the project closes will come from substantial capacity building and on-the-job training for beneficiaries in the course of implementation of concrete project-related activities, such as the construction and O&M of the SMPL or the development of contract templates and regulations in anticipation of the international tender for development of the Totimaidan gas block. It is expected that immediate and continuing work demands from the implementation of project activities, construction of the SMPL, procurement and installation of the new amine plant, the drafting of contracts and regulations - and the need to sustain such activities, will enhance the sustainability of capacity building efforts.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis

111. In assessing the economic returns described below in Annex 2, it should be noted that the primary rationale for supporting gas supply to the Sheberghan and Mazar IPPs does not rest on providing a least-

cost supply of power to electricity customers. Arguably, additional imports from neighboring countries would be a less costly means of meeting electricity demand growth. Continued reliance on imported electricity, however, carries risks both regarding security of supply and security of cost. Efforts to diversify electricity supply through the development of domestic resources offer a tangible if not strictly measurable benefit.

112. A similar rationale applies to the role of the IPPs in anchoring the development of domestic gas resources. Without a reliable supply of fuel, gas-based industrial and commercial initiatives are unlikely to materialize, while without a guaranteed market, there is little incentive to invest in developing domestic gas resources. By supporting the investments needed to ensure sustained gas supply to the IPPs currently under development, the AGASP provides a critical link needed to ensure their viability.

113. The investment and TA components of the proposed project will 'de-risk' the proposed IPP investments and will increase security of energy supply through reduced reliance on electricity imports; promote the development of indigenous gas resources; and increase the availability of grid electricity to meet growing demand for a robust and reliable source of power for households, institutions, and commercial and industrial enterprises. The gas-fired IPPs are intended to increase and diversify electricity supply and serve as an anchor off-taker for domestic gas resources. The current project will ensure, through its investment component, that sufficient gas is available to support the two IPPs during their initial operations and help ensure, through TA, that the Afghanistan gas sector has the capacity to further develop the gas resources to serve longer-term demands for power generation. A financial analysis for the project was conducted during the due diligence process.

114. Development of the country's natural gas resources is a logical step toward economic growth and poverty alleviation. A commercially viable gas sector will displace incremental demand for imported fuel including oil, and diesel. In the longer term, access to a readily available and affordable supply of natural gas can serve as a viable alternative to the environmentally damaging use of coal and biofuels for household heating and cooking and ensure a viable supply of electricity based on domestic resources. However, if these benefits are to be realized, it will be necessary to attract investment on a significant scale, which will in turn require strong institutional, legal, contractual, and regulatory framework for private-investment-led sector development. The TA activities included in the project will help prepare sector personnel and institutions to deal with the challenges ahead.

115. Securing adequate gas supply to meet the needs of the IPPs will require investment matched with prices that yield positive returns to investors. An economic analysis for the Sustaining Gas Supply Component of the project was undertaken with three main objectives to (a) review the total costs, both over the medium and the long term, of securing an adequate supply of gas to meet the needs of the IPPs; (b) assess the effect of these cost estimates on the economic viability of the IPPs; and (c) assess the economic viability of the proposed investments in production, field, processing, and transport facilities that are required to allow the Government to meet its obligations under Gas Supply Agreements (GSAs) with the IPP developers.

116. An assessment was carried out of the costs and benefits of providing the necessary gas supply to the two power plants, including gas E&P, gas processing, and pipeline transport. The assessment calculated the investments required over the duration of the Mazar IPP GSA (that is, through 2040), the associated O&M expenditures, and the incremental volumes of gas made available to determine a unit

cost of gas supply. Specific investments needed for near-term gas supply include the government and/or private sector drilling new wells at the Yatimtaq field, optimizing operations of the existing field facilities (including the amine plant), ensuring adequate processing capacity by installing a new amine plant, and completing a pipeline link from the Sheberghan fields to the IPP at Mazar-e-Sharif.

117. Two discrete time periods were examined. The first to 2023 considered the costs associated with gas from the existing wells, where the only incremental costs involve completion of a gas pipeline from Sheberghan to Mazar and upgrading and expansion of gas processing facilities. Because most of the costs assumed to date in the development of existing fields are sunk, the incremental cost of securing these supplies is approximately US$15 per million cubic meters (Mcm) (allowing for a residual value of the pipeline and processing plant at the end of the period). The existing wells could meet the full requirement of both the IPPs as well as the demands of existing gas off-takers through 2023 and would continue to contribute—albeit at decreasing rates—to the total supply until their productive capacity becomes exhausted by around 2026.

118. Current estimates based on projected demand and on the existing field development plan indicate that beginning in 2023, it will be necessary to bring new wells into production to meet the needs of the IPPs as well as the existing off-takers (a total of approximately 365 million m^3 per year). The existing development plan is based on information gathered before the Soviet departure from Afghanistan in 1988. An updated development plan is now required on the basis of recent data collected on the Yatimtaq wells. This new field development plan is contemplated among Activity A1.3 of the project. Once the field development plan is completed, it will be possible to better determine the number, sequencing, location, and cost of the new wells. The plan will also help determine the optimal source of financing for these activities.

119. Yatimtaq has sufficient resources to fulfil these supply needs for perhaps an additional nine years—until 2032—but by 2030, at the latest, major investments will be needed in field exploration and development to sustain the currently contracted supplies.[14] The capital and operating costs of the necessary wells, surface facilities, and exploration and development activities and the residual cost of the pipeline and processing facilities necessary to maintain the annual supply requirement were estimated over the remaining period of the IPP contract. A resource depletion cost of US$50 per Mcm was added as well as a return to private capital of US$25 per Mcm. It is reasonable to expect that future exploration and development investment costs will be assumed by the private sector. The resultant estimate of the cost of future gas supplies was US$128 per Mcm.

120. Next, the projected costs of gas supply for the existing off-takers, including the two IPPs, were incorporated into the economic analysis of the Mazar gas-to-power and the Sheberghan gas-to-power projects. In the short term, the economic cost of gas was assumed to be US$65 per Mcm, which included an imputed resource depletion cost of US$50 per Mcm mentioned earlier. In the longer term, the economic cost of gas was assumed to be US$150 per Mcm—a figure somewhat higher than the calculated cost but still within the range suggested by other expert estimates.[15] The higher cost figure was adopted

[14] The developer of the Sheberghan IPP has already expressed interest in extending the initial five-year contract beyond its current term, likely replacing the planned mobile turbine with a more permanent installation. The analysis assumes that the Sheberghan IPP would continue to operate or would be replaced by a similar facility for a further 20 years.

[15] USAID. 2013. *Amu Darya Gas Blocks - Summary of Gas Supply, Constraints, and Pricing*; Mc Daniel and Associates Consultants Ltd. 2016. *Resources Report Gerquduq, Khoja Gogerdak, and Yatimtaq Fields Afghanistan*.

because, while the costs of well drilling and expected output per well were based on tested production flow rates for the existing Yatimtaq wells, as it becomes necessary to develop new wells and new fields, there is scant information on what their costs and productivity may be. In addition, various analysts suggested that as gas output continues to grow, amine treatment may not suffice to meet the increasing desulfurization needs and additional capacity may need to be considered. Accordingly, the higher figure was adopted for the economic analysis of the two IPPs.

121. The cost-benefit analysis of the two IPPs was based on a comparison of the gross increase in consumer welfare associated with incremental electricity supply with the full capital and operating costs of securing that supply. The economic internal rate of return (EIRR) analysis of the Mazar and Sheberghan projects found that both projects were economically viable under the assumed economic costs for gas. The EIRR for the Mazar project was estimated at 11.3 percent and the net present value (NPV) at US$44.3 million. The EIRR for the Sheberghan project was estimated at 15.5 percent and the NPV at US$14.5 million. Switching value analysis indicated that the Mazar project would continue to be viable at long-term gas prices up to US$208 per Mcm while the Sheberghan project would be viable even at gas prices of US$359 per Mcm.

122. An integrated analysis was also carried out that looked at the proposed gas sector developments and the IPPs as a single project. Investment and operating costs of gas supply were combined with the investment and operating costs of the IPPs, excluding the cost of gas. Benefits were estimated as the gross increase in customer welfare attributable to the incremental power supply. The EIRR of the combined project was 18.3 percent, and the NPV totaled US$120.4 million.

123. The full detail of the gas economic analysis, including the estimation of the costs of gas production and the estimates of the EIRR of the integrated gas/IPP project is included in annex 2 of the PAD.

Fiscal Impacts

124. Positive fiscal impacts of gas sector development will accrue from at least three sources:

- Revenue sharing on the sale of new gas production stemming from financial flows from production sharing agreements (PSAs) as production increases up to the requirements to supply existing and prospective off-takers of gas, including additional gas-based IPPs
- Profits taxes on gas suppliers and IPP project companies
- Business receipts tax (BRT) (or value added tax [VAT] introduced) on incremental sales of gas and electricity

125. The positive fiscal impacts associated with gas supply to the two related IPP projects, Mazar and Sheberghan, have been quantified in their respective PADs. Table 4 summarizes the findings. The table also shows, however, the negative fiscal impacts associated with the two IPPs which stem from DABS' losses on electricity sales, and the GoA's obligation to cover the cost of gas supplied to the IPPs over and above that included in the DABS tariff.

Table 4. Fiscal Impacts of Mazar and Sheberghan IPPs

Fiscal Impact	Mazar		Sheberghan**		Total	
	Negative	Positive	Negative	Positive	Negative	Positive
Unrecovered Cost of Gas	-48.89		-5.24	-	-54.13	-
Royalty Received on Gas Sales		40.39	-	3.64	-	44.03
DABS Losses on Power Sales	-140.50		-21.29	-	-161.78	-
Income Tax Witholding		9.89	-	2.96	-	12.85
Business Receipts Tax (BRT)		12.89	-	0.47	-	13.36
					-	
Total	-189.39	63.18	-26.53	7.06	-215.92	70.24
Net	-126.21		-19.46		-145.67	
Net per year	-6.31		-3.89		-10.20	

** Note that Sheberghan impacts are limited to the 5 year term of the PPA between the GoA and the Developer

126. The most significant negative fiscal impacts are the losses that DABS, the state-owned electric utility, incurs on power sales, which are exacerbated by DABS' own operating inefficiencies and by a failure on the part of the GoA to set electricity tariffs at cost recovery levels. Table 5 shows the impact of a 3 percent per year increase in electricity tariffs on the net fiscal impacts of the two IPPs. The annual negative fiscal impacts of the two projects drop by almost US$80 million. The net negative impacts of Mazar are virtually eliminated. If DABS were to also successfully address its technical and commercial losses, which currently stand at 35 percent, and bring them into a more normal range of 15 percent to 20 percent, the negative fiscal impacts would be more than outweighed by the positive effects.

Table 5. Fiscal Impacts of Mazar and Sheberghan IPPs

Fiscal Impact	Mazar		Sheberghan**		Total	
	3% Dabs Tariff Increase		3% Dabs Tariff Increase		3% Dabs Tariff Increase	
	Negative	Positive	Negative	Positive	Negative	Positive
Unrecovered Cost of Gas	-48.89		-5.24	-	-54.13	-
Royalty Received on Gas Sales		40.39	-	3.64	-	44.03
DABS Losses on Power Sales	-68.82		-14.61	-	-83.43	-
Income Tax Witholding		9.89	-	2.96	-	12.85
Business Receipts Tax (BRT)		12.89	-	0.47	-	13.36
Total	-117.71	63.18	-19.85	7.06	-137.56	70.24
Net	-54.54		-12.78		-67.32	
Net per year	-0.27		-2.56		-2.83	

** Note that Sheberghan impacts are limited to the 5 year term of the PPA between the GoA and the Developer

127. It is also useful to put these impacts in context with the overall fiscal profile of the GoA. In 2018, Afghanistan had a fiscal surplus in excess of US$100 million on total revenues of US$4.8 billion. It is also worth noting that in the same year, the Government spent US$1 billion on imports of liquid fuels—equivalent to 13.5 percent of their total imports that year.

128. The above analysis addresses only the fiscal impacts directly related to the two IPPs that are currently under development. As new gas resources are developed and additional supplies come onto the

market, the GoA will benefit. These benefits will be an order of magnitude higher than those associated with the two initial pilot developments.

129. The full detail of the gas economic analysis is included in annex 2 of the PAD.

B. Fiduciary

(i) Financial Management

130. The country FM systems for budgeting, accounting, and auditing will be used throughout the project implementation. The FM Unit housed within the MoMP will be responsible for project FM matters with support of a PMSF that will be hired within eight months of project effectiveness. The project will use the Financial Management Manual (FMM) that has been developed with the TA from the World Bank. Government budgeting processes will apply, and the project's budget will be a part of the Government's annual budget. The MoF will be responsible for bookkeeping and financial reporting at the central level and for operation of the Designated Account (DA). The FM Unit of the MoMP will be responsible for maintaining the agreed FM arrangements as detailed in the PAD. The project's financial statements will be prepared in accordance with the Cash Basis International Public Sector Accounting Standards (IPSAS) and will be audited by the Supreme Audit Office (SAO), in accordance with International Organization of Supreme Audit Institutions (INTOSAI) auditing standards. The audited financial statements will be submitted to the World Bank within six months of the close of the financial year. Within one month of project effectiveness, the MoMP and the beneficiary agencies (AGE and AOGRA) will sign an MoU to formalize the implementation arrangements including FM.

131. **Disbursement will be report based.** A DA in U.S. dollar will be set up in the central bank (Da Afghanistan Bank [DAB]) to receive funds from the World Bank. Funds will be front loaded in the DA based on six months' cash forecast. The project will submit quarterly interim unaudited financial reports (IUFRs) to the World Bank within 45 days of the close of the semester of the financial year which will form the basis of expenditure documentation and advance. The project will also use the direct payment method of disbursement mainly for large payments in foreign currency.

132. The project FM risk is assessed 'Substantial', and measures have been agreed upon with the MoMP to mitigate the identified risks and strengthen FM capacity. See annex 1 (section I) of the PAD for detailed FM assessment and arrangements.

(ii) Procurement

133. As part of project preparation, a Project Procurement Strategy for Development (PPSD) was developed by the PD of the MoMP for developing appropriate procurement strategies based on market and supplier analysis and other social, economic, legal, technological, and environmental factors that affect the specific procurement activities in the project and capacity of the MoMP for undertaking the procurement of complex items in the project were analyzed. A Procurement Plan, capacity-building plan, and risk-mitigation arrangements are developed as part of the PPSD process. The PPSD would guide the procurement implementation in the project and would be subject to revisions as and when any major change or restructuring is undertaken in the project.

134. The PPSD identified certain procurement activities for which market engagement is essential for attracting quality contractors and consultants, for example, SMPL and amine plant works and supply and installation contracts. Procurement for SMPL design and engineering is in process, with technical specifications for the preliminary list of equipment being prepared. The assessment of equipment to be procured outside of the country is to be determined, and the time required for importation may impact the timeline for completion of the SMPL. The Ministry of Finance will work closely with Customs Department to minimize any potential delay. The procurement strategy includes conducting market engagement activities for mobilizing consultants. The Procurement Plan considered various options available for setting the types of competition suitable for each procurement.

135. Procurement will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers, hereinafter referred to as 'Procurement Regulations', dated July 1, 2016, revised November 2017 and August 2018. The project will be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006. The World Bank's Standard Procurement Documents, Requests for Proposals, and Forms of Consultant Contract shall be used for Open International Competition. All procurement using national procurement procedures will be subject to the National Procurement Conditions detailed in the Procurement Plan and use the agreed Model National Procurement documents for Afghanistan.

136. Procurement will be carried out by PD of the MoMP in accordance with the Procurement Regulations under the New Procurement Framework. Based on the initial procurement capacity assessment of the MoMP, the procurement risk is rated 'High'. The MoMP will be responsible for carrying out procurement for AGE and AOGRA. The PPSD and Procurement Plan prepared by the PD of the MoMP will be followed. Based on implementation of capacity-building and risk-mitigation plans, a further assessment of AGE and AOGRA may be carried out by the World Bank during project implementation to decide on delegating procurement activities to these entities should the need arise. A detailed Procurement Risks Assessment is carried out using the online tool Procurement Risk Assessment and Management System (PRAMS), reviewing different aspects of each implementing entity. Appropriate risk-mitigation efforts drawn from the assessment are included in the PPSD.

137. Advance procurement, if undertaken by any implementing entity, shall follow the provisions for the same under the Procurement Regulations. See annex 1 (section II) of the PAD for detailed procurement assessment and arrangements.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

D. Environmental and Social

138. Significant project activities are located in northern Afghanistan near the existing Sheberghan gas fields in a semi-desert area with a very low population density. The biodiversity of the entire area is very low. The area is nearly barren and does not have any trees. The project area does not contain any threatened or endemic flora or fauna species. The project area is water scarce, and there are no major rivers. The right-of-way of the new gas pipeline of which 44 km has already constructed passes mostly through areas with no people. In one place new gas pipeline passes through a nearby village where some land and assets of eight families at Qasim Abad village has been affected. These eight families have been compensated.

139. **Institutional and implementation arrangements in the MoMP.** The client has limited capacity to manage E&S risks, and as such all activities to be supported under the AGASP will be subject to prior review and approval by the World Bank until adequate capacity is developed. Nevertheless, the MoMP has established an E&S Unit that is staffed with qualified and experienced personnel to oversee contract management of relevant E&S consultants, as well as help manage the E&S risks across the sector. At least one environmental specialist and one social specialist of the E&S Unit of the MoMP will be assigned to support the project, including monitoring and supervision of E&S risks, reporting to the World Bank, and overseeing implementation of Activity B1.3. The project's E&S specialists will (a) support stakeholder consultations; (b) undertake awareness raising among contractors' staff and ensure that contracting firms have adopted adequate E&S and occupational health and safety (OHS) policies; (c) monitor compliance with policies and relevant safeguards documents; (d) supervise, monitor, provide periodical reports; and (e) give feedback on the third-party monitoring (TPM) reports and take corrective actions to improve shortcomings.

140. **Work on improving the country regulatory system.** The AGASP will work on improving the regulatory framework in the gas sector; enhancing cooperation and coordination between relevant agencies (for example, MoMP, NEPA, AGE, AOGRA, Ministry of Labor, Social Affairs, Martyrs, and Disabled [MoLSAD]), and so on; and managing E&S concerns in a joint manner.

141. **Prepared E&S management documents by the AGASP.** The World Bank's review of this project consisted of appraising technical, environmental, social, and OHS information made available by the client, including an Environmental and Social Management Framework (ESMF), Resettlement Framework (RF), Labor Management Procedure (LMP), SEP, the Environmental and Social Audit (ESA) and Ex-post Social Audit (EPSA) for the first 44 km of the SMPL, and an assessment of the E&S and OHS capacity of the client. All the E&S documents listed have been cleared by the World Bank and disclosed in the Ministry's web site. The ESIA, ESMP, and a Resettlement Plan (RP) for the full pipeline and new amine plant will be

prepared and submitted to the World Bank for review and clearance and disclosed before the commencement of any civil works.

142. As mentioned earlier, the AGASP has adopted several E&S management documents. The ESMF responds to the requirements of all applicable E&S standards providing a framework approach, principles, guidelines, checklists, and negative lists for the gas sector.

143. The MoMP has adopted an Environmental and Social Commitment Plan (ESCP) which is referenced in the Financing Agreement.

Environment

144. **Potential risks and impacts.** The project activities have been assessed to have potential environmental risks and impacts proportional to the type and sensitivity of the project. Key considerations include the type of activity undertaken, the area of influence, potential for soil erosion, use and depletion or contamination of surface water and/or groundwater, and impacts to biodiversity including aquatic and terrestrial life. Moreover, OHS of workers and relevant communities at risk from hazards associated with construction sites including the operation of heavy equipment and truck traffic, noise and fugitive dust is always a concern. Based on the appraisal stage assessment of the project, the overall environmental risk for the AGASP is determined to be 'Substantial'.

145. The AGASP will finance investment activities and civil works, which will be further reinforced by TA to build required environmental management capacity. The activities supported by the project will have limited environmental and OHS impacts. However, the subsequent TA downstream outcomes of the project may, if implemented at a later stage, have important environmental and OHS implications. This would be the case whenever and wherever the future gas development activities are implemented, such as the development of the Totimaidan gas block by a private investor/operator, as there could be significant potential short-term adverse environmental and OHS impacts and risks. It is for this reason that Activity B1.3 'Building Institutional Capacity at the MoMP for the E&S management of the sector' is important to ensure regulatory compliance and improved environmental performance. This includes the establishment, operationalization and training of an E&S Unit within MoMP supported by a strong management / monitoring system. The environmental risk rating of 'Substantial' for the project is based on the following:

- The newly planned SMPL and the Amine Unit are expected to have construction and operation stage environmental impacts, safety, and OHS risks. Safety concerns for the workers and local communities (during implementation and operation) represent a challenge for this project, but can be managed if environmental, social, and OHS supervision by trained staff is provided and the proposed ESMP and OHS Plan are adequately implemented.

- The MoMP has limited capacity in managing environmental risks and impacts. There are some concerns over capacity and experience of the MoMP and AGE in managing stakeholder engagement processes, but these could be readily addressed with adequate implementation support, and provisions for such support have been included under Activity B1.3 of the project.

- The current OHS Management Regulation, its implementation, and the awareness and culture of OHS are generally very weak among the Government and the private sector.

- Other TA downstream OHS risks may include risks associated with temporary labor camps to be established by contractors and AGE, including the transmission of communicable and sexually transmitted diseases such as HIV/AIDS; the lack of hygiene and sanitation; the spread of microbial contamination; and problems due to exposure to chemicals and other hazardous wastes.

Climate Mitigation and Adaptation

146. Development of Afghanistan's natural gas resources is a step toward alleviating severe energy poverty and displacing imports of electricity, fuel oil, and diesel. Moreover, as the gas sector develops, and end-use markets grow, domestic gas can serve as a viable alternative to the damaging use of coal and biofuels for heating and cooking across Northern Afghanistan where indoor/outdoor air pollution severely impacts some of the poorest and most vulnerable population segments within Afghan society.

147. The AGASP addresses mitigating the potential uncontrolled venting of methane from gas production and transport. The starting point (baseline) for the AGASP is the new SMPL having an associated positive impact through increased volumes of gas delivered safely to the market (HSE compliance) under modern control, metering and data acquisition systems. As increased capacity to deliver commercial-quality natural gas to off-takers in Sheberghan and Mazar gas supply increases, methane monitoring and mitigation will be reported. Climate and disaster screening has given consideration to moderate exposure to climate and geophysical hazards (which will include drought, extreme temperatures and seismic activity). Climate and disaster resilience for the SMPL infrastructure will be considered in (a) the design and engineering work to be undertaken by the Supervision Engineer and (b) reflected in the corresponding ESIA and ESMP.

Social

148. Considering the social assessment, the overall social risk rating is 'Substantial' for the AGASP at this stage, in view of the TA downstream risks and social implications that may arise when and if TA leads to future gas production activities. Key factors considered are the following:

- Construction of the new SMPL is expected to involve minimal land acquisition impacts (pending completion of design and engineering), while the social impacts of the TA downstream activities are unknown at this stage. The eventual downstream development of the Yatimtaq gas field and Totimaidan gas block may result in some land acquisition impacts for drilling of additional wells, gas platforms, gathering of gas pipelines, and service and access roads. The required land can be obtained through land lease method, as the proposed facilities are most likely to be located on government-owned land.

- The TA activities downstream of the project may cause risks associated with influx of labor, labor management issues, and GBV. The activities are likely to involve limited number of laborers from outside the project's area of influence and Activity B1.3 includes establishment and implementation of GRMs related to gas infrastructure development,

including activities for GRM Committee members, relevant communities, workers and the relevant ministries. Moreover, Activity B1.3 provides for development of a code of conduct for resource developers to implement GBV prevention which will also include support to the Gender Unit of the MoMP.

- In addition, limited capacity of the implementing agency to manage social issues remains a key challenge but capacity gaps could be readily addressed through appropriate implementation support. In particular, the lengthy process for land acquisition and compensation to project-affected families is a key concern across all sectors in Afghanistan.

- Apart from this, this project has a high profile and has the potential to garner considerable media attention. Security concerns are real, as some of the project sites are in conflict zones which are under insurgents' influence. There are some concerns over capacity and experience of the MoMP and AGE in managing stakeholder engagement, but these processes could be readily addressed with adequate implementation support. Provisions for such support have been included under Activity B1.3 of the project.

149. Final design and engineering details and, therefore, the exact physical location of all activities is not known in advance, which prevents the development of a Social Impact Assessment, associated management plans, and an RP at this stage. Instead, an ESMF and a stand-alone RF have been prepared and disclosed to guide the preparation of ESIA and RP with attendant management plans (ESMPs). The RF will guide the management of land acquisitions for the portion of the SMPL where the alignment is still undetermined, including the TA downstream activities.

150. The ESMF includes terms of reference (TOR) for the ESIA and ESMP for the remaining 45.1 km of the SMPL and the downstream TA activities. A TOR has also been included in the RF for preparation of the subsequently required RPs.

151. The ESIA, ESMP, and RP preparation for the remaining 45.1 km of the SMPL will be carried out before the commencement of any construction activities. The overall length of the gas pipeline is 89.1 km, of which 44 km is largely completed. The client has developed an ESA and an EPSA for the already completed works (44 km gas pipeline and the existing amine plant). The EPSA includes details for compensation to project-affected families.

152. The ESMF, RF, ESA and EPSA have already been disclosed in-country on the MoMP and the World Bank websites following the World Bank's review. The translated version (hard copies) of the EPSA has also been disclosed locally, which can be easily accessed by the affected families and other interested parties. Third Party Monitoring (TPM) will be engaged to provide monitoring and reporting on compensation payments to the affected families. This process will be followed for subsequent social (and environmental) studies (ESIA, RP, ESMPs, and relevant plans) as these are prepared and reviewed.

153. The client has prepared LMP, which will be followed for the AGASP. The LMP proposes specific requirements and interventions for management of labor, including GRM for workers. The LMP will be used as the basis to develop a labor management plan for each site, which will be included in the site-specific ESMP. Based on the assessment, the project activities involve three types of employment: (a) direct workers—the recipient staff, such as ministry, AOGRA, and AGE, who will be directly engaged; (b)

contracted workers through third parties, such as contractors under the TA downstream activities; and (c) primary supply workers, who will be engaged by primary suppliers. The contractors and other parties to be supported under TA downstream activities will inform the workers of the GRM available to them at the time of recruitment and make it easily accessible to them.

154. The TA downstream activities of the project may cause risks associated with influx of labor, labor management issues, and GBV. The AGASP is rated 'Moderate' risk in terms of GBV (however, GBV risks of TA downstream activities are expected to be substantial) and consideration should be given to a separate GBV GRM system, potentially run by a GBV services provider with feedback to the project GRM, similar to that for parallel GRMs by contractors and other relevant parties.

155. The client will ensure that AGE or other potential operators will prepare community health and safety plans (for example, GBV action plans and labor influx risk-mitigation plans) before commencing work. The ESMP will also include a code of conduct which will be signed by each worker before starting work.

156. The project activities will require deployment of security personnel for protection of project workers and equipment. The risks associated with the use of security personnel are being assessed and necessary prevention and mitigation mechanisms/measures are planned and put in place under the project before the start of construction. A security plan will be developed before beginning civil works.

157. A SEP with a communication strategy has been prepared for the AGASP, which will be followed for consultation and information disclosure. The SEP outlines the ways in which the AGASP and contractors will communicate with stakeholders and includes a mechanism by which people can raise concerns; provide feedback; or make complaints about the project, AGE, contractors, and the project(s) themselves. The SEP is a living document and will be updated throughout the life of the project.

158. The client has made efforts to strengthen functionality of the GRM for the AGASP. On this, a thorough assessment of the current GRM has already been conducted. This exercise aims to identify key gaps with measures for grievance strengthening. The client has also developed a grievance guidance note which is included in the SEP. The purpose of the note is to provide guidance to the MoMP, AGE, and other stakeholders about grievance handling relating to the project. It can also help stakeholders and the affected communities understand what they can expect from the Government.

159. The MoMP has already established a dedicated GRM Unit for the AGASP which is staffed with a GRM Unit manager grievance focal point for the gas pipeline and amine plant.

V. GRIEVANCE REDRESS SERVICES

160. 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. KEY RISKS

161. Overall risks to achieving the objectives under this project are considered 'High'. First, support provided in the current context of Afghanistan is challenged by unpredictable security, logistics, and persistent capacity constraints. Second, entrenched political and governance approaches throughout the sector will be tested to the extent that the project seeks to reform ways of doing business to align with international good practices. Over the course of project preparation and implementation, the team will remain aware of project risks and work closely with the GoA to further develop and refine risk-mitigation measures.

162. **Political and governance risks are considered High.** The role and reach of government and nongovernment actors and political and cultural affiliations will continue to pose unpredictable challenges. Heightened expectations for the sector can allow for 'rapid' rather than 'right' approaches to governance. Entrenched practices exist along the hydrocarbon value chain; adding to this are continued influences of political instability and transition. Moreover, political and governance risks may be exacerbated by the uncertainty associated with the September 2019 presidential elections.

163. **Mitigation.** Under SDNRP1 and SDNRP2, program oversight and financial monitoring systems were established at the MoMP, which will continue to manage and implement project funds in line with project objectives. Management of these funds is underpinned by transparency principles that have prevented fraud, mitigated risk of corrupt practices, and facilitated government and counterpart participation. In line with capacity-building support under the project, contract monitoring, and review processes will be strengthened to ensure open processes for contract award, development, and publication of clear milestones for performance and regularized consultation. Continued support will be given to the EITI Secretariat and MSG to ensure reconciliation and publication of hydrocarbon payments and will help support transparency and accountability of the sector. The approval of the Mining Sector Road Map by the HEC helps mitigate potential policy risks associated with the sector, and the task team will continue to work with the ministry to ensure that implementation of relevant aspects of the road map aimed at enhancing governance (such as the establishment of an independent regulatory agency, AORGA) is supported through the project.

164. **Macroeconomic risk is considered High.** Afghanistan's macroeconomic outlook is subject to high risks. The country remains heavily reliant on aid, and any reduction in security and civilian support below expected levels would put pressure on fiscal sustainability and service delivery. Access to continued external support is most likely to be sustained if progress can be maintained in key structural reforms. Successful implementation of the reforms planned under the series of Incentive Program Development Policy Grants and under the Public-Private Partnerships and Public Investment Advisory Project (Board

approved in on May 31, 2018) will help mitigate this risk as it promotes the maximization of private financing for development.

165. **Technical design of project or program risks are considered High** given the beneficiary agencies' cyclical implementation capacity and weak coordination across these agencies. Moreover, delays in the construction of the pipeline may result in downstream implications for the deliverability of gas to the Mazar IPP, arresting the IPP's ability to generate power. This risk is further exacerbated by the current delays in the work of the SE tasked with confirming that the conditions of the Mazar Guarantee (P157827) are met. Delays of the SE could significantly affect the timeline for completion of construction and commissioning of the new SMPL and, hence, on the Mazar IPP along with any associated optimization of gas processing facilities serving both the Mazar and Sheberghan IPPs. The timeline for completion of construction of the SMPL is currently estimated at approximately 14 to 15 months.

166. Moreover, there are additional risks around the timely procurement of equipment for the construction of the pipeline, particularly for those goods that are not available in Afghanistan and may get delayed at the customs authority of a neighboring country. A variety of agencies will have to coordinate with one another on the implementation of the project, such as the MoMP, AGE, and MEW on the construction and commissioning of the pipeline and amine plant, adding to technical design and program risks. Finally, although the GoA has confirmed that AGE has been allocated sufficient budget to cover the labor costs and civil works associated with the construction of the pipeline, there is a risk that the budget may not fully materialize.

167. **Mitigation.** The project has been streamlined from its original design, limiting the number of investments and beneficiaries the project will support. Project activities focus largely on capacity building and TA by international technical experts to help facilitate implementation. In an effort to mitigate potential delays in project implementation, the Government would need to (a) manage an accelerated and exceptional procurement process for a new SE if needed and (b) accelerate procurement of the pipeline equipment and amine plant. The Government has allocated budget to AGE for the construction of the pipeline and has committed to addressing insecurity in the project area. If the budget allocation to AGE does not fully materialize for the construction of the pipeline and additional resources are necessary, limited contingency (US$1 million) has been built into the project budget to cover the financing of civil works and labor costs to AGE. In addition to this, a project management firm will be procured through the project to support coordination among beneficiary agencies, where necessary, and resolve implementation bottlenecks. To some degree, coordination has already been established, but it will need to be maintained over the life of the project.

168. **Institutional capacity for implementation and sustainability risks are rated High.** The MoMP, as the main government agency responsible for the administration of hydrocarbon activities has, in the past, undergone cyclical structural and staffing changes that has in discrete periods severely weakened the ministry's ability to retain institutional processes and capacity. At other times the MoMP has shown a remarkable ability to move forward with complex transactions. Overall, the capacity of the institutions charged with management and oversight of the sector remains limited, albeit the past three years have brought a resurgence of technical capacity through younger professionals. This cyclicity of sustained capacity results from several factors, including very frequent changes to the core leadership within the MoMP (including those benefiting the most from capacity building) and the modalities for providing support (such as the use of off-budget resources and PMUs).

169. **Mitigation.** The project supports a reinvigorated approach to assistance and sustained capacity building. Subcomponent B1 'strengthening MoMP's capacity to manage the gas sector' is aimed at mitigating risks associated with limited implementation capacity and sustainability by providing support to (a) other limited human resource capacity-building initiatives aimed at facilitating the development and sustainability of staff and skills, including through the establishment of a gender-balanced young professional's program within the MoMP and AOGRA, and (b) capacity building to the Gender Unit of the MoMP to implement the existing GoA gender policy for the ministry that aims to ensure gender equity in the recruitment and management of its staff. Through the PMSF, an archive of documents will be established to help further support building institutional memory once the project closes. As discussed in the sustainability section of this PAD, substantial TA on O&M for gas infrastructure is provided under the project.

170. **Fiduciary risks are rated Substantial** because of very low capacity within the MoMP on procurement, FM, contract management, and the ability to effectively resolve bottlenecks in project management. Experience has shown that the procurement process is often delayed and lengthy, consultants are not paid for a variety of reasons, and contract management is very poor. These risks may be further exacerbated as this project will be fully implemented through the MoMP (rather than a PMU), which will have to take fiduciary responsibility for activities implemented in separate beneficiary agencies, such as AGE and AOGRA.

171. **Mitigation.** To mitigate such fiduciary risks, as a condition of support, the MoMP will procure a project management firm to provide capacity building and enhance the professional skill of the MoMP staff to manage fiduciary risks on time, including resolving contractual and payment issues with contractors. The firm will also build capacity on procurement processes and planning, M&E, and coordination and implementation.

172. **E&S risks are rated Substantial** primarily given the low capacity for E&S management of the sector by the responsible agencies. More specifically, despite support provided under past projects, in-country capacity for E&S issues management remains limited institutionally, particularly in view of the complex and challenging country conditions. In particular, the MoMP's capacity has declined over the last several years in terms of E&S protection capacity. A previously established E&S unit degraded to becoming non-operational under earlier ministerial leadership. While E&S capacity is being re-established at this time and the project will not invest directly in gas assets, there may be downstream E&S risks associated with TA to the sector.

173. **Mitigation.** The project has prepared a comprehensive set of documents aimed to managing E&S risks associated with the project, including (a) several framework documents such as the (i) ESMF, (ii) Resettlement Framework (RF), (iii) LMP, and (iv) SEP and (b) several site-specific E&S documents such as the ESA and EPSA for the pipeline. The draft ESMF, RF for the AGASP, and TORs for the ESIAs and RP(s) were subject to meaningful and participatory stakeholder consultations both in Kabul and in the affected areas of the project. These documents were disclosed to all stakeholders in relevant project-specific sites in the country, in formats and languages understandable by the local population, and have also been disclosed on the World Bank's external website.

174. In addition, the project supports the operationalization of a formal E&S Unit within the MoMP to which, under Subcomponent B1, a substantial amount of capacity building will be provided. The E&S Unit

will use the ESMF and RF to screen and identify disadvantaged and vulnerable communities and individuals, assess their vulnerability, and propose interventions in the project to ensure not only that they are not affected disproportionately but also that they can share in project benefits. These measures will be reflected in various E&S standards instruments. Each of the gas investment activities will be supported by capacity building and TA through the project, including E&S monitoring, to ensure, to the extent possible, that investments proceed with a strong level of oversight. And finally, the ESF will apply to the TA components in accordance with the Operations Environmental and Social Review Committee (OESRC) Advisory Note on Technical Assistance and the Environmental and Social Framework (May 21, 2019) and, where relevant, to future downstream investments. For this purpose, the project will first ensure that all the advisory support provided under the project will be consistent with ESF requirements, and second the client has prepared the necessary E&S instruments, as per the ESMF and RF. The E&S Unit and World Bank safeguard specialists need to ensure that the ESMF and RF are incorporated in the bidding documents and contract documents for contractors and SE. Contractors will be responsible for the preparation and adequate implementation of relevant management and OHS Plans, and the E&S Unit will have to approve these plans and supervise their implementation.

175. **Stakeholders' risks are Substantial.** Considering the array of stakeholders affected by how Afghan hydrocarbons are developed, a comprehensive approach to stakeholder engagement has been put in place through the SEP for the project. Civil society, including media, are hampered with misinformation and misunderstanding of sector developments that results in lack of awareness or, on the contrary, sensationalism of expected outcomes for sector investments.

176. **Mitigation.** Support provided during the implementation of SDNRP1 and SDNRP2 consultative working groups (specifically the AEITI MSG) will be strengthened through the proposed project; participation in the extractive industries and related coordination groups will continue to ensure broad stakeholder engagement and reduce duplication of efforts. Improved community engagement will be facilitated through implementation of the SEP. Activity B1.3 provides direct support to citizen and stakeholder engagement and includes activities such as establishment and implementation of GRM related to the gas infrastructure development and for broader implementation of the AGASP, including capacity building, training, and social mobilization activities for GRM Committee members, relevant communities, and the relevant ministries, as well as the development and implementation of citizen engagement and social accountability initiatives to ensure that all stakeholders effectively understand sector development issues. The project will actively coordinate with development partners and support the MoMP, NEPA, and key stakeholders in convening activities to ensure regularized communication and program development that responds to sector needs.

177. **Other security risks associated with this project are considered high.** While UNAMA reported a 27 percent decrease in casualties in the first half of 2019 compared to the same period in 2018, violence has since increased, especially in August and September. Total civilian casualties reached 10,993 during 2018, higher than 10,459 in 2017.[16] Notwithstanding that several activities of the project will be in the relatively stable northwestern part of Afghanistan, with limited instances of violence in the last 10–15 years, the overall security risk within the country remains high. In addition, the area in which pipeline construction is set to take place is reported to be insecure, with a high level of insurgency activity. To date,

[16] Source: World Bank, Afghanistan Development Update, July 2019.

this insecurity has been one of the impediments (in addition to funding, capacity, equipment, and so on) to AGE's ability to complete the construction of the remaining portion of the pipeline.

178. **Mitigation**. While insecurity is likely to persist, the Government has indicated its commitment to allocating budget and security personnel to ensure that the construction of the pipeline is not impeded by security constraints. Given AGE's understanding of the security environment in which they are operating and their relationship with the communities in the area, they have been assessed by the Government as the best option to construct the pipeline (rather than an external party). The World Bank, in collaboration with the Government, will continuously monitor this situation in the field as it evolves and take the necessary corrective action.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY: Afghanistan
Afghanistan Gas Project (AGASP)

Project Development Objectives(s)

The PDO is to facilitate a sustainable supply of gas through targeted investments in gas infrastructure and enhanced gas sector governance .

Project Development Objective Indicators

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Facilitate a sustainable supply of gas through targeted investments in gas infrastructure							
Increased capacity to deliver commercial quality natural gas through to off-takers in Sheberghan and Mazar (Cubic Meter(m3))		330,000.00	550,000.00	850,000.00	850,000.00	900,000.00	900,000.00
Facilitate a sustainable supply of gas through enhanced gas sector governance							
Improved institutional, regulatory and contractual framework for gas sector management and oversight (Text)		Hydrocarbons Law (2018) and Exploration & Production Sharing Contract Template.	Administrative regulation, gas pricing regulation, and gas allocation regulation submitted to cabinet for approval	Updated exploration and production model contract and attendant regulations submitted to cabinet for approval	Gas transport model contract and attendant regulations submitted for cabinet approval	Gas distribution model contract and attendant regulations submitted for cabinet approval	Primary regulatory and contractual framework for upstream and mid-stream gas sector development submitted to Cabinet.

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
COMPONENT A: SUSTAINING GAS SUPPLY							
Launch of an international tender Totimaidan gas blocks (Yes/No)		No	No	No	Yes	Yes	Yes
Commissioning of the new amine plant (Yes/No)		No	No	Yes	Yes	Yes	Yes
Commissioning for new Sheberghan-Mazar Gas Pipeline (Yes/No)		No	No	Yes	Yes	Yes	Yes
Adoption of an updated field development plan for Yatimtaq gas field (Yes/No)		No	No	No	Yes	Yes	Yes
COMPONENT B: STRENGTHENING SECTOR GOVERNANCE							
Production of a jointly-developed (MoMP and AOGRA) contractual and regulatory package for gas sector development. (Text)		Hydrocarbons Law (2018) and Exploration & Production Sharing Contract Template.	Launch procurement of consultants for extensive capacity building program.	Inter-Institutional Workshop to agree on the prioritized sequencing of contractual and regulatory instruments and develop a work program.	Final Draft of Prioritized Contractual and Regulatory Framework ready for submission to Cabinet.		Final Draft of Prioritized Contractual and Regulatory Framework ready for submission to Cabinet.
Share of women professionals in technical and managerial fields at MoMP and OAGRA (Percentage)		5.00	5.00	6.00	7.00	9.00	10.00
Development and dissemination of code of		No	No	Yes	Yes	Yes	Yes

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			1	2	3	4	
conduct to prevent Gender Based Violence in the extractive sector for investors (Yes/No)							
Afghanistan's EITI validation report shows improved results on greater number of parameters than the previous validation report (Yes/No)		No	No	No	Yes	Yes	Yes
Percent of project related grievances addressed within one month (Percentage)		0.00	50.00	60.00	70.00	70.00	70.00
Environmental and Social Unit of the MoMP fully staffed, operational and maintained. (Text)		Unit is currently staffed with consultants only	Unit partially staffed with civil servants as part of the tashkeel	Unit is fully staff with qualified civil servants as part of the Ministry's tashkeel	Staffing of Unit is maintained, an E&S management system has been developed, and staff have been trained to monitor E&S risks/impacts in the sector	Staffing of Unit is maintained, an E&S management system has been developed and is systematically used by staff to monitor E&S risks/impacts in the sector	Unit is staffed with fully civil servants and operational - Staffing of Unit is maintained, an E&S management system has been developed and is systematically used by staff to monitor E&S risks/impacts in the sector
Implementation of key recommendations from functional management review for AOGRA (Text)		No Functional review	Functional review prepared	Consultations on functional review finalized	Key/prioritized recommendations implemented	Remaining recommendations from review implememented	All recommendations from functional review implemented
COMPONENT C: PROJECT MANAGEMENT							
Project management firm recruited and maintained by MoMP (Yes/No)		No	Yes	Yes	Yes	Yes	Yes

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Increased capacity to deliver commercial quality natural gas through to off-takers in Sheberghan and Mazar	this indicator measures increase capacity to deliver commercial quality natural gas to off-takers in Sheberghan and Mazar (Mcmd cumulative).	twice per year	AGE/Supervision Engineer Reports	Supervision Engineer Reports	AGE/MoMP
Improved institutional, regulatory and contractual framework for gas sector management and oversight	This indicator measures the progressive development of a institutional, legal, regulatory, and contractual framework that governs the gas sector	twice per year	MoMP/AOGRA Consultant Reports	Consultant reports	MoMP/AOGRA

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Launch of an international tender Totimaidan gas blocks	This indicator measures whether there was a successful launch of a tender for the Totimadan gas block, including the implementation of all project activities necessary for the tender, including the	twice per year	MoMP/Consultant Reports	Consultant Reports	MoMP

	preparation of model contracts and tender documents.				
Commissioning of the new amine plant	This indicator measures if the new amine plant for gas processing has been fully installed and commissioned	twice per year	AGE/Consultant Reports/Supervision Engineer	Consultant reports/Supervision Engineer	AGE/MoMP
Commissioning for new Sheberghan-Mazar Gas Pipeline	This indicator measures the final construction and full commissioning for the Sheberghan-Mazar Gas Pipeline	twice per year	Supervision Engineer Monitoring reports	Supervision Engineer Monitoring Reports	MoMP/AGE
Adoption of an updated field development plan for Yatimtaq gas field	This indicator measures the capacity of the MoMP and AOGRA to assess field development plans	Twice per year	Consultant reports	Consultant reports	MoMP
Production of a jointly-developed (MoMP and AOGRA) contractual and regulatory package for gas sector development.	This component combines B.1. Strengthening the MoMP's capacity to manage the gas sector; and B.2. Strengthening AOGRA's sector oversight, regulatory and monitoring institutions governing gas sector activities.	twice per year	consultant reports	consultant reports	AOGRA
Share of women professionals in technical and managerial fields at MoMP and OAGRA	From Component B1.2. This indicator measures the success of recruitment and training efforts in the gas sector for women through	twice per year	MoMP's Gender Unit	Consultant Reports/Tashkeel	MoMP/AOGRA

	the project.				
Development and dissemination of code of conduct to prevent Gender Based Violence in the extractive sector for investors	This indictor measures the development and dissemination of guidelines to prevent violence against women in the extractives sector.	twice per year	MoMP Gender Unit	Consultant Reports	MoMP Gender Unit
Afghanistan's EITI validation report shows improved results on greater number of parameters than the previous validation report	From Component B1.4. This indicator measures the success of implementation of key accountability and transparency initiatives based on international standards of transparency, in particular the Extractives Industry Transparency Initiative (EITI)	twice per year	EITI Secretariat	AEITI Validation Reports	AEITI Secretariat
Percent of project related grievances addressed within one month	This indicator measures the responsiveness of the project grievance redress mechanism.	4 times per year	GRM committee reports	GRM Committee report and ledger	MoMP
Environmental and Social Unit of the MoMP fully staffed, operational and maintained.	This indicator measures the establishment and sustainability of the MoMP environmental and social unit, which plays a key monitoring and governance function	twice per year	MoMP E&S Unit	Consultant Reports	MoMP E&S Unit
Implementation of key recommendations from functional management review for AOGRA	This indicator maps to subcomponent B2 and measure the staffing and	Twice per year	Consultant Reports and AOGRA	Consultant Reports	MoMP/AOGRA

	operationalization of AOGRA				
Project management firm recruited and maintained by MoMP	This indicator measures the ability of the implementing unit to maintain strong project management.	Twice per year	Consultant Project monitoring reports	Consultant Project monitoring reports	MoMP

ANNEX 1: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

COUNTRY: Afghanistan

I. Financial Management

1. Afghanistan is a unitary government and has a centralized PFM architecture. The Public Finance and Expenditure Management Law (PFEML) 2005 sets out the responsibilities, authorities, and obligations related to the management of public finance in the country. The MoF has a dominant role in preparing and managing the annual government budget. It is also responsible for treasury functions, government financial reporting, and tax policy and administration. At the provincial level, Mustofiats, as MoF representatives, perform treasury functions. The central line ministries have the mandate of countrywide public service delivery. They prepare their annual budgets accordingly and, after approval of the Parliament, execute the same. The central line ministries are also responsible for maintaining an internal audit function as required by the PFEML. The SAO Law 2013 requires the Auditor General to conduct an annual audit of the government accounts.

2. The recent Public Expenditure and Financial Accountability Assessment (July 2018) notes that the Government maintains aggregate fiscal discipline by controlling expenditure within available resources, but the budget credibility remains poor and the overall control environment is weak. The MoF uses the Afghanistan Financial Management Information System (AFMIS) to manage budget execution that includes budget control over spending. The expenditure authorities are centralized, which creates spending rigidities and hampers innovations in service delivery. The service delivery units have virtually no role in budget planning and execution. Over the last three fiscal years, approximately half of the development budget has remained unspent. Although the prescribed internal control framework is reasonably detailed, compliance is varied. The control systems for payroll are insufficient and represent a major weakness for a significant proportion of expenditure. The asset and liability management and monitoring of fiscal risks display considerable gaps.

3. The budget allocation mechanism is largely incremental and impedes the links between the budget and policy priorities. Owing to the lack of required financing and uninformed budget allocation decisions, the social sector strategies have not been adequately funded. Weak budget expenditure execution is the result of poor project selection and inadequacies in the entire public investment management cycle—project preparation, project appraisal, execution, and M&E. The budget documents lack the required performance information, the Chart of Accounts does not facilitate information availability to the service delivery units, and there are no performance plans for service delivery. Consequently, the performance orientation of the entire budget formulation and execution process is undermined.

4. Based on the FM assessments of the MoMP, the FM risk of the project is assessed as Substantial. The MoMP's budget execution rate varied significantly over the last three years and for the development budget, the execution rate was as low as 50 percent. Reallocation of the development budget from government sources is also prone to risk of reallocation by the MoF, which is directly relevant to the SMPL labor cost for which the MoMP will receive budget from the Government. Though Treasury maintains accounting records in the AFMIS, no financial and document management system is used by the MoMP and all accounting is done either manually or using MS Excel. All the records including fixed assets and inventory registers are kept on paper and the old data are not properly archived. The absence of a proper system is a risk for timely availability of complete and accurate financial data and records. For the SMPL,

the exact amount and quantity of equipment purchased in 2014 by TFBSO are not available (TFSBO provided off-budget assistance), and in the absence of this information, there is a risk that the AGASP will procure equipment lesser or higher than the actual requirement. Furthermore, the details about transfer of assets ownership and delivery of services will be agreed between the MoMP and the beneficiary entities (AGE and AOGRA) in an MoU no later than one month after project effectiveness. The MoMP does not have the experience of managing large contracts; the largest consulting and goods contracts that the MoMP managed were below US$1.0 million and US$1.8 million, respectively. The largest civil work contract that the MoMP awarded was under the ADB's project and since last year, the work has been halted due to disputes with the contractor. The internal audit team's capacity of the MoMP has been assessed low both in terms of staffing and educational qualification, and there is a risk that either the project may not get proper audit coverage, or the internal audits may not be of the desired quality.

5. To address the FM risks, the World Bank has agreed to the following risk mitigation measures, the implementation of which will be supported by the AGASP:

(a) Within eight months of project effectiveness, the MoMP will hire a PMSF to support and maintain adequate fiduciary systems for the AGASP and provide capacity building of the MoMP staff (legal covenant).

(b) Within one month of project effectiveness, the MoMP and other beneficiaries of project activities, especially AGE and AOGRA, will sign an MoU to further define the implementation arrangements including ownership of assets, responsibility to supervise delivery of services by consultants, and recording of the Government's investment in AGE and AOGRA under the project (legal covenant).

(c) Conditions of disbursement of the funds allocated to Category 1(b) (works and goods for the construction of the pipeline: (i) each of the pre-construction survey, the detailed inventory of existing equipment and pipe and additional equipment and pipe required fo rthe completion of the construction of the Sheberghan - Mazar-e-Sharif Pipeline, the engineering survey and the detailed design for the construction of the Sheberghan - Mazar-e-Sharif Pipeline prepared by the Supervision Engineer is available in scope and level of details acceptable to the Association; and (ii) the Recipient at that time is not in default of its obligations under the ESCP which are related to the construction of the Sheberghan - Mazar-e-Sharif Pipeline. (disbursement condition).

(d) Within three months of project effectiveness, the MoMP will hire one qualified national internal audit specialist in accordance with the TOR agreed with the World Bank, for the capacity building of the MoMP's internal audit department.

(e) The AGASP will use the FMM developed by the World Bank for IDA and ARTF projects in Afghanistan. The FMM prescribes detailed controls, service standards, responsibilities, and documentation requirements for the project FM function.

(f) The World Bank is developing a financial and document management software for all IDA and ARTF projects in Afghanistan, which will also be implemented at the AGASP, once it is developed.

Project Financial Management Arrangement

6. **Personnel.** The FM directorate of the MoMP will be responsible for maintaining books of accounts on a daily basis and coordinating all FM matters with the World Bank and other stakeholders. Two additional FM staff (one senior FM specialist and one finance officer) will be financed through the project. These staff will be an integral part of the FM directorate of the MoMP and will be dedicated to FM-related activities of the project. These staff have already been hired under the AE4D PPG and will continue their responsibilities for the AGASP.

7. **Budgeting and planning.** The project will follow the country system for budget planning, budget revision, and budgetary control mechanism. The AGASP will prepare the budget for the next fiscal year according to the annual work plan and the strategic plan of the project and send it to the DM for Finance and Administration to consolidate it in the budget of the MoMP. The budget committee of the MoMP, headed by the DM for Finance and Administration, will review and finalize the budget of the whole ministry. The AGASP finance specialist and project coordinator will be a part of the budget committee of the ministry. The MoF, after review, will include the MoMP's proposed budget in the national budget for approval by the Parliament. The budget utilization of the project will be assessed in each quarterly IUFR. There is a separate sheet in the IUFR to compare the planned and actual expenditures at the subcomponent level. Any variance of more than 10 percent will be explained by the project team with proper justification.

8. **Accounting and financial reporting.** There are two-level accounting arrangements for the project: one at the national level and the other at the project level. The MoF is responsible for accounting and annual reporting of all projects at the national level and records all project financial transactions in the AFMIS. To report expenditure by type, category, and component, the MoMP will agree on the AFMIS coding structure for the AGASP with the MoF. At the project level, the MoMP will maintain books of accounts initially in MS Excel until the financial and document management system is available for deployment. On a quarterly basis, the AGASP will submit the IUFRs to the World Bank within 45 days of the close of the quarter. The IUFR format was agreed during project negotiations. The IUFR will report the expenditures and will also serve as a trilateral reconciliation between the Client Connection records, DAB's statement, and books of accounts of the project.

9. The FMM for the project, developed with the World Bank's TA, provides details of accounting records and books of accounts to be maintained and will be followed by the project. At the minimum, the following accounting records need to be maintained by the project:

- **Advance register** - to record the advances made
- **Cash/bank book** - to record all cash/bank receipts and payments
- **General ledger** - to record all receipts and payments
- **Fixed asset register** - to maintain up-to-date record of no consumable assets procured
- **Inventory register** - to maintain up-to-date record of consumable assets
- **Invoice register** - to track payments
- **Contract register** - to record all contract payments
- **M-16 register -** to record all the expenditures/payments
- **Taminat register -** to record the amounts retained from the payment made to vendors

10. **Internal controls.** The project will follow its operational manual for daily business. For the FM-related issues, the FMM, developed by the World Bank, will be applied for the project. It includes details on the FM arrangements and disbursements procedures for the project, including, but not limited to, staffing arrangements at various levels, reporting lines, allotment and payment processes, document retention and control mechanism at various levels, service standards for document processing, and documentation requirements for grants. The FMM includes internal controls for the following:

(a) **Authorization and approvals.** For payments to be made, the financial and administrative authority will be exercised in accordance with the approved delegation of powers with MoMP and MoF.

(b) **Verifications.** For each payment, the FM section will review that the payment claim is appropriately supported by documents and is in compliance with approved policies and has been approved by the competent authority.

(c) **Physical controls.** The Coordination Unit will maintain a fixed asset register for assets procured from grant proceeds. All assets will be tagged and periodically verified.

(d) **Reconciliations.** A reconciliation with the AFMIS, project records, Client Connection, and bank statement will be carried out on a monthly basis. Any difference in the reconciliation will be reviewed and the reasons for the difference will be documented.

(e) **Supervisory controls.** Monthly reconciliations will be approved by the head of finance within the Coordination Unit, while the annual physical stock verifications reports will be approved by the ministry leadership.

(f) **Document retention.** The FMM outlines the document retention policy for the project records both in soft and hard copies.

(g) **Asset management.** The FMM has comprehensive guidance on asset management, both consumable assets and no consumable assets, including records maintenance, periodic asset verification and reporting, and hand-over procedures at the closing of the project.

11. Internal audit for the project will be conducted semiannually by the internal audit department of the MoMP. The semiannual internal audit reports will be submitted to the World Bank throughout the project life. The internal audit team in the MoMP will be strengthened further by employing one qualified 'national internal audit specialist' who will be an integral part of the internal audit team and will report to the head of the Audit Department.

12. **External audit.** The SAO carries out the annual audit for all ARTF/World Bank-funded projects in accordance with INTOSAI auditing standards. The same audit arrangements will also be used for the project. The SAO will submit, to the World Bank, annual audited project financial statements and Management Letter within six months of the close of the fiscal year. The financial statements of the project audit will be prepared by the MoF based on the AFMIS records in accordance with the Cash Basis IPSAS. There is a common TOR for the audit of all projects that is reviewed by the World Bank on a yearly basis. The audit will include field visits to project sites for physical verification of assets created or the

works financed from the grant. For each financial year closing December 21, acceptable audited financial statements will be submitted to the World Bank within six months of the close of the financial year.

13. The annual audit report for the project financial statements will include an audit Management Letter and audit opinions which cover (a) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (b) whether grant proceeds were used only for the project or not; and (c) the level of compliance for each financial covenant contained in the legal agreement for the project.

Table 1.1. Annual Audit Report Due

Audit Report Type	Due Date
Project audited financial statements for financial year ended December 21 each year	June 21 each year

14. **Disbursements.** Disbursements will be report based. A separate DA will be set up in the central bank (DAB). The DA will be denominated in U.S. dollars, and funds will be front-loaded based on six months' cash forecast. Subsequent IUFRs will be used to document the expenditure and determine the amount of advance on quarterly basis.

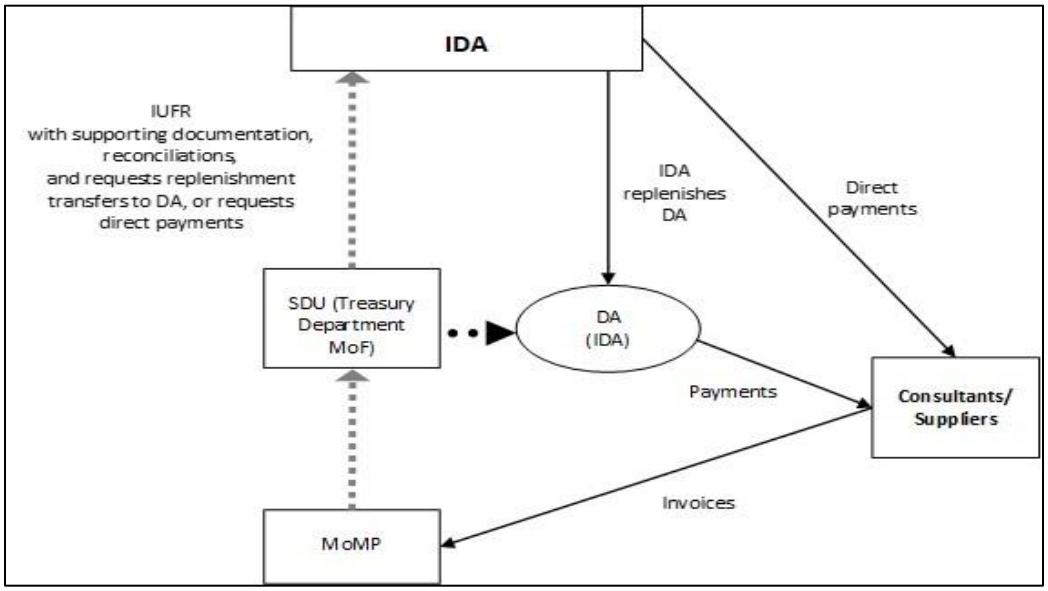
Table 1.2. Percentage of Expenditures Against each Category

Category	Amount of the Grant Allocated (expressed in SDR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consulting services, Incremental Operating Costs and Training for: (a) Parts A and B of the Project except works and goods for Part A 1.1; and (b) works and goods for Part A 1.1 of the project	 30,300,000 5,300,000	 100 100
(2) Goods, non-consulting services, consulting services, Incremental Operating Costs and Training for Part C of the Project	2,600,000	100
(3) Project Implementation Staff	400,000	100
Total amount	38,600,000	

15. **Retroactive financing.** There will be no retroactive financing under this project.

16. For large civil works, goods, and consultancy contracts where the payments are relatively large and are in foreign currencies, direct payment method will be used. The MoMP, through the MoF's Treasury Department, will submit a withdrawal application along with supporting documents and the World Bank will disburse funds to the supplier or contractor. The minimum value for direct payments will be documented in the Disbursement Letter. For direct payments, the World Bank will require certified copies of the original records at the time of the request for payment.

Figure 1.1. Funds Flow



II. Procurement

17. The proposed project has significant procurement activities including about US$24 million worth of goods, equipment, and supply and installation of plant and machinery and about US$20 million worth of technical and advisory consultancy inputs. As part of the preparations, a PPSD was developed by the PD of the MoMP for developing appropriate procurement strategies based on market and supplier analysis; other social, economic, legal, technological, and environmental factors that affect the specific procurement activities in the project; and capacity of the implementing agencies for undertaking the procurement of complex items in the project was assessed. A Procurement Plan, capacity-building plan, and risk-mitigation arrangements are developed as part of the PPSD process. The PPSD would guide the procurement implementation in the project and would be subject to revisions as and when any major changes or restructurings are undertaken in the project. The PPSD identified certain procurement activities for which market engagement is essential for attracting quality contractors and consultants, for example, amine plant works and supply and installation contracts. Procurement for SMPL design and engineering is in process, with technical specifications for the preliminary list of equipment being prepared. The assessment of equipment to be procured outside of the country is to be determined, and the time required for importation may impact the timeline for completion of the SMPL. The Ministry of Finance will work closely with Customs Department to minimize any potential delay. The procurement strategy includes conducting market engagement activities for mobilizing consultants. Similarly, for critical technical advisory services, for which international and national individuals are required, the strategy includes engaging a PMSF. The Procurement Plan considered various options available for setting the types of competition suitable for each procurement.

18. A thorough market analysis was done with regard to the preidentified activities related to the project, and it is concluded that the local market is equipped to handle low-value procurement of goods, consulting, and non-consulting services required for the project. However, the main challenge remains with high-value activities (for example, equipment for construction of SMPL, installation of the new amine plant, and recruitment of the PMSF). These procurement activities are of high value and the local market

does not have the capacity to carry them out and, at the same time, it is also difficult for firms coming from international markets. There are multiple challenges for international companies, of which security at the project site and unfamiliarity with the local conditions are the most important ones. The project will undertake market engagement activities for mobilizing international and national suppliers through conferences for these specific procurement activities.

19. Besides the abovementioned high-value procurement activities, another activity identified is sourcing high-quality international technical consultants for various tasks identified under the consultancy category. Currently, there is a low response rate from international individual consultants to the opportunities available at the MoMP. The main reason for low interest is unfamiliarity with the local market, concerns over payment of the consultants, and security concerns. To address this challenge, the project will integrate the HR facilitating component into the scope of work for the PMSF. The firm will be responsible to source, pay, and secure lodging and transport for these consultants.

20. The review had also identified certain specific risks that could affect the procurement outcomes. Risks and agreed mitigation measures with responsible entities for managing the same are presented in table 1.3.

Table 1.3. Risks, Agreed Mitigation Measures, and Responsible Entities

Risk Description	Description of Mitigation	Risk Owner
Lack of expertise in preparing technical specifications and TOR	Experienced technical advisers and senior specialists under the project will be hired to enhance its technical capacities.	MoMP, AOGRA, and AGE
Limited participation of bidders to the procurement opportunities	Market engagement activities will be undertaken before launching large supply installation and equipment procurement. A technically qualified and experienced team will be put together to prepare clear and specific TORs and technical specifications, which will attract more competitive bidders. Bidding opportunities will be widely publicized, at least on the UNDB, NPA, MoMP/MoIC/AOGRA websites and in one widely published local newspaper.	MoMP, AOGRA, and AGE
Limited contract monitoring and management expertise and system	The MoMP will develop, within six months of effectiveness of the project, a digital contract management system for effective monitoring and management of its contracts. Besides, a contract management expert will be recruited within the PD. The World Bank will support in enhancing the contract management teams' capacity by providing and facilitating trainings and other capacity-building opportunities.	MoMP
Lack of knowledge and experience in the application of the World Bank's new Procurement Framework governing the project	The World Bank has provided procurement training to the procurement staff in the MoMP. More training will be provided by the World Bank. Additionally, there is a provision for providing long- and short-term procurement courses within the project as part of the capacity-building component.	MoMP
High number of consultancy and individual consultants' contracts with limited contract management and administration capacity	Search, recruitment, and deployment will be part of the responsibilities of the PMSF. Technical teams will be trained on effective contract management.	MoMP

Risk Description	Description of Mitigation	Risk Owner
Delay in timely availability of funds for payments to suppliers/consultants will have an adverse effect on overall project implementation	Procurement, finance, and technical teams will be collaboratively coordinating and facilitating contract monitoring issues to avoid any undue delays in payments to the suppliers and consultants.	MoMP
Complaints and redressal system need to be aligned with World Bank requirements	All procurement complaints will be handled through STEP system. The MoMP will develop and agree on a grievance redressal system with the World Bank.	MoMP
Delay in obtaining timely approvals	The MoMP will prepare a descriptive operation manual where the responsibility of each department will be clarified and specified time wise. Besides, the issue of delay in acquiring the No Objection Letter (NoL) from the World Bank will also be closely coordinated with the World Bank colleagues.	MoMP
Change in currency exchange rate	Though this cannot be managed or controlled by the MoMP/AGE/AOGRA; however, suitable budget provisions will be incorporated in the annual work plans to take care of such changes.	MOMP, AOGRA, and AGE

21. Procurement will be carried out by PD of the MoMP in accordance with Procurement Regulations for IPF Borrowers under the New Procurement Framework. Based on the initial procurement capacity assessment of the implementation agencies, the procurement risk is rated 'High'. The MoMP will be responsible for carrying out procurement for AGE and AOGRA. The PPSD and Procurement Plan prepared by the PD of the MoMP will be followed. Based on implementation of capacity-building and risk-mitigation plans, a further assessment of AGE and AOGRA may be carried out by the World Bank during project implementation to decide on delegating procurement activities to these entities, should the need arise. A detailed Procurement Risks Assessment has been carried out using the online tool PRAMS, reviewing different aspects of the implementing entity. Appropriate risk mitigation efforts drawn from the assessment are included in the PPSD.

22. There is a total of 31 civil servants and four procurement contracted staff in the PD of the MoMP. The staff are hired through mass recruitment done by NPA. Over the last year, they have been directly engaged in major procurement following the country system and are taking care of some procurement activities under the AE4D PPG. Many of the civil servants were given training in the World Bank Procurement Regulations in 2018. The project shall ensure that people who have experience in World Bank projects in managing complex procurement activities are retained during the project implementation period.

23. Contract management is an area that requires considerable capacity building within the MoMP, AGE, and AOGRA. The ministry lacks a proper contract management system and it is agreed that an in-house contract management system will be developed and implemented. In addition, to avoid duplication of roles and responsibility between AGE, AOGRA, and the MoMP, a contract management manual will be prepared. The MoMP started the process of hiring of a contract management specialist under the project. The software for the contract management system should be procured no later than six months after project effectiveness.

24. The agreed procurement arrangements are based on an assessment of the existing implementation entity. In the event of any proposal for changing the procurement implementation responsibilities to any other entity, a separate assessment of the capacity of the proposed entity and appropriate amendments to the legal agreement will be required for effecting any such changes.

25. These specific requirements, as detailed in the following paragraphs, will be adhered to while undertaking procurement under the project.

26. **STEP and procurement planning.** The project will implement STEP, a World Bank planning and tracking system, which will provide data on procurement activities and establish benchmarks. The Procurement Plan will be prepared in STEP and the same will be updated in agreement with the project team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity. It is mandatory to use STEP for all procurement activities under the project.

27. **Frequency of procurement supervision by the World Bank.** In addition to the prior reviews, supervision shall be carried out by the World Bank team. There will be two ISMs per year and the World Bank team will provide ongoing implementation support in between these missions.

28. **Procurement audit and review.** In addition to prior reviews, World Bank staff or World Bank-appointed consultants shall carry out post procurement reviews once per year and the GoA auditing institutions will undertake the procurement audits.

29. **Governance and anticorruption.** All the contract opportunities and contract awards will be widely published on the Internet, https://ageops.net, Afghanistan Government e-Procurement system, the implementing agency's website, and when required in UNDB. Other actions are (a) alerting implementing agency's officials/staff about any fraud and corruption issues; (b) alerting bidders against adopting fraud and corruption practices; (c) awarding contracts within the initial bid validity period and closely monitoring the timing; (d) taking action against any corrupt bidder in accordance with the law of the GoA and informing the INT; (e) preserving records and all documents regarding public procurement, in accordance with the Procurement Law provisions; (f) publishing contract award information on UNDB online, NPA's website, and agency's websites within two weeks of contract award; (g) ensuring timely payments to the suppliers/contractors/consultants and imposing liquidated damages for delayed completion; and (h) enforcing a procurement filing system.

30. **GRMs: Complaints handling.** With regard to procurement complaints, the MoMP shall be guided by the World Bank's Procurement Regulations for IPF Borrowers, hereinafter referred to as 'Regulations'. The implementing agency will inform the World Bank through the Complaints Management System integrated within STEP as soon as a procurement complaint is received and will inform the World Bank of the final outcome of the complaint subsequently. The implementing agency will prepare a comprehensive complaint-handling mechanism, and this will be published on the NPA and implementing agency's websites. This mechanism should have a system to register and monitor the receipt and resolving of complaints, such as through the proposed hotlines. The progress of such actions will be reviewed during supervision missions.

31. The implementing agency will ensure that all invitations for bids and expressions of interest are given wide publicity using its own website, the NPA website, UNDB, and national newspapers. It will be mandatory to publish all bidding and consulting opportunities in the Afghanistan e-Procurement portal

https://ageops.net. Further for individual consultants, the Requests for Expression of Interest/vacancy notice will be published on the following websites: www.npa.gov.af, www.acbar.org, www.devnetjobs.org, and www.reliefweb.int.

32. **IOC.** IOC will be procured using the Afghanistan Procurement Law procedures. The operating costs will include O&M of equipment and vehicles; hiring of vehicles; office rent; costs of consumables, fuel, office utilities, and supplies; bank charges; advertising expenses; and training fees for individuals with prior agreement with the World Bank for professional development but exclude any salaries and allowances of civil servants and for nonessential staff. Any regular procurement of equipment and goods shall be included in the Procurement Plan.

33. **Project implementation staff/individuals.** Project components shall distinctly identify financial resources allocated for project implementation staff/individual costs with details of proposed positions and number, required minimum qualifications, time scale, and fee/salaries. According to Procurement Framework 2016, Procurement Regulations for IPF Borrowers, July 2016, such project implementation staff/individuals contracted by the borrower are not treated as individual consultants for the project. Such project implementation staff/individuals may be selected by the borrower according to its hiring procedures agreed between the GoA and the World Bank for such activities. The project will submit the TOR and selection details including proposed candidates to the World Bank for review and clearance. It may be noted that 'individual consultants' required for delivering a specific assignment under the project will be different from project implementation staff/individuals. Individual consultants are hired when a team of experts is not required, no additional home-office professional support is required, and the experience and qualifications of the individual are of paramount importance for delivering the assignment. All individual consultants will be included in the Procurement Plan and the selection will be subject to provisions in the Procurement Regulations. While the project may rely on individual consultants to support the client on the technical activities, at this stage it is expected that very few project implementation staff will be procured as consultants. Rather, the project is expected to rely on ministry staff for project implementation (FM, procurement, E&S, M&E, and so on). To date, the project has procured a project coordinator and several E&S specialists to support the project. It is anticipated that the E&S function will eventually fully migrate to the civil service to ensure that the sustainability of capacity is built at the MoMP.

34. Advance procurement, if undertaken by any implementing entity, shall follow the provisions for the same under the Procurement Regulations.

III. Implementation Support Plan

Strategy and Approach for Implementation Support

35. The strategy for implementation support draws on the risk profile of the proposed project and aims to enhance the delivery of the proposed interventions. As such, implementation support will focus on institutional capacity for implementation and sustainability, fiduciary aspects, E&S safeguards, and political and governance.

36. **Team.** The World Bank task team leader (TTL), co-TLL, operations specialists, and gas specialist will handle the day-to-day matters of the project as well as coordination with the client, with support from other members of the task team and specialists from other Global Practices, where necessary. The World

Bank FM and procurement specialists will provide timely, targeted training through periodic supervision missions. These specialists will help enhance the client's knowledge and understanding of World Bank requirements and support the client in building its overall FM and procurement capacity. Supervision of the FM arrangements will be conducted semiannually and, as needed, in response to project needs. Procurement supervision will also be carried out semiannually, preferably jointly with the regularly scheduled World Bank ISMs. The support would focus primarily on contract management and on improving proficiency and efficiency in procurement implementation.

37. **Implementation support.** The World Bank will undertake ISMs three to four times a year until the midterm review. In addition to this, there will be a dedicated operations officer based in-country to provide support. During this period, the World Bank may also undertake short technical missions and keep in regular contact through telephone and videoconferencing. The frequency of missions thereafter will be determined by the status of implementation and need for World Bank support. In conjunction with government counterparts, the World Bank team will monitor and report on progress against the monitoring indicators agreed in the Results Framework, as well as verification of their achievement. The team will also monitor risks, updating the risk assessment as needed and paying particular attention to the 'Institutional Capacity for Implementation' risks.

38. **E&S safeguards.** The World Bank team will support the client to ensure quality supervision related to safeguards and their implementation, including consultations associated with these safeguard instruments. The World Bank team will, in addition, support the development of guidelines on 'meaningful' stakeholder engagement as part of Component B. The client will incorporate E&S safeguards specialists to assist in the implementation of the various studies and activities.

IV. Implementation Support Plan and Resource Requirements

39. The skills mix, resources, and needs are as estimated in table 1.4.

Table 1.4. Implementation Support

Time	Focus	Skills Needed
First 12 months	Team leadership, technical, and procurement review of the TORs and procurement documents, institutional arrangement, project management, and supervision	TTL, co-TTL, operations specialists, gas specialist and other World Bank technical team members, fiduciary specialists, safeguards specialists, and consultants (technical professionals)
	Implementation of procurement planning and control system; strengthening capacity of the MoMP, including additional procurement and FM training	Fiduciary specialists
	Verifying if the fiduciary risk mitigating measures implemented by project effectiveness are functioning as intended; identification of any potential problems early in the life of the project	Fiduciary specialists M&E specialists
	E&S monitoring and supervision	Environment and social experts
First 12–24 months	Project management, operational and technical inputs toward capacity building	TTL and other World Bank team members
	FM, procurement, and disbursement	Fiduciary specialists and disbursement officer

Time	Focus	Skills Needed
	Midterm review	TTL, fiduciary specialists, safeguards specialists, and M&E specialists
Following midterm review	Continued support to the implementation of TA and capacity building	TTL and other World Bank technical team members, fiduciary specialists, safeguards specialists, and consultants (technical professionals)

ANNEX 2: ECONOMIC ANALYSIS

COUNTRY: Afghanistan
Afghanistan Extractive Sector Development Project (AGASP)

1. In assessing the economic returns, it should be noted that the primary rationale for supporting gas supply to the Sheberghan and Mazar IPPs does not rest on providing a least-cost supply of power to electricity customers. Arguably, additional imports from neighboring countries would be a less costly means of meeting electricity demand growth. Continued reliance on imported electricity, however, carries risks both regarding security of supply and security of cost. Foreign suppliers enjoy a high degree of monopoly power in their respective quadrants and while there is no reason at present to expect them to abuse this power, the lack of security regarding future availability and prices of electricity imports are a source of risk and a barrier to economic and social development. Efforts to diversify electricity supply through the development of domestic resources offer a tangible if not strictly measurable benefit.

2. A similar rationale applies to the role of the IPPs in anchoring the development of domestic gas resources. Without a reliable supply of fuel, gas-based industrial and commercial initiatives are unlikely to materialize, while without a guaranteed market, there is little incentive to invest in developing domestic gas resources. By supporting the investments needed to ensure sustained gas supply to the IPPs currently under development, the AGASP provides a critical link needed to ensure their viability and stimulate the growth of domestic gas production and gas markets.

3. The investment and TA components of the proposed project will 'de-risk' the proposed IPP investments and will increase security of energy supply through reduced reliance on electricity imports; promote the development of gas-to-power linkages; and increase the availability of grid electricity to meet growing demand for a robust and reliable source of power for households, institutions, and commercial and industrial enterprises. The gas-fired IPPs are intended to increase and diversify electricity supply and serve as an anchor off-taker for domestic gas resources. The current project will ensure, through its investment component, that sufficient gas is available to support the two IPPs during their initial operations and help ensure, through TA, that the Afghanistan gas sector has the capacity to sustainably serve longer-term demands for power generation. A financial analysis for the project was conducted during the due diligence process.

4. Development of the country's natural gas resources is a logical step toward economic growth and poverty alleviation. In the longer term, access to a readily available and affordable supply of natural gas can serve as a viable alternative to the environmentally damaging use of coal and biofuels currently widely used in household heating and cooking. However, if these benefits are to be realized, it will be necessary to attract investment on a significant scale, which will in turn require strong institutional, legal, contractual, and regulatory framework for private-investment-led sector development. The TA activities included in the project will help prepare sector personnel and institutions to deal with the challenges ahead.

5. Securing adequate gas supply to meet the needs of the IPPs will require investment matched with prices that yield positive returns to investors. An economic analysis for the Sustaining Gas Supply component of the project was undertaken with three main objectives to (a) review the total costs, both over the medium and the long term, of securing an adequate supply of gas to meet the needs of the IPPs;

(b) assess the effect of these cost estimates on the economic viability of the IPPs; and (c) assess the economic viability of the proposed investments in production, field, processing, and transport facilities that are required to allow the Government to meet its obligations under GSAs with the IPP developers.

6. An assessment was carried out of the costs and benefits of providing the necessary gas supply to the two power plants, including gas E&P, gas processing, and pipeline transport. The assessment calculated the investments required over the duration of the Mazar IPP GSA (that is, through 2040), the associated O&M expenditures, and the incremental volumes of gas made available to determine a unit cost of gas supply. Specific investments needed for near-term gas supply include drilling new wells at the Yatimtaq field, optimizing operations of the existing field facilities and amine plant, ensuring adequate processing capacity by installing a new amine plant, and completing a pipeline link from the Sheberghan fields to the IPP at Mazar-e-Sharif.

Plan for Future Gas Supply

7. Two discrete time periods were examined. The first considered the costs associated with gas from existing wells, where the only incremental costs involve completion of a gas pipeline from Sheberghan to Mazar and upgrading and expansion of gas processing facilities. Based on the forecast demand from current users and the two IPPs, the existing resources would be able to fully meet supply needs through 2023. The second looked at the period beyond 2023, when it will be necessary to develop additional resources to continue to meet the expected demand. Table 2.1 shows the proposed supply plan both for the initial and subsequent periods, while table 2.2 shows the associated capital and operating costs.

8. Because most of the costs assumed to date in the development of existing fields are sunk, the incremental cost of supply from wells that have already been developed is approximately US$15 per Mcm (allowing for a residual value of the pipeline and processing plant at the end of the period). The existing wells could meet the full requirement of both the IPPs as well as the demands of existing gas off-takers through 2023 and would continue to contribute—albeit at decreasing rates—to the total supply until their productive capacity becomes exhausted by around 2026. Table 2.1 shows the details of the calculation.

Table 2.1. Estimated Cost of Gas from Existing Wells

			Amine Plant	Pipeline	Gas Field	Total	
	Amine 1,2	Pipeline	Annual O&M	Annual O&M	Annual O&M	Cost	Supply
	$ million	$ million	$ million	$ million	$ million	$ million	MM cm/yr
	-	-	-	-	0		
2019	-	-	-	-	0.26	0.26	73
2020	13.90	14.40	0.70	0.22	1.29	30.50	365
2021	-	-	1.39	0.43	1.29	3.11	365
2022	-	-	1.39	0.43	1.29	3.11	365
2023	-	-	1.34	0.42	1.25	3.01	353
2024	-	-	1.19	0.37	1.10	2.65	311
2025	-	-	0.69	0.21	0.64	1.53	180
2026	-	-	0.34	0.11	0.32	- 20.46	90
					PV	**$24.77**	**1,648.76**
						Cost/MCM	**15.02**

9. Beginning in 2023, it will be necessary to bring new wells into production to meet the needs of the IPPs and the existing off-takers (a total of approximately 365 Mcm per year). Yatimtaq has sufficient resources to fulfil these supply needs for perhaps an additional nine years—until 2032—but by 2030 at the latest, major investments will be needed in field exploration and development to sustain currently contracted supplies.[17] The capital and operating costs of the necessary wells, surface facilities, and exploration and development activities and the residual cost of the pipeline and processing facilities necessary to maintain the annual supply requirement were estimated over the remaining period of the IPP contract. A resource depletion cost of US$50 per Mcm was added as well as a return to private capital of US$25 per Mcm. It is reasonable to expect that future exploration and development investment costs will be assumed by the private sector. The resultant estimate of the cost of future gas supplies was US$128 per Mcm. The calculations of the supply cost of the new gas are also shown in table 2.2. The assumptions underlying the supply, demand, and cost calculations are included in table 2.4 at the end of this annex.

Impact on Economic Viability of IPPs

10. The projected costs of gas supply for the existing off-takers, including the two IPPs, were incorporated into the economic analysis of the Mazar gas-to-power and the Sheberghan gas-to-power projects. In the short term, the economic cost of gas was assumed to be US$65 per Mcm, which included an imputed resource depletion cost of US$50 per Mcm mentioned earlier. In the long term, the economic cost of gas was assumed to be US$150 per Mcm—a figure somewhat higher than the calculated cost but still within the range suggested by other expert estimates. The higher cost figure was adopted because, while the costs of well drilling and expected output per well were based on tested production flow rates for existing Yatimtaq wells, as it becomes necessary to develop new wells and new fields, there is scant information on what their costs and productivity might be. In addition, various analysts suggested that as gas output continues to grow, amine treatment might not suffice to meet the increasing desulfurization needs and additional capacity might need to be considered. Accordingly, the higher figure was adopted for the economic analysis of the two IPPs.

11. The cost-benefit analysis of the two IPPs was based on a comparison of the gross increase in consumer welfare associated with incremental electricity supply with the full capital and operating costs of securing that supply. Details of the analysis are contained in the respective PADs for the Mazar and Sheberghan projects. Key assumptions are provided in table 2.4 at the end of this annex.

12. The EIRR analysis of the Mazar and Sheberghan projects found that both projects were economically viable under the assumed economic costs for gas. The EIRR for the Mazar project was estimated at 11.3 percent and the NPV at US$44.3 million. The EIRR for the Sheberghan project was estimated at 15.5 percent and the NPV at US$14.5 million. Switching value analysis indicated that the Mazar project would continue to be viable at long-term gas prices up to US$208 per Mcm, while the Sheberghan project would be viable even at gas prices of US$359 per Mcm.

Integrated Analysis of Projects

13. An integrated analysis was also carried out that looked at the proposed gas sector developments and the IPPs as an integrated project. Investment and operating costs of gas supply were combined with

[17] The developer of the Sheberghan IPP has already expressed interest in extending the initial five-year contract beyond its current term, likely replacing the planned mobile turbine with a more permanent installation. The analysis assumes that the Sheberghan IPP would continue to operate or would be replaced by a similar facility that would operate for a further 20 years.

the investment and operating costs of the IPPs, excluding the cost of gas. Benefits were estimated as the gross increase in customer welfare attributable to the incremental power supply. The EIRR of the combined project was 18.3 percent, and the NPV totaled US$120.4 million. The primary reason for the higher EIRR of the integrated project is that long-term gas costs were based on the estimates associated with the supply plan described earlier in this annex rather than on the US$150 per mcm shadow price used in the separate analyses of the two IPP projects.

Fiscal Impacts

14. Positive fiscal impacts of gas sector development will accrue from at least 3 sources:

- Revenue sharing on the sale of new gas production stemming from financial flows from production sharing agreements (PSAs) as production increases up to the requirements to supply existing and prospective off-takers of gas, including additional gas-based IPPs
- Profits taxes on gas suppliers and IPP project companies
- BRT (or VAT introduced) on incremental sales of gas and electricity

15. The positive fiscal impacts of associated with gas supply to the two related IPP projects, Mazar and Sheberghan, have been quantified in their respective PADs. Table 2.2 summarizes the findings. The table also shows, however, the negative fiscal impacts associated with the two IPPs which stem from DABS' losses on electricity sales, and the GoA's obligation to cover the cost of gas supplied to the IPPs over and above that included in the DABS tariff.

Table 2.2. Fiscal Impacts of Mazar and Sheberghan IPPs (Base Case Analysis)

Fiscal Impact	Mazar		Sheberghan**		Total	
	Negative	Positive	Negative	Positive	Negative	Positive
Unrecovered Cost of Gas	-48.89		-5.24	-	-54.13	-
Royalty Received on Gas Sales		40.39	-	3.64	-	44.03
DABS Losses on Power Sales	-140.50		-21.29	-	-161.78	-
Income Tax Witholding		9.89	-	2.96	-	12.85
Business Receipts Tax (BRT)		12.89	-	0.47	-	13.36
					-	
Total	-189.39	63.18	-26.53	7.06	-215.92	70.24
Net	-126.21		-19.46		-145.67	
Net per year	-6.31		-3.89		-10.20	

** Note that Sheberghan impacts are limited to the 5 year term of the PPA between the GoA and the Developer

16. The most significant negative fiscal impacts are the losses that DABS, the state-owned electric utility, incurs on power sales, which are exacerbated by DABS' own operating inefficiencies and by a failure on the part of the GoA to set electricity tariffs at cost recovery levels. Table 2.3 shows the impact of a 3 percent per year increase in electricity tariffs on the net fiscal impacts of the two IPPs. The annual negative fiscal impacts of the two projects drop by almost US$80 million. The net negative impacts of Mazar are virtually eliminated. If DABS were to also successfully address its technical and commercial losses, which currently stand at 35 percent, and bring them into a more normal range of 15 to 20 percent, the negative fiscal impacts would be more than outweighed by the positive effects.

Table 2.3. Fiscal Impacts of Mazar and Sheberghan IPPs (3 percent DABS tariff increase)

Fiscal Impact	Mazar		Sheberghan**		Total	
	3% Dabs Tariff Increase		3% Dabs Tariff Increase		3% Dabs Tariff Increase	
	Negative	Positive	Negative	Positive	Negative	Positive
Unrecovered Cost of Gas	-48.89		-5.24	-	-54.13	-
Royalty Received on Gas Sales		40.39	-	3.64	-	44.03
DABS Losses on Power Sales	-68.82		-14.61	-	-83.43	-
Income Tax Witholding		9.89	-	2.96	-	12.85
Business Receipts Tax (BRT)		12.89	-	0.47	-	13.36
Total	-117.71	63.18	-19.85	7.06	-137.56	70.24
Net	-54.54		-12.78		-67.32	
Net per year	-0.27		-2.56		-2.83	

** Note that Sheberghan impacts are limited to the 5 year term of the PPA between the GoA and the Developer

17. It is also useful to put these impacts in context with the overall fiscal profile of the GoA. In 2018, Afghanistan had a fiscal surplus in excess of US$100 million on total revenues of US$4.8 billion. It is also worth noting that in the same year, the Government spent US$1 billion on imports of liquid fuels—equivalent to 13.5 percent of their total imports that year.

18. The above analysis addresses only the fiscal impacts directly related to the two IPPs that are currently under development. As new gas resources are developed, and additional supplies come onto the market, the GoA will benefit on an ongoing basis from PSAs or other forms of compensation that will be negotiated with the gas developer for the depletion of the resource, as well as from ongoing taxes on profits and revenues of expected new industrial development and additional gas-based IPPs. These benefits will be an order of magnitude higher than those associated with the two initial pilot developments.

In Closing

19. The analysis in the preceding sections assigns a monetary value to the proposed project and to the IPPs which it is intended to support. Unfortunately, the analysis cannot capture the full range of benefits either of development of the country's indigenous gas resources or of the extension of grid electricity supply to households, institutions, and enterprises. Extension of grid supply will increase consumer welfare not only to the extent that the customers are willing or able to pay for supply but also in terms of increased opportunities for job creation and productive applications and improved outcomes in both education and health care. The analysis also does not take into account the value of the projects as a demonstration of the viability of domestic gas-fired power generation, which will continue to reduce the country's reliance on imported electricity and also provide a flexible and readily dispatched source of electricity which can back up the discontinuous output of solar and wind-driven power plants. Finally, it should be noted that development of domestic gas resources could delay or even forestall the exploitation of the country's indigenous coal resources.

Table 2.4. Summary of Assumptions

Variable	Unit	Value	Source
General			
Discount rate	%	6	World Bank Guidelines
Exchange rate	AFN/US$	80.05	Market rate, July 3, 2019
Gas Supply			
Drilling cost per well	US$, millions	8	Tenders for additional drilling at Yatimtaq
Success rate	%	75	World Bank estimate
Average annual output	Mscmd	250	McDaniel estimates of Yatimtaq potential output
Average life per well	Years	6	As above
Casing and surface facilities	% of drilling cost	10	World Bank estimate
Gas field O&M	US$ per Mcm	3.53	Gerquduq, Khoja Gogerdak, and Yatimtaq Fields, Advanced Engineering Associates International, Inc. (AEAI) /McDaniels May 2016, table 17
Pipeline capital cost	US$, millions	14.4	Unicon
Annual pipeline O&M	% of CAPEX	3	World Bank estimate based on other pipeline projects
Pipeline life	Years	20	World Bank estimate
Amine plant capital cost	US$, millions	13.9	Supplier cost estimates
Annual amine O&M	% of CAPEX	5	World Bank estimate
Amine plant economic life	Years	20	World Bank estimate
Output of existing wells	Mscmd	refer to table 2.1	Unicon inception report, IFC Engineer Notes
Depletion premium	US$ per Mcm	50	TFBSO, June 2013
Developer returns	US$ per Mcm	25	TFBSO, June 2013
IPPs			
Thermal efficiency	%	39	World Bank estimate
Plant factor	%	80	Developers, IFC
Capital cost of distribution networks	US$ per annual kWh	0.17	World Bank estimates based on Herat Electrification Project
Mazar			
Capital cost - economic	US$, millions	79.2	Developer, IFC
Capital cost - financial	US$, millions	96.6	Developer, IFC
Capital cost of transmission line	US$, millions	5.00	Developer, IFC
Capacity	MW	58.56	Developer, IFC
Annual O&M – fixed	% of CAPEX	1	World Bank estimate
Annual O&M – variable	US$ per kWh	0.01	World Bank estimate
Annual output	GWh	404.74	Developer, IFC
Project life	Years	20	World Bank estimate. Developer contract
Sheberghan			
Capital cost - economic	US$, millions	42.27	Developer

Variable	Unit	Value	Source
and financial			
Cost of transmission line	US$, millions	3.00	Developer/DABS
Residual value - 5 years	US$, millions	18.19	Developer
Residual value of transmission line - 5 years	US$, millions	2.25	Developer
Capacity	MW	40	Developer
Annual O&M year 1	US$, millions	3.00	Developer
Annual O&M years 2–5	US$, millions	2.50	Developer
Annualized major maintenance	US$, millions	2.57	Developer
Annual output	GWh	275.1	World Bank calculation based on capacity, plant factor
IPP Benefits Analysis			
DABS losses	% of power received	35	World Bank estimates
Average tariff NEPS region	US$ per kWh	0.086	DABS tariff schedule and sales statistics
Weighted average willingness to pay - NEPS region	US$ per kWh	0.014	World Bank calculations
Average tariff - residential	US$ per kWh	0.061	DABS revenue and sales statistics
Average tariff - institution	US$ per kWh	0.166	DABS revenue and sales statistics
Average tariff - commercial	US$ per kWh	0.162	DABS revenue and sales statistics
Average tariff - industrial	US$ per kWh	0.103	DABS revenue and sales statistics
Cost of avoided substitutes - residential	US$ per kWh	0.715	Capital and operating costs SHS systems, bank estimates plus responses to household energy survey
Cost of avoided substitutes - institution	US$ per kWh	0.336	Capital and operating costs - 3 kVA gasoline generator, World Bank estimates
Cost of avoided substitutes - commercial	US$ per kWh	0.336	Capital and operating costs - 3 kVA gasoline generator, World Bank estimates
Cost of avoided substitutes - residential	US$ per kWh	0.328	Capital and operating costs - 12 kVA diesel generator, bank estimates

Note: CAPEX = Capital Expenditure.

ANNEX 3: SMPL CONSTRUCTION EQUIPMENT

Category	Description	Option-1	Option-2
		Estimated cost, US$	Estimated cost, US$
Balkh River Crossing Options			
Option-1 HDD for Balkh River Crossing	Cost of HDD rental with crew mob/demob.	$650,000	
	Subtotal:	***$650,000***	
Option-2 Catenary Bridge for Balkh River Crossing	Structural steel for Balk River Crossing		$350,000
	Other materials for Balkh River Crossing (concrete, rebar, gravel, rock)		$280,000
	Subtotal:		***$630,000***
Equipment			
SMPL Equipment	Equipment required for the pipeline operation and safety		
Gas Regulating Stations	Gas Regulating and Metering Stations to control pressure and gas volume	$750,000	$750,000
Valves	Block Valves and other valves to operate the pipeline and related facilities	$280,000	$280,000
	Subtotal:	***$1,030,000***	***$1,030,000***
Construction Equipment	Construction Equipment, which is required to continue SMPL construction		
Bulldozer	1 Bulldozer with Angle Blade and Winch.	$340,000	$340,000
Side Boom (Pipelayer)	2 side booms to lower-in pipe lengths into the trench	$680,000	$680,000
Lift Cranes 16tn	2 cranes to lift construction materials	$220,000	$220,000
Track Backhoe	1 Track Backhoe w/hydraulic connections for rock hammer to excavate and break down rock	$200,000	$200,000
Hydraulic hammer	1 Hydraulic hammer to fit purchased Track Backhoe w/hydraulic connection (see above)	$40,000	$40,000
Rubber tired backhoe	1 Rubber tired backhoe to excavate trench for the pipeline	$80,000	$80,000
Rubber tired Road Grader	1 Rubber tired Road Grader to grade and clean ROW and roads	$140,000	$140,000
Rubber Tired Loader	1 Rubber Tired Loader to backfill the pipeline and other earthworks	$140,000	$140,000
Straight lowboy trailer	1 Straight lowboy trailer to move heavy equipment to the construction site	$50,000	$50,000
Float trailers	2 loat trailers to deliver materials to the construction site	$80,000	$80,000

Category	Description	Option-1	Option-2
		Estimated cost, US$	Estimated cost, US$
Pipe Truck	1 Pipe truck to deliver long pre-welded pipe lengths to the construction site to accelerate construction	$65,000	$65,000
Pickup trucks	2 Pickup trucks to pull Lincoln welding machines to the construction site	$80,000	$80,000
Trucks	2 Trucks to pull Float trailers and Straight lowboy trailer	$160,000	$160,000
Tandem dump truck	1 tandem dump truck (10 yd.) for earthworks	$120,000	$120,000
Water truck	1 Water truck for hydrostatic tests	$80,000	$80,000
Mobile Air Compressor	1 Mobile Air Compressor for pneumatic tests with output up to 250 bar	$130,000	$130,000
Field bending machine	1 Field bending machine to make over bands, sag bends and horizontal bends for the pipeline	$175,000	$175,000
Concrete Vibrators	2 Diesel Engine Driven Concrete Vibrators to compact foundation for equipment	$5,000	$5,000
Buses	2 buses to deliver labour force to the construction site	$60,000	$60,000
Minivan	2 minivans to deliver labour force to the construction site	$70,000	$70,000
	Subtotal:	***$2,915,000***	***$2,915,000***
Cathodic Protection (CP)			
CP Equipment	Cathodic protection stations, anodes and test points to protect new SMPL and existing gas pipeline	$450,000	$450,000
CP construction	CP Installation, pre-commissioning, commissioning and start-up	$100,000	$100,000
Coating inspection and repair	Works to inspect the pipeline coating and repair insulation damaged during construction	$50,000	$50,000
	Subtotal:	***$600,000***	***$600,000***
	Total without Contingency	***$5,195,000***	***$5,175,000***
	Contingency	***$1,100,000***	***$1,100,000***
	TOTAL:	***$6,295,000***	***$6,275,000***

ANNEX 4: OFFICIAL MAP OF AFGHANISTAN