Periodic Financing Request Report

Project Number: 47282–005
MFF Number: 0090
September 2017

Afghanistan: Energy Supply Improvement Investment Program (Tranche 3)

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Asian Development Bank
CURRENCY EQUIVALENTS
(as of 29 August 2017)

Currency unit – afghani/s (AF)
AF1.00 = $0.0146
$1.00 = AF68.43

ABBREVIATIONS

ADB – Asian Development Bank
ADF – Asian Development Fund
DABS – Da Afghanistan Breshna Sherkat
DBO – design–build–operate
EMP – environmental management plan
FAM – facility administration manual
FMA – financial management assessment
IEE – initial environmental examination
MEW – Ministry of Energy and Water
MFF – multitranche financing facility
NESP – National Energy Supply Program
PMO – project management office

WEIGHTS AND MEASURES

MW – megawatt

NOTES

(i) The fiscal year (FY) of the Government of Afghanistan and its agencies ends on 20 December. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2015 ends on 20 December 2015.
(ii) In this report, “$” refers to US dollars.
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1. Design and Monitoring Framework for Project (Tranche 3)
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6. Economic and Financial Assessments for Project (Tranche 3)
7. Updated Summary of Poverty Reduction and Social Strategy
8. Procurement Plan
9. Safeguard Reports
10. Updated Risk Assessment and Risk Management Plan
1. **Basic Data**

   **Project Number:** 47282-005  
   **Project Name:** Energy Supply Improvement Investment Program (Solar), Tranche 3 (Formerly MFF II: Energy Development 2014-2023)  
   **Country/Borrower:** Afghanistan, Islamic Republic of  
   **Department/Division:** CWRD/CWEN  
   **Executing Agency:** Da Afghanistan Breshna Sherkat

2. **Sector**

   **Subsector(s):** Renewable energy generation - solar

3. **Strategic Agenda**

   **Subcomponents:**  
   - Inclusive economic growth (IEG)  
   - Environmentally sustainable growth (ESG)

   **Climate Change Information:**  
   - Adaptation ($ million): 0.80  
   - Mitigation ($ million): 43.95  
   - CO₂ reduction (tons per annum): 13,000  
   - Climate Change impact on the Project: Medium

4. **Drivers of Change**

   **Components:**  
   - Governance and capacity development (GCD)  
   - Knowledge solutions (KNS)

   **Gender Equity and Mainstreaming:** No gender elements (NGE)

5. **Poverty and SDG Targeting**

   **Location Impact:** Nation-wide

6. **Risk Categorization:** Low

7. **Safeguard Categorization**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Involuntary Resettlement</th>
<th>Indigenous Peoples</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>C</td>
<td>C</td>
</tr>
</tbody>
</table>

8. **Financing**

<table>
<thead>
<tr>
<th>Modality and Sources</th>
<th>Amount ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>44.76</td>
</tr>
<tr>
<td>Sovereign MFF-Tranche (Grant): Asian Development Fund</td>
<td>44.76</td>
</tr>
<tr>
<td>Cofinancing</td>
<td>0.00</td>
</tr>
<tr>
<td>None</td>
<td>0.00</td>
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<tr>
<td>Counterpart</td>
<td>1.74</td>
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<tr>
<td>Government</td>
<td>1.74</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46.50</strong></td>
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</table>
Significant Developments in the MFF and Previous Tranches

Tranche Summary
Tranche 3, the Naghlu Solar Power Project, has 2 main components: (i) construction in Surobi, Kabul province of a 20 MW on-grid solar photovoltaic plant and support facilities, substation upgrade, and 3 years O&M services, and (ii) capacity development for Da Afghanistan Breshna Sherkat (DABS) and Ministry of Energy and Water (MEW). It will also prepare the site for an additional 10 MW PV plant for future financing by ADB, other development partners or private sector. The project will connect to the Naghlu Hydropower Plant substation and transmission line 2 km away for power evacuation and balancing. Tapping Afghanistan's 223 GW solar potential, the project will partially and quickly fill the demand-supply gap and improve sustainability of the northeast grid covering Kabul and Jalalabad. The project is aligned with the MFF and Afghanistan National Energy Supply Program (NESP).


Outcome: Supply of indigenous renewable energy in Afghanistan increased.

Outputs: (i) Solar photovoltaic power plant with transformer and support facilities installed and operational, and 3 years of operation and maintenance services completed, and (ii) Technical capacity of DABS and MEW on solar photovoltaic plant design, technical evaluation, grid integration, and operations and maintenance increased

Implementation Arrangements: Da Afghanistan Breshna Sherkat will be the executing agency.

Project Readiness: The project was designed following the 2016 Afghanistan Enhanced Project Delivery Approach paper. Technical design, economic and financial analyses and safeguards due diligence have been completed. The government has agreed with the scope, schedule, and for DABS as EA. DABS has an existing PMO that is staffed and operational. The invitation for bids is expected to be issued in October 2017. Implementation consultants are being engaged to assist in procurement.

Policy Dialogue and Roadmap. The government is implementing the energy sector roadmap and policy framework as confirmed in its power sector master plan, 2012-2032 and gas development master plan, 2015-2035. Both master plans are integrated in the NESP roadmap. The power sector substantially met the 2012 strategic objectives and milestones, including (i) greater operational efficiency (hydropower plants and networks rehabilitation); (ii) improvement in sector governance (electricity services law, renewable energy (RE) policy and autonomous power utility, and institutionalization of O&M system); (iii) promotion of rural electrification (off-grid); and (iv) investments in new capacity. The Afghanistan Renewable Energy Policy (AREP) targets 4500-5000 MW of RE capacity by 2032 and envisions a transition from donor grant-funded projects to private-sector led by 2035. The MFF Framework Financing Agreement (FFA) originally prioritized RE Development Projects as part of Tranche 2. But, Government requested a separate tranche for the solar project. Tranche 2, which included more urgent transmission and distribution projects, is still aligned with the NESP, FFA, and MFF. In 2014, ADB approved a TA to develop the Afghanistan RE Roadmap which aims to (i) increase indigenous energy supply, (ii) provide energy services to underserved population, and (iii) enhance rural energy access for livelihood, prioritizing RE in 15 off-grid provinces. The roadmap was adopted in June 2017, with Tranche 3 as a first project.

Implementation Progress. The MFF implementation is satisfactory. Tranche 1, approved 8 December 2015, has 2 turnkey contracts and 3 consulting packages. Tranche 2 approved 5 December 2016, has 3 turnkey contracts. Bid evaluation for all 5 turnkey contracts are almost done with contract awards in October 2017, and construction starting in November and December 2017. Progress on the covenants is satisfactory and none are overdue. The Electricity Services Law, enacted in 2016 following the grant agreement, clarified the roles of DABS and MEW, and provided the legal and regulatory framework for private sector participation in the energy sector. DABS has completed its O&M strategy, in line with international best practice. As covenanted, DABS’ O&M unit became operational in January 2017 and is overseeing the implementation strategy. DABS’ business plan and its tariff model and framework, both developed under an ADB TA, are on track for approval and adoption by 30 June 2018. Thereafter, DABS will regularly adjust tariffs to ensure full cost-recovery. No safeguards issues are outstanding. Turnkey contractors will do detailed design. IEEs and LARPs will be updated and implemented prior to construction.

Milestones

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<th>Estimated Completiona</th>
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<tr>
<td>28 September 2017</td>
<td>31 March 2023</td>
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Linked Documents

<table>
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<th>Required Document</th>
<th>Disclosure Date</th>
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<tr>
<td>(i) MFF Report and Recommendation of the President</td>
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<tr>
<td>(ii) Tranche Draft Periodic Financing Request Report</td>
<td></td>
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<tr>
<td>Weblink: <a href="http://www.adb.org/Documents/LinkedDocs/?id=47282-005-DraftPFRR">http://www.adb.org/Documents/LinkedDocs/?id=47282-005-DraftPFRR</a></td>
<td></td>
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<td>(iii) Environment IEE - Initial Environmental Examination</td>
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</table>

a For Tranches, this refers to the financial closing date.
I. BACKGROUND

1. The multitranche financing facility (MFF) was designed to reinforce ongoing projects and finance new investments to boost energy trade and regional cooperation, strengthen Afghanistan’s energy infrastructure, increase energy supply to accelerate the electrification rate, and improve operational efficiency in the energy sector.\(^1\) In the power subsector, generation (renewable energy), transmission (regional and domestic lines), and distribution (on- and off-grid networks) projects are proposed, while rehabilitation of wells is planned in the gas subsector. The MFF is aligned with priorities of the government’s $10.1 billion National Energy Supply Program 2013 (NESP), which aims to (i) increase the electrification rate from 30% to 83%, (ii) increase domestic generation from 20% to 67%, and (iii) strengthen power exchange and trade options by 2030.\(^2\) Afghanistan’s 30% electrification rate ranks it in the lowest 5% in per capita energy consumption globally. However, because of limited government finances, the dismal private investment outlook, and directives from the International Monetary Fund to the government against borrowing, grant funding from development partners will be the major source of NESP financing.

2. Afghanistan has an installed capacity of 620 megawatts (MW).\(^3\) It augments this with 1,247 MW of imports from its neighbors.\(^4\) Of its domestic capacity, 51% (316 MW) is thermal (diesel and furnace oil) with a generation cost of $0.25–$0.35 per kilowatt-hour, which is nearly 4–5 times the cost of imported power. The remaining 49% (303 MW) is from hydro power, which is seasonal and has a capacity factor of less than 40%.\(^5\) Also, Afghanistan’s power system is not synchronized (in phase angles and frequency) with any of the four countries that it imports from, and is split into 10 power islands. This increases costs and reduces reliability of supply. The lack of transmission and distribution infrastructure suppresses latent demand of nearly 2,500 MW. Lack of financing has also left significant renewable energy and fossil fuel reserves untapped.

3. The NESP roadmap for 2013–2030 focuses on energy supply, transmission and distribution, energy efficiency, reinforcing institutions and private sector participation, capacity support, and regulatory strengthening.\(^6\) It underscores an urgent need to construct indigenous conventional generation and for phased development of renewable energy projects.\(^7\) Long project lead times mean continued reliance on imports in the medium term. To accelerate the rate of electrification increase, the Asian Development Bank (ADB) approved tranche 1 of the Energy Supply Improvement Investment Program on 8 December 2015 to build a 500-kilovolt transmission ring to supply major load centers. Tranche 2, approved by ADB on 5 December 2016, is a significant step towards a unified Afghanistan grid through installation of converter

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\(^2\) Government of Afghanistan, Ministry of Energy and Water. 2013. *National Energy Supply Program.* Kabul. The NESP has an investment plan of $10.1 billion, of which $7.3 billion is for generation and network integration, $1.7 billion for major transmission links, and $1.1 billion for subtransmission and distribution in provinces. The NESP was jointly endorsed by the Government of Afghanistan and international development partners in 2013. Because of fiscal challenges, the government is expected to finance less than 5% ($500 million) of the NESP.

\(^3\) Afghanistan Inter-Ministerial Commission for Energy. [https://sites.google.com/site/iceafghanistan](https://sites.google.com/site/iceafghanistan) (2016).

\(^4\) Supply from the 1,247 MW capacity comes from Iran (16%), Tajikistan (25%), Turkmenistan (12%), and Uzbekistan (27%). Import tariffs in the range of $0.020–$0.065 per kilowatt-hour are subsidized by the exporting countries.

\(^5\) The absence of a water treaty with neighboring countries impedes the development of indigenous hydro power, while the refusal by mining investors to meet their contractual obligations is stalling coal or gas-to-power projects.

\(^6\) Gas and coal power plants are envisaged to be developed by the private sector, and development partners are assisting in rehabilitating existing hydro power plants and constructing new plants.

stations to synchronize Turkmenistan imports with domestic generation. Tranche 3 will increase domestic generation through a large-scale solar photovoltaic project, which has a short lead time for installation and commissioning.\(^8\)

4. Afghanistan’s renewable energy resource potential is estimated to be over 300,000 MW, consisting of solar (222,849 MW), wind (66,726 MW), hydro (23,310 MW), and biomass (4,000 MW). Geothermal resources need detailed and costly assessments to ascertain realizable potential. The country experiences long sunny days with about 300 sunny days annually and receives high irradiation, in the range of 4.5–7.0 kilowatt-hours per square meter per day. The project capitalizes on Afghanistan’s solar potential to increase renewable energy generation. It is expected to partially, but quickly, fill the demand-supply gap and improve sustainability of the energy supply in Kabul city. The Government of the United States is also assisting on solar development, with the National Renewable Energy Laboratory providing data on solar irradiation and the United States Agency for International Development financing a 10-MW pilot plant in Kandahar. Other development partners, including the Swedish International Development Agency, International Finance Corporation, and Islamic Development Bank, have been in discussions with the government on solar projects, though no firm commitments have been made.

5. Under tranche 3, the Naghlu Solar Power Project, a 20-MW solar photovoltaic plant will be installed in Surobi district, Kabul province. The project has two main components: (i) construction of a grid-connected solar photovoltaic power plant and support facilities, including upgrading of the existing substation near Surobi, and provision of 3 years of operation and maintenance services; and (ii) capacity development for Da Afghanistan Breshna Sherkat (DABS) and Ministry of Energy and Water (MEW) staff on solar photovoltaic plant design, technical evaluation, grid integration, and operation and maintenance. As part of the project’s site preparation, the site and substation will be prepared to accommodate an additional 10–15 MW of solar photovoltaic capacity for future financing from ADB, other development partners, or the private sector. The project is about 2 kilometers from the Naghlu Hydropower Plant, and the hydro power from this plant will be used to balance the intermittency of the project. The project will connect to the hydro power plant’s substation and transmission line to evacuate its power.

6. The project will provide significant value addition to the power subsector in Afghanistan and is fully aligned with the goals of the MFF and priorities of the NESP. It will (i) add indigenous power to the grid, thus increasing energy security; (ii) provide proof of concept that large, grid-connected solar is technically and financially viable in Afghanistan and that the system can absorb and manage it, thus attracting private sector investments in solar power generation in Afghanistan; (iii) show that ADB is supporting the government to develop a methodology to attract private sector investors as independent power producers; (iv) introduce performance-based contracting for solar power in Afghanistan through the use of a design-build-operate contract; and (v) introduce latest technology to facilitate grid integration of solar power.

II. ASSESSMENT OF IMPLEMENTATION

7. The MFF implementation is satisfactory. To achieve their respective outputs, tranche 1, approved 8 December 2015, has two turnkey contracts and three consulting packages and

\(^8\) Table 1 of the MFF framework financing agreement originally prioritized renewable energy development projects as a component of tranche 2. The government requested the solar project to be processed as a separate tranche (tranche 3). Instead, tranche 2 included more urgent transmission and distribution projects to address lack of power supply and a unified grid, while providing critical linkages with several projects assisted by ADB and other development partners. The approved tranche 2, with a higher amount and wider scope, is still in line with the MFF and the framework financing agreement.
Tranche 2, approved 5 December 2016, has three turnkey contracts. Transmission and distribution projects scheduled for later tranches proved more urgent and were included in tranche 2 in place of a renewable energy project, which is now tranche 3 (footnote 8). Tranches 1 and 2 are on track, with capacity and governance support activities ongoing, including the preparation of tranche 3. The framework financing agreement and tranche covenants are ongoing. No environmental or social safeguards issues are outstanding and there are no overdue covenants. Bid evaluation for all five turnkey contracts are almost done and contract awards are expected in October 2017. Upon contract award, detailed design will be undertaken by the turnkey contractors and all safeguards, including initial environmental examinations (IEEs) and land acquisition and resettlement plans, will be updated and implemented before construction begins in early 2018.

8. To avoid implementation delays, project land titling is covenanted under tranche 3. A security plan, with community and women participation, is part of the design-build-operate (DBO) contract package. The DBO contract includes three years of operation and maintenance services and is the first such contract to be procured in an ADB project in Afghanistan. The DBO contract will enable intensive capacity building, technology transfer, and performance guarantees.

9. Policy framework. The government is implementing the energy sector road map, policy framework, and the envisaged investment plan as confirmed in its power sector master plan, 2012–2032 and gas development master plan, 2015–2035, both of which are integrated in the NESP. The enacted 2016 Electricity Services Law provides a legal and regulatory framework, and a transparent structure for private sector participation.9 The power subsector in Afghanistan made substantial progress in meeting the strategic objectives and milestones set out in 2012, including (i) greater efficiency from existing operations (rehabilitation of hydro power plants and transmission and/or distribution networks), (ii) improvement in sector governance (formulation of electricity services law, renewable energy policy and autonomous power utility, and institutionalization of operations and management system), (iii) promotion of rural electrification (development of off-grid networks), and (iv) investments in new capacity (development of additional generation, transmission, and distribution systems).

10. Road map and strategic context. The NESP road map, 2013–2030 focuses on energy supply, transmission and distribution, energy efficiency, reinforcing institutions and private sector participation, and capacity support and regulatory strengthening. It underscores an urgent need to construct indigenous generation capacity (gas, coal, and hydro power). The road map also stresses the phased development of renewable energy projects in 15 off-grid provinces. Out of the NESP, the Afghanistan Renewable Energy Policy sets a target of deploying 4,500–5,000 MW of renewable energy capacity by 2032 and envisions a transition from donor grant-funded renewable energy projects to an industry fully led by the private sector by 2032.

11. In 2015, ADB provided technical assistance to the MEW to develop a renewable energy road map for Afghanistan (footnote 7). The vision of the road map is to guide policy makers, the private sector, developers, and other key stakeholders in shaping the renewable energy sector in Afghanistan. The objectives of the road map are to (i) increase the supply of energy from domestic resources, (ii) augment energy services to population and load centers that are either not served or are poorly served, and (iii) enhance energy access to remote rural populations for their livelihood needs. The Renewable Energy Roadmap for Afghanistan was presented to the government on 3 May 2017 and subsequently accepted as its official road map in June 2017. Tranche 3 will be one of the first activities implemented under the renewable energy road map.

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9 Under the law, the MEW will initially act as regulator. ADB will provide support to strengthen the tariff determination framework and possible regulatory support under the MFF.
III. PERIODIC FINANCING REQUEST

A. Impact and Outcome

12. The impact is aligned with the improved access to sustainable energy supply across Afghanistan. This is in line with the targets of the NESP and the Afghanistan Renewable Energy Policy of the Government of Afghanistan. The outcome is supply of indigenous renewable energy in Afghanistan increased.

B. Outputs

13. The project outputs are as follows: (i) solar photovoltaic power plant with transformer and support facilities installed and operational, and 3 years of operation and maintenance services completed; and (ii) technical capacity of DABS and MEW on solar photovoltaic plant design, technical evaluation, grid integration, and operation and maintenance increased. The project will generate at least 43,000 megawatt-hours of solar power and avoid at least 13,000 tons of carbon dioxide equivalent in the first full year of operation.

C. Investment and Financing Plans

14. The project is estimated to cost $46.50 million, of which $44.76 million will be financed on a grant basis by ADB. A summary of the investment plan is in Table 1 and the detailed breakdown is in the facility administration manual (FAM) in Appendix 4.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amounta</th>
</tr>
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<tbody>
<tr>
<td><strong>A. Base Costb</strong></td>
<td></td>
</tr>
<tr>
<td>1. Turnkey contract</td>
<td>36.51</td>
</tr>
<tr>
<td>2. Recurrent Cost</td>
<td>2.30</td>
</tr>
<tr>
<td><strong>B. Contingenciesc</strong></td>
<td>5.95</td>
</tr>
<tr>
<td><strong>C. Financing Charges During Implementationd</strong></td>
<td>1.74</td>
</tr>
<tr>
<td><strong>Total (A+B+C)</strong></td>
<td>46.50</td>
</tr>
</tbody>
</table>

O&M = operation and maintenance.

a Cost estimates includes Afghanistan’s business receipt tax and sales-type taxes (range from 4% to 7%) and duties (10%).

b In 2017 prices.

c Physical contingencies computed at 10% of the base cost. Price contingencies computed at 3% on foreign exchange cost and 7% on local currency cost.

d Includes interest during construction calculated at an interest rate of 1% of the loan between the government and DABS. Interest during construction is capitalized during the loan period.

Source: Consultant, DABS, and Asian Development Bank estimates.

15. The financing plan is in Table 2. The government requested a grant not exceeding $44.76 million from ADB’s Asian Development Fund (ADF) resources. The grant proceeds will be onlent parallel cofinancing is being explored with the Islamic Development Bank.

10 A country’s eligibility for ADF grants under the revised grant framework is determined by its risk of debt distress. The latest debt sustainability analysis determined that Afghanistan had a high risk of debt distress and was, therefore, eligible to receive 100% of its ADF allocation as grants.
to DABS by the Ministry of Finance on terms acceptable to ADB, including a financing period of 32 years, a grace period of 8 years, and an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter. DABS will finance $1.74 million equivalent to cover costs related to financing charges during implementation.

16. The government requested that ADB finance security costs, local taxes, and duties, including business receipts tax and customs payments, consistent with the approach taken with other recent ADB-financed projects in Afghanistan.12

<table>
<thead>
<tr>
<th>Table 2: Financing Plan</th>
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</thead>
<tbody>
<tr>
<td><strong>Source</strong></td>
</tr>
<tr>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>Government</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Source: Consultant, DABS, and Asian Development Bank estimates.

D. Implementation Arrangements

17. DABS, a 100% state-owned corporate entity responsible for power generation, transmission, and distribution in Afghanistan, will be the executing agency. DABS was incorporated in March 2008 and became operational on 30 September 2009 through a presidential decree.

18. DABS established a full-time program management office (PMO) in 2009, recruited under ADB’s first energy MFF—the Energy Sector Development Investment Program.13 The PMO administers all consulting and procurement contracts and is responsible for preparing project plans, bid evaluation reports, progress reports, applications for withdrawal of funds, and all other reports required by ADB.

19. The project’s design–build–operate (DBO) contract will be funded by the ADB grant. Project implementation supervision will be through the PMO in DABS. The PMO will be assisted by project implementation consultants financed under the MFF (footnote 1).14

20. Procurement of works and goods will follow ADB’s Procurement Guidelines (2015, as amended from time to time) using international competitive bidding for the DBO contract package. ADB will disburse the funds for the DBO contract package through direct payment and commitment procedures.

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14 Various evaluation note problems with design–build contracts, especially for transport, have resulted in significant cost overruns and implementation delays. However, in the case of solar, DBO contracts are the industry standard. In addition, DBO contracts are performance based, i.e., the winning bidder is required to provide the guaranteed power output and performance ratio and rectify if not met, and is subject to related liquidated damages.
21. The implementation arrangements are summarized in Table 3 and described in detail in the FAM (Appendix 4).  

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Arrangements</th>
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<tbody>
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<td>Implementation period</td>
<td>January 2018–March 2023</td>
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<tr>
<td>MFF availability period</td>
<td>31 December 2025</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td></td>
</tr>
<tr>
<td>(i) Oversight body</td>
<td>Ministry of Finance, with deputy minister of finance as chair</td>
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<tr>
<td>(ii) Executing agency</td>
<td>Da Afghanistan Breshna Sherkat</td>
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<tr>
<td>(iii) Implementation unit</td>
<td>Program management office in DABS</td>
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<td><strong>Procurement</strong></td>
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<td>International competitive bidding</td>
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<td><strong>Consulting services</strong></td>
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<td>QCBS, LCS, and individual</td>
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<tr>
<td><strong>Retroactive financing and/or advance contracting</strong></td>
<td>DBO contractor and consultants will be engaged under advanced contracting. Retroactive financing is not required.</td>
</tr>
<tr>
<td><strong>Disbursement</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The grant proceeds will be disbursed in accordance with ADB’s <em>Loan Disbursement Handbook</em> (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.</td>
</tr>
</tbody>
</table>


E. Project Readiness

22. Project preparatory consultants conducted due diligence on the project. The government has concurred with the project scope and schedule, and for DABS to be the executing agency for the project. DABS has an existing PMO that is staffed and operational. The project’s solar expert prepared the feasibility study and the procurement consultant prepared the bidding documents. The invitation for bids is scheduled to be released in the fourth quarter of 2017. The project will also provide implementation consultants to assist the PMO in bid evaluation and evaluation report preparation. The project was designed in line with the Afghanistan: Enhanced Project Delivery Approach Paper, including measures to address procurement (readiness and broadening qualification requirements), security, and PMO capacity.

F. Advance Contracting and Retroactive Financing

23. The project will be a DBO contract, which will require the use of nonstandard documents that are currently under review. All contracts will be awarded and signed after the approval of tranche 3 by ADB Management, signing of the grant agreement, and grant effectiveness. Retroactive financing is not required for the project.

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15 Facility Administration Manual (accessible from the list of linked documents in Appendix 2).
16 Tranche 1 (G0134) under the Energy Sector Development Investment Program has a component to conduct due diligence and prepare projects that are listed under the government’s National Energy Supply Program. Additional consultants were engaged under the technical assistance for renewable energy development (footnote 7).
IV. DUE DILIGENCE

A. Technical

24. The proposed Naghlu Solar Power Project is envisioned to improve energy supply in Afghanistan by adding 20 MW of electricity into the North East Power System that feeds into the Kabul city power grid.

25. The project will include the design, construction, and installation of a 20 MW crystalline photovoltaic power plant; upgrade of the existing Surobi substation through installation of an additional 110/20 kilovolt, 20 mega volt amp transformer to accommodate the additional power; installation of the required transmission and support systems for power evacuation; installation of support facilities;\(^\text{18}\) 3 years of operation and maintenance services; and capacity development for DABS and MEW staff on solar photovoltaic plant design, technical evaluation, grid integration, and operation and maintenance. The expected energy output in the first full year of operation of the solar photovoltaic plant is 43,000 megawatt-hours. The power output is subject to an annual performance degradation of 0.5%. The plant is expected to avoid 13,000 tons of carbon dioxide equivalent of greenhouse gas emissions in the first full year of operation.

B. Economic and Financial

26. The main benefit derived from the project is increased indigenous electricity supply that the solar power plant will produce and evacuate to the grid. The analyses compare the incremental costs and benefits of with- and without-project scenarios.

27. A financial evaluation was carried out in accordance with ADB’s Guidelines for the Financial Management and Analysis of Projects.\(^\text{19}\) Tranche 3 is financially viable, with a financial internal rate of return of 5.9%, which is greater than the weighted average cost of capital of 0.3%. A sensitivity analysis found the project’s financial viability remained robust in the cases of (i) a 10% increase in capital costs, (ii) a 10% increase in operation and maintenance costs, (iii) a 10% decrease in generation, and (iv) a 1-year delay in completion.

28. The economic evaluation was completed in accordance with ADB’s Guidelines for the Economic Analysis of Projects.\(^\text{20}\) The economic internal rate of return of 12.5% justifies the viability of tranche 3. A sensitivity analysis found the project’s economic viability remained robust in the cases of (i) a 10% increase in capital costs, (ii) a 10% decrease in benefits, and (iii) a 1-year delay in completion, with the results comparing favorably with the economic opportunity cost of capital of 9.0% in all cases.

C. Governance

29. A financial management assessment (FMA) and a procurement capacity assessment were undertaken for DABS in 2017. The FMA found that DABS has not been following the International Financial Reporting Standards. The FMA states that premitigation risks are substantial for the program, however necessary reforms are under way to mitigate these risks. The annual financial statements of DABS from fiscal year (FY)2010 to FY2015 have been audited with disclaimers and qualified opinions. The asset revaluation, one of the items under the reform

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\(^{18}\) These include such facilities as a storage warehouse, office building, and septic system to treat waste water.


program, was revalued and completed during FY2016. The project financial statements have also been prepared, audited, and submitted to ADB since 2010. The 2017 procurement capacity assessment confirms that the country’s procurement system is weak but improving. The National Procurement Authority, established in 2015 and chaired by the Afghan president, undertakes due diligence for approval of all contract packages. DABS has been implementing donor-assisted projects, including by ADB and the World Bank, and the PMO is extremely proficient with procurement procedures of donors.

30. DABS’s financial performance is projected to be stable to support the project’s operation and maintenance costs. The Government of the United States is implementing a capacity support component in DABS to introduce a new accounting system and manual.

31. Tranche 1 of the MFF is supporting DABS to develop its business plan, tariff model, and framework by 30 June 2018. Adequate financial covenants (profitability and operational ratios) and operational covenants (technical, tariff, and loss reduction) will be instituted in subsequent tranches, following the completion of the business plan and findings of the tariff model.

32. ADB’s Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and DABS. The specific policy requirements and supplementary measures are detailed in the updated FAM (Appendix 4).

D. Poverty, Social, and Gender Dimensions

33. The project will improve socio-economic conditions through increased power supply to the grid. The project does not entail direct impacts on affordability. It will create employment opportunities during construction and operations. During construction, the contractor will be required to ensure equal opportunities for all social groups, equal pay for equal work regardless of gender, and prohibition of child labor.

34. Tranche 3 is categorized as having no gender elements. However, gender targets for capacity building and project implementation, and corresponding monitoring of the achievement of these targets are part of the project design. The benefits of electrification would benefit all, regardless of gender.

E. Safeguards


36. The solar photovoltaic power plant and related facilities will be installed on an aggregated area of 70 hectares in Surobi district, Kabul province. The land is unoccupied public land, owned by the government, is not used by any individual including indigenous peoples, and is without any encumbrance including encroachment, squatters, and any informal settlements either for residential or commercial purposes. Accordingly, there are no land acquisition or involuntary resettlement impacts.

37. The area surrounding the project site is only lightly populated, mostly by two major ethnic groups, Tajiks and Pashtuns, who live in the project zone of influence but not in the very vicinity of the selected project site. Based on ADB’s SPS, these ethnic groups do not fall under the

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21 The basis of qualified opinion in 2014 and 2015 was mainly due to there being no reliable information on the existence, accuracy, and completeness of the property, plant, and equipment lists.
category of indigenous peoples and, thus, the project does not have any indigenous peoples impacts.

38. DABS has prepared an IEE report including an environmental management plan (EMP) for the project in accordance with the SPS, and the environmental assessment results framework was reviewed and deemed to still be relevant. The IEE was disclosed on ADB’s website on 4 July 2017. According to the IEE, the main impact during the land preparation phase of construction includes mainly movement of heavy vehicles, noise, dust, and waste. The impact during the installation of solar photovoltaic arrays, transformer, and related facilities are minimal and only during movement of delivery vehicles. Similarly, the main impacts of plant operations, such as washing of the photovoltaic arrays, are minimal. The management of these impacts is outlined in the EMP. Public consultations were held on 15 May 2017 and the project received strong support. The PMO has the capacity to adequately implement the EMP. Since the project will be a DBO contract, the contractor will also need to conduct detailed consultations and prepare and implement a detailed EMP.

39. The project’s climate change risk was rated *medium* because of the possibility of flooding in the project site. The contractor will have to construct a flood management and drainage system to manage this risk.

40. DABS will develop and implement an appropriate corrective action plan agreed upon with ADB to rectify any default on the safeguard requirements covenanted in the legal agreements or any other failure to comply with safeguards. These reports and any corrective action plans submitted by DABS during implementation will be disclosed on ADB’s website.

F. Risks and Mitigating Measures

41. Major risks and mitigating measures are summarized in Table 4. The overall assessment is that risks have been identified and mitigated and that the integrated benefits and impacts are expected to outweigh the costs.

<table>
<thead>
<tr>
<th>Risks</th>
<th>Mitigating Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance and capacity issues could negatively affect the project</td>
<td>All procurement and consultant recruitment will follow ADB’s procurement guidelines, be endorsed by the National Procurement Authority, and require approval of ADB. Procurement oversight will be closely complemented by a credible complaint review mechanism and access to procurement-related information on the DABS and ADB websites.</td>
</tr>
<tr>
<td>Procurement and implementation of DBO contract could be delayed</td>
<td>Procurement packaging will be minimized, with one implementation consulting services package and one DBO contract package. International individual consultants and consulting firms will be recruited to help DABS procure the DBO contract and manage project implementation.</td>
</tr>
<tr>
<td>The project could encounter cost overruns.</td>
<td>The cost estimates are consistent with recent DBO contract awards in similar settings and are adjusted for the Afghanistan context. The project scope has been well defined, with clear interface boundaries, and adequate contingency has been provided in the financing plan.</td>
</tr>
<tr>
<td>Difficult security environment could</td>
<td>Advertisements in leading solar industry publications and prebid meetings will be done to showcase business opportunities in Afghanistan. International</td>
</tr>
</tbody>
</table>

22 Given the security situation in the area, public consultations are difficult. As such, smaller meetings were held with a cross-section of representatives from the village, small business, government officials, and others.
Risks | Mitigating Measures
--- | ---
Affect procurement of quality contractors and consultants and thereby delay project implementation | Consulting firms will be recruited to help DABS in the procurement of the DBO contract and in managing project implementation.

Increased security risk during project implementation | Preparation of a security plan will be required from the contractor and the consultant. Project funds have been allocated to cover additional government security measures as identified in the security plan. Security measures will include coordination with the International Security Assistance Force, Afghan National Police, and Afghan Public Protection Force.

**G. Risk Categorization**

42. The project is considered *low risk* because of the following factors: (i) its ADF amount does not exceed $200 million; (ii) the sound record of ADB experience in the sector, and particularly in the investment program; (iii) adequate capacity of the executing agency to implement externally financed projects; (iv) no integrity concerns have been identified; (v) medium climate risk is envisaged; (vi) safeguards classifications other than A, as cited in paras. 34–37; (vii) no waiver of an applicable ADB policy is envisaged; and (viii) high-level technology does not apply.

**V. ASSURANCES AND CONDITIONS**

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

44. The grant agreement will not be effective until the subsidiary loan agreement between Afghanistan and DABS, and the project agreement between DABS and ADB, have been executed and have become effective in accordance with their terms.

45. Grant proceeds will not be disbursed until an updated IEE and EMP have been approved by ADB, and legal title to the land allocated to the project has been transferred to DABS.

**VI. RECOMMENDATION**

46. On the basis of the approval by ADB’s Board of Directors for the provision of grants under the multitranche financing facility in an aggregate principal amount not exceeding the equivalent of $1,200,000,000 to the Islamic Republic of Afghanistan for the Energy Supply Improvement Investment Program, it is recommended that the President approve the proposed tranche as described in para. 15 and such other terms and conditions as are substantially in accordance with those set forth in the draft grant and project agreements for the proposed tranche.