

Project Administration Manual

Project Number: 41340-015
Loan Number: XXXX
August 2015

Republic of Uzbekistan: Advanced Electricity
Metering Phase 4 Project

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Project Administration Manual Purpose and Process

1. The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.
2. Uzbekenergo, the executing agency, is wholly responsible for the implementation of ADB financed project, as agreed jointly between the borrower and ADB, and in accordance with government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by Uzbekenergo of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.
3. At Loan Negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the Loan agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.
4. After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

Abbreviations

| | | |
|------|---|--------------------------------------|
| ADB | = | Asian Development Bank |
| AEM | = | advanced electricity metering |
| EA | = | executing agency |
| GOU | = | Government of Uzbekistan |
| ICB | = | international competitive bidding |
| MDM | = | meter data management |
| MOF | = | Ministry of Finance |
| PAM | = | project administration manual |
| RPIU | = | regional project implementation unit |
| PMU | = | project management unit |
| QCBS | = | quality- and cost-based selection |
| TOR | = | terms of reference |

I. PROJECT DESCRIPTION

1. **Project's rationale, location and beneficiaries.** The project will install an advanced electricity metering (AEM) system that uses modern, accurate, and tamper-proof revenue meters for the power grid system and end-users in five regions (Andijan, Fergana, Kashkadarya, Namangan, Surkhandarya) to complete nation-wide roll-out of AEM in Uzbekistan.¹ The project will help improve energy efficiency in the power distribution sector by reducing commercial losses and improving the efficiency of electricity revenue collection. The project will include installation of approximately 3.1 million meters together with integrated, meter-to-cash solutions, and a capacity development component to help Uzbekenergo and its customers effectively adopt and utilize the new technology.²

2. **Impact and Outcome.** The impact will be improved financial viability in the power sector. The project will help ensure i) accurate accounting and billing of energy, ii) commercial loss reduction, and iii) improved energy efficiency. The outcome will be improved electricity revenue collection in the targeted regions. The project will cover Andijan, Fergana, Kashkadarya, Namangan, and Surkhandarya regions. The project will improve metering accuracy, billing efficiency, and tariff collection rates and will provide anti-tampering and fault-detection capability to Uzbekenergo.

3. Outputs

- (i) AEM infrastructure installed and functional
- (ii) Operations manual adopted and loss reduction operations strengthened
- (iii) Customer service for end-users improved

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

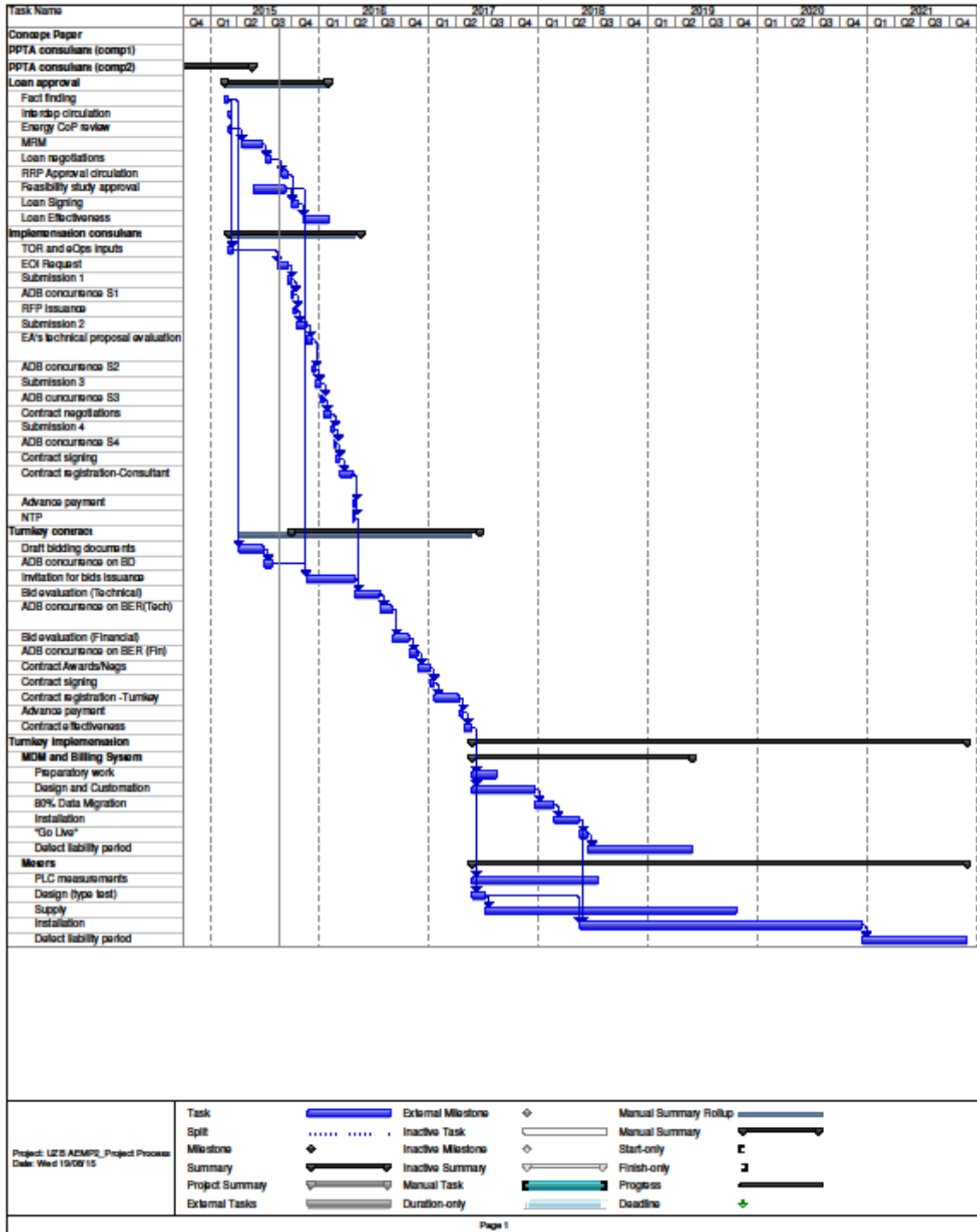
| Indicative Activities | 2015 | | | | | | | | | | | | 2016 | | Responsibility | | |
|--|------|---|---|---|---|---|---|---|---|----|----|----|------|---|----------------|--|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | | | |
| Advance contracting actions (consulting services) (main turnkey contracts) | | | | | | X | | | | | | | | | | | EA-PMU |
| Retroactive financing actions (consulting services) | | | | | | | | | | X | | | | | | | EA-PMU |
| Loan negotiations | | | | | | | X | | | | | | | | | | EA |
| ADB Board approval | | | | | | | | | X | | | | | | | | ADB |
| Loan signing | | | | | | | | | | X | | | | | | | ADB-GOU |
| Government Legal opinion provided | | | | | | | | | | | | | | X | | | GOU |
| Government budget inclusion | | | | | | | | | | | | | | X | | | GOU |
| Loan effectiveness | | | | | | | | | | | | | | X | | | GOU-ADB |

ADB = Asian Development Bank, EA = Executing Agency; GOU = Government of Uzbekistan; PMU = project management unit

¹ Rollout of AEM started with the Phase 1 Project. ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Uzbekistan for the Advanced Electricity Metering Project*. Manila. Phase 2 covering Tashkent City, Tashkent Region and Syrdarya Region was financed by the World Bank. Phase 3 covering Karakapakistan, Khorezm, and Navoi Regions was financed by the Islamic Development Bank.

² The Asian Development Bank (ADB) provided project preparatory technical assistance for the project.

B. Overall Project Implementation Plan



III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Project Implementation Management Roles and Responsibilities Organizations

| | |
|--|--|
| <ul style="list-style-type: none">Ministry of Finance (MOF) on behalf of the Republic of Uzbekistan | Borrower <ul style="list-style-type: none">➤ Ministry representing for external borrowing.➤ Ensuring loan proceeds are used in accordance with the Loan Agreement➤ Handling of issues pertaining to project-related taxes and duties➤ Electricity tariff setting |
| <ul style="list-style-type: none">Joint Stock Company (JSC) Uzbekenergo | Executing Agency <ul style="list-style-type: none">➤ Project execution, including consultant recruitment and procurement of turnkey contracts➤ Project and assets owner➤ Funding meter installation cost, project management unit (PMU) recurrent costs, and balance of project cost (financial charges).➤ Coordination with other advanced electricity metering projects in other regions for system compatibility and project implementation scheduling➤ Establishment of a Metering and Testing Unit, with support units at each PES level. Ensuring funds provision for staff, equipment and operations of the unit established.➤ Project progress reporting to ADB and UFRD |
| <ul style="list-style-type: none">Regional Distribution Enterprises (PES) of Uzbekenergo (Andijan, Fergana, Namangan, Kashkadarya, and Surkhandarya) | Regional project implementation unit <ul style="list-style-type: none">➤ Consignee of the turnkey contracts➤ Providing meter installation personnel at each distribution enterprise in the region.➤ Support for the Metering and Testing Unit.➤ Support for turnkey contractors' and consultant's activities➤ Support for PMU's project activities |
| <ul style="list-style-type: none">Uzbekistan Fund for Reconstruction and Development (UFRD) | Cofinancier <ul style="list-style-type: none">➤ Funding partially the turnkey contracts |
| <ul style="list-style-type: none">ADB | Lender <ul style="list-style-type: none">➤ Main project financier |

B. Key Persons Involved in Implementation

Executing Agency

| | | |
|-----------------|----------------|--|
| JSC Uzbekenergo | Officer's Name | Muzaffar Hakimov |
| | Position | Deputy Chairman of the Board |
| | Telephone | +998 71 236 3428 Fax : +998 71 233 5950 |
| | Email address | mhakimov@uzbekenergo.uz |
| | Office Address | JSC Uzbekenergo 6 Istiklol Street, Tashkent, 100000, Uzbekistan |

| | |
|----------------|---|
| Officer's Name | Zafar Karimov |
| Position | Project Director |
| Telephone | +998 97 233-9825 Fax : +998 71 236 2700 |
| Email address | aem-pmu@mail.ru; aem-pmu@uzbekenergo.uz |
| Office Address | [AEM Phase 4 Project Management Unit] JSC Uzbekenergo 6 Istiklol Street, Tashkent, 100000, Uzbekistan |

ADB

| | | |
|-------------------|---------------|---|
| Division Director | Staff Name | F. Cleo Kawawaki |
| | Position | Director, Energy Division, Central and West Asia Department (CWRD/CWEN) |
| | Telephone No. | +63-2-632-6113/5950 |
| | Email address | cwen@adb.org ; fkawawaki@adb.org |

| | | |
|----------------|---------------|--|
| Mission Leader | Staff Name | Keiju Mitsuhashi |
| | Position | Senior Energy Specialist, CWEN |
| | Telephone No. | +998 71 140 1920 to 1925 ex.228 |
| | Email address | kmitsuhashi@adb.org |

C. Project Organization Structure

4. JSC Uzbekenergo, the project executing agency (EA), has established a dedicated full-time project management unit (PMU). The PMU will administer all consulting and procurement contracts on behalf of Uzbekenergo.

5. The Director of the PMU will report directly to the Chairman of JSC Uzbekenergo. The PMU will be the main point of contact for working communication between JSC Uzbekenergo and ADB. The PMU will coordinate the consultants and contractors.

6. The PMU, assisted by the consultants, will prepare and submit the necessary project plans, request for proposal and bidding documents, proposal and bid evaluation reports, progress reports, applications for withdrawal of funds, and any other required reports to ADB.

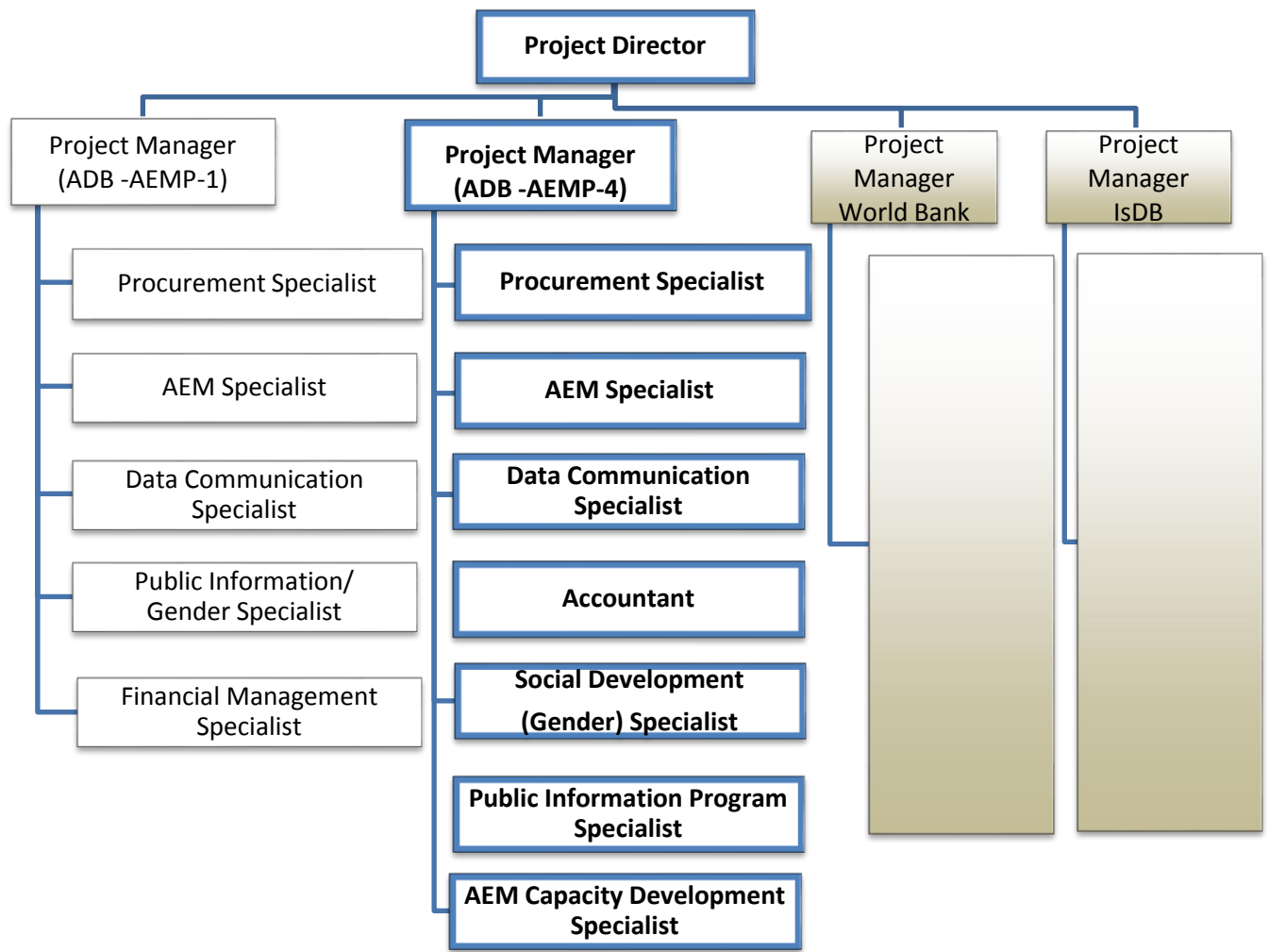
7. The PMU Director and PMU staff will have appropriate academic qualifications with experience of working on large investment project implementation and/or operations. The Procurement Specialist, AEM Specialist, Data Communication Specialist, Social Development (Gender) Specialist, Public Information Program Specialist, Financial Management Specialist/Accountant, and AEM Capacity Development Specialist will have relevant experience and academic qualifications in their specialty area. The PMU specialists will be hired and assigned in a timely manner, and when their inputs become necessary.

8. The PMU will include the positions with the following terms of reference (TOR):

| Position | Terms of Reference |
|---|--|
| Project Director, Project Management Unit (PMU) | <ul style="list-style-type: none"> • Provide overall direction and management of PMU. • Ensure project is delivered on schedule to budget and specification • Ensure relationships with financiers, consultants, and contractors • Ensure appropriate reporting to financiers • Ensure Chairman Uzbekenergo is appraised of project developments on ongoing basis • Coordinate with Directors, Regional Distribution Enterprises (PES) in the respective regions. • Coordinate all AEMP projects in other regions and ensure system and specification compatibility and project implementation scheduling. • Coordinate with relevant government offices and agencies • Ensures that the PMU regularly submits project progress reports to ADB and other co-financiers. • Coordinates with Uzbekenergo for developing an effective metering and testing unit structure at each of the PES. • Ensuring that data requirements of ADB relating to the Project are met and all project information is shared with ADB on a timely basis. • Ensure that any policy change effecting the Project or financial sustainability of the companies is reported to ADB on a timely basis. |
| Project Manager | <ul style="list-style-type: none"> • Assist Director PMU in delivery of his/her duties • Manage the project implementation, schedule and budget • Manage PMU staff and PMU activities • Manage supervision and project management consultant and contractors • Undertake administrative coordination and liaising with financiers • Prepare project reports, and other project documentation • Coordinate with Regional Managers, Regional Project Implementation Units (RPIUs), PES, in the respective regions. • Coordinate with other AEM projects in other regions to ensure system and specification compatibility and project implementation scheduling. • Be responsible for keeping record of all project related correspondence and data. • Be responsible for coordinating ADB missions and meetings with PMU, Uzbekenergo and the PES. |
| Procurement Specialist | <ul style="list-style-type: none"> • Lead recruitment of project management and supervision consultant • Lead procurement of goods and works • Provide inputs, identify and resolve issues in the area of specialty • Monitor compliance of consultants and contractors with contract requirements • Assist Project Manager in contract administration of the consultants and contractors • Prepare overall project progress report • Prepare contract award and disbursement projections • Coordinate with other Specialists in the PMU and RPIUs in the respective regions • Coordinate with Specialists in other AEM Projects |
| AEM Specialist | <ul style="list-style-type: none"> • Provide inputs, identify and resolve issues in the area of specialty, including quality assurance • Monitor consultants and contractors progress and delivery to contract • Review submission by consultants and contractors in area of specialty • Prepare progress reports • Assist Project Manager in delivery of his/her duties |

| Position | Terms of Reference |
|--|---|
| | <ul style="list-style-type: none"> • Coordinate with other Specialists in the PMU and RPIUs in the respective regions • Coordinate with Specialists in other AEM Projects |
| Data communication Specialist | <ul style="list-style-type: none"> • The same as above. |
| Accountant | <ul style="list-style-type: none"> • Maintain project accounts • Prepare withdrawal applications • Prepare reports on the project disbursement as required by respective financiers and government authorities • Monitor loan covenants • Prepare project financial statements and reports • Provide inputs, identify and resolve issues in the area of specialty • Assist Project Manager in delivery of his/her duties • Coordinate with other Specialists in the PMU and RPIUs in the respective regions • Coordinate with Specialists in other AEM Projects |
| Social Development (Gender) Specialist | <ul style="list-style-type: none"> • Ensure the implementation of the public information program • Ensure the implementation of gender action plan • Coordinate with Women's Committee • Provide inputs, identify and resolve issues in the area of specialty • Prepare progress reports • Assist Project Manager in delivery of his/her duties • Coordinate with other Specialists in the PMU and RPIUs in the respective regions • Coordinate with Specialists in other AEM Projects |
| Public Information Program Specialist | <ul style="list-style-type: none"> • Facilitate the implementation of the PIP. • Assess if the current policies and practices are adequate for the current and future operation needs in compliance with the national and international (including ADB) standards and requirements • Provide the necessary support to UE for PIP implementation. • Develop awareness program and materials. • Conduct training sessions in 5 project regions and maintain the desired level of capacity development awareness/public information in coordination with the project Social/Gender Specialist • Assist PMU to recruit local NGOs and /or relevant agencies for the conduction of training modules and development of mass media products/services (if needed) • Act as the main focal point/contact for public information campaigns and CDP' activities between the project, UE, ADB, NGOs and other consultants |
| AEM Capacity Development Specialist | <ul style="list-style-type: none"> • Facilitate the implementation of the AEM capacity development program. • Assess if the current policies and practices are adequate for the current and future operation needs in compliance with the national and international (including ADB) standards and requirements • Provide the necessary support to UE for CDP implementation. • Develop AEM CDP and materials with the assistance of project implementation consultant. • Coordinate with relevant institutions, including Tashkent State Technical University, and facilitate the implementation of CDP together with project implementation consultant. • Act as the main focal point/contact for CDP activities between the project, UE, ADB, NGOs and other consultants. |

9. The PMU organizational structure will be as below:



10. Each of the respective regional distribution enterprises (PES) will establish a regional project implementation unit (RPIU) appoint and make available a responsible Regional Manager, under the supervision of Director, PES, and necessary project staff to coordinate with the PMU and manage the project implementation in each region.

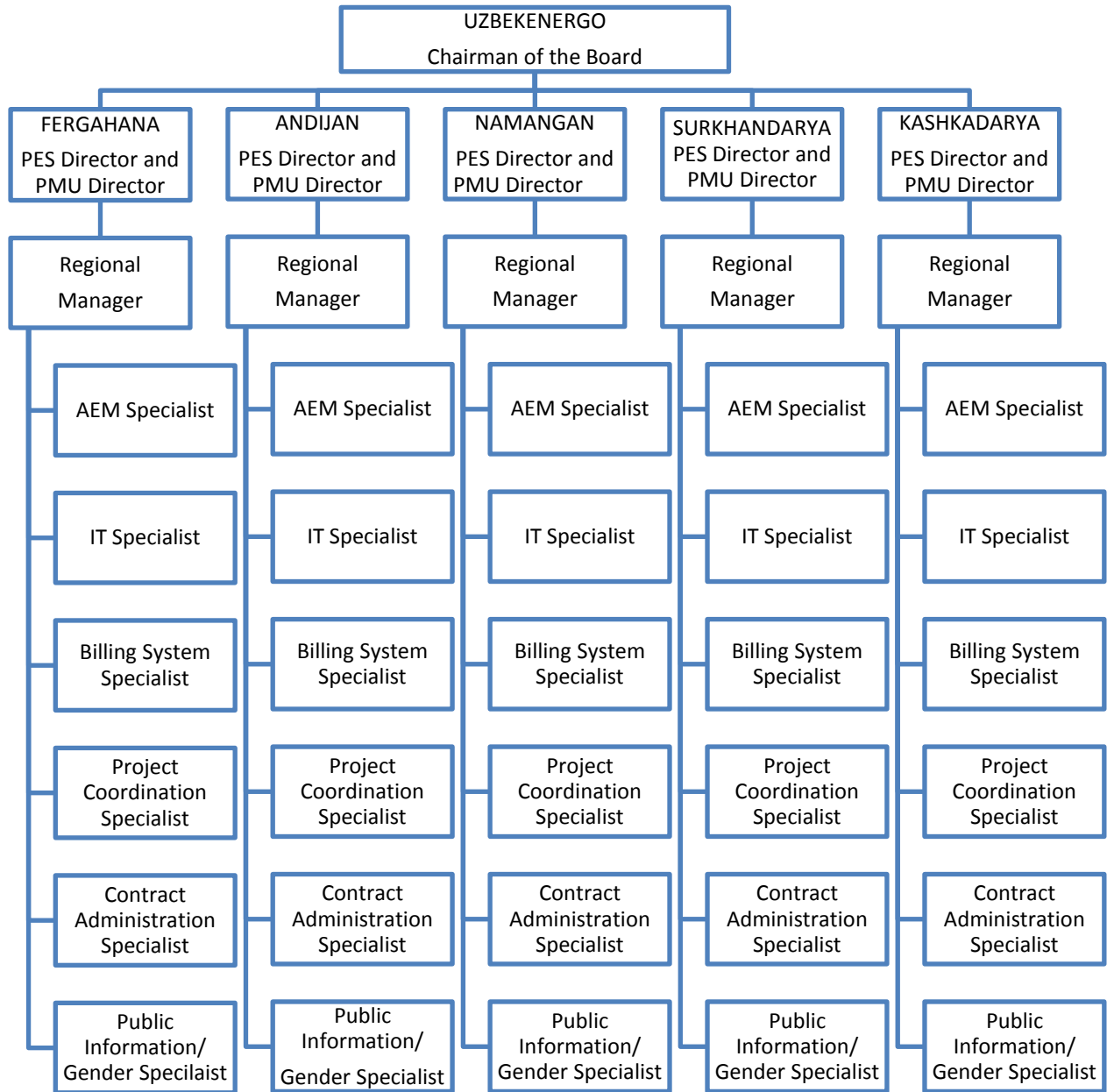
11. Each of the respective Regional Managers will have appropriate academic qualifications with experience in project implementation and/or operations. The AEM Specialist, IT Specialist, Project Coordination Specialist, Contract Administration Specialist, and Public Information/Gender Specialist, will have relevant experience and academic qualifications in their specialty area.

12. The RPIUs will include the positions with the terms of reference as the following: The Terms of Reference of the Regional Manager, RPIUs and RPIU staff are as:

| Position | Terms of Reference |
|--------------------------------------|--|
| Regional Manager | <ul style="list-style-type: none"> • Assist Director PMU in delivery of his/her duties • Ensure the Director, Regional PES in respective regions is appraised of project developments on ongoing basis • Manage project management and supervision consultant and contractors, and coordinate with them at the regional level • Manage the project implementation, schedule and budget at the regional level • Manage the installation works and supervise database creation activities • Manage RPIU staff and RPIU activities • Prepare regional project reports, and other project documentation • Coordinate with Project Manager, PMU • Act as focal point for coordination with ADB during reviews and missions to the respective region. |
| AEM Specialist (Regional) | <ul style="list-style-type: none"> • Provide inputs, identify and resolve issues in the area of specialty, including quality assurance at the regional level • Monitor consultants and contractors progress and delivery to contract • Review submission by consultants and contractors in area of specialty • Prepare progress reports • Assist Regional Manager in delivery of his/her duties • Coordinate with other Specialists in the RPIU and PMU |
| IT Specialist (Regional) | <ul style="list-style-type: none"> • Same as above |
| Project Coordination Specialist | <ul style="list-style-type: none"> • Lead tasks required for warehouse management, inventory management, transport arrangements of equipment and material deliveries, and installation personnel arrangements • Coordination with consultants, contractors and installation personnel • Provide inputs, identify and resolve issues in the area of specialty • Monitor consultants and contractors progress and delivery to contract • Review submission by consultants and contractors in area of specialty • Prepare progress reports • Assist Regional Manager in delivery of his/her duties • Coordinate with other Specialists in the RPIU and PMU |
| Contract Administration Specialist | <ul style="list-style-type: none"> • Lead contract administrative matters at the regional level • Maintain project accounts at the regional level • Prepare project financial statements and reports at the regional level • Provide inputs, identify and resolve issues in the area of specialty • Review submission by consultants and contractors in area of specialty • Coordination with consultants, contractors and installation personnel • Monitor consultants and contractors progress and delivery to contract • Prepare progress reports • Assist Regional Manager in delivery of his/her duties • Coordinate with other Specialists in the RPIU and PMU |
| Public information/Gender Specialist | <ul style="list-style-type: none"> • Ensure the implementation of the public information program at the regional level • Ensure the implementation of gender action plan at the regional level |

| Position | Terms of Reference |
|----------|---|
| | <ul style="list-style-type: none"> • Coordinate with Women’s Committee at the regional level • Provide inputs, identify and resolve issues in the area of specialty • Prepare progress reports • Assist Regional Manager in delivery of his/her duties • Coordinate with other Specialists in the RPIU and PMU |

13. The RPIU will be established before the contract effectiveness of the turnkey contracts and its organizational structure will be as below:



IV. COSTS AND FINANCING

14. The project costs consist of:

- (i) **Turnkey contracts.** Turnkey contracts are for (i) AEM meters and associated communication system and (ii) MDM and billing systems. Implementation will be under Uzbekenergo's responsibility. It is financed out of the ADB loan proceeds, UFRD loan. ADB loan proceeds are relented by the government to Uzbekenergo in accordance with the Subsidiary Loan Agreement.
- (ii) **Installation Works and Services and Project Management Unit.** Uzbekenergo will provide necessary staff and resources for (a) installation of the AEM meters and associated communication system, and creation of customer meter database for the MDM and billing systems, and for (b) project management unit. Uzbekenergo will also procure and install meter boxes and wires. All these costs will be covered by Uzbekenergo's internal resources.
- (iii) **Project Management and Supervision Consultant.** Project management and supervision consultant (a firm) will be recruited by Uzbekenergo to assist PMU in project management and supervision, capacity development, public information program, and gender action plan. This will be under Uzbekenergo's responsibility. It is financed out of the ADB loan proceeds. ADB loan proceeds are relented by the government to Uzbekenergo in accordance with Subsidiary Loan Agreement.
- (iv) **Public Information Program, Gender Action Plan, and AEM Capacity Development.** Uzbekenergo will be responsible for financing and implementing public information program, gender action plan in collaboration with Women's Committee, and AEM capacity development in collaboration with Tashkent State Technical University. The consulting services used for this component is financed out of the ADB loan proceeds. ADB loan proceeds are relented by the government to Uzbekenergo in accordance with Subsidiary Loan Agreement.
- (v) **External Audit.** Uzbekenergo will recruit an external auditor for the preparation of audit reports for the entity and for project financial statements during project implementation. The auditing cost of the entity's financial statements is financed by Uzbekenergo or by other sources. The auditing cost of the project financial statements is financed out of the consulting services category of the ADB loan proceeds which are relented by the government to Uzbekenergo in accordance with the Subsidiary Loan Agreement.
- (vi) **Taxes and duties.** Taxes and duties will be covered under government contribution as their share of the project cost.
- (vii) **Financial charges.** Uzbekenergo will finance the financial charges including interest during construction and commitment charges without capitalizing them into the loan.

A. Detailed Cost Estimates by Expenditure Category

(\$ million)

| Item | Foreign Exchange | Local Currency | Total Cost |
|--|------------------|----------------|--------------|
| A. Base Cost ^a | | | |
| 1 Turnkey Contracts | 327.0 | - | 327.0 |
| 2 Installation works and services, and PMU | - | 71.0 | 71.0 |
| 3 Consulting services | 5.0 | - | 5.0 |
| a. Project management and supervision | 3.2 | - | 3.2 |
| b. Capacity development ^b | 1.8 | - | 1.8 |
| 4 Public information program ^c | - | 1.0 | 1.0 |
| 5 Taxes and duties | - | 73.0 | 73.0 |
| Subtotal (A) : (1 + 2 + 3 + 4 + 5) | 332.0 | 145.0 | 477.0 |
| B. Contingencies ^d | | | |
| 1 Physical | 16.4 | 3.5 | 19.9 |
| 2 Price | 21.7 | 4.7 | 26.4 |
| Subtotal (B) | 38.1 | 8.2 | 46.3 |
| C. Financing Charges During Implementation ^e | | | |
| 1 Interest | 18.3 | - | 18.3 |
| 2 Commitment Charges | 2.4 | - | 2.4 |
| Subtotal (C) | 20.7 | - | 20.7 |
| Total (A+B+C) | 390.8 | 153.2 | 544.0 |

PMU -= project management unit

^a In mid-2015 prices.

^b Includes gender action plan, advanced electricity metering capacity development program and external auditor cost.

^c Includes costs of gender action plan and advanced electricity metering capacity development program, which are not included in consulting services.

^d Physical contingencies computed at 5% for equipment. Price contingencies computed at 1.5% on foreign exchange costs and 10% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Includes interest and commitment charges. Interest during construction for ADB's ordinary capital resources (OCR) loan has been computed at the 5-year forward London interbank offered rate plus a spread of 0.5% and 0.1% of maturity premium. Commitment charges for ADB's OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank staff estimates.

B. Allocation and Withdrawal of Loan Proceeds

| CATEGORY | | | ADB FINANCING |
|----------|---------------------|---|---|
| Number | Item | Total Amount Allocated for ADB Financing (\$) | Percentage of ADB Financing from the Loan Account |
| 1 | Turnkey Contracts** | 264,300,000 | 80.8 percent of total amount due * |
| 2 | Consulting Services | 5,000,000 | 100 percent of total amount due * |
| 3 | Unallocated | 30,700,000 | |
| | Total | 300,000,000 | |

* Exclusive of taxes and duties imposed within the territory of the borrower.

** Subject to the execution and effectiveness of the loan agreement between UFRD and the eligible commercial bank and the related subsidiary loan agreement between such bank and Uzbekenergo.

Source: Asian Development Bank estimates.

C. Detailed Cost Estimates by Financier

| (\$ million) | | | | | | | | | |
|---|---------------|-------------------------------|---------------|-------------------------------|---------------|-------------------------------|---------------|-------------------------------|--------------|
| Item | ADB | | UFRD | | Uzbekenergo | | Government | | Total Cost |
| | Amount (A) | % of cost category (A)/(E) | Amount (B) | % of cost category (B)/(E) | Amount (C) | % of cost category (C)/(E) | Amount (C) | % of cost category (C)/(E) | |
| A. Base Cost^a | | | | | | | | | |
| 1 Turnkey Contracts | 264.3 | 80.8% | 62.7 | 19.2% | - | 0.0% | - | 0.0% | 327.0 |
| 2 Installation works and services and PMU | - | 0.0% | - | 0.0% | 71.0 | 100.0% | - | 0.0% | 71.0 |
| 3 Consulting services | 5.0 | 100.0% | - | 0.0% | - | 0.0% | - | 0.0% | 5.0 |
| a. PMS | 3.2 | 100.0% | - | 0.0% | - | 0.0% | - | 0.0% | 3.2 |
| b. Capacity development ^b | 1.8 | 100.0% | - | 0.0% | - | 0.0% | - | 0.0% | 1.8 |
| 4 Public information program ^c | - | 0.0% | - | 0.0% | 1.0 | 100.0% | - | 0.0% | 1.0 |
| 5 Taxes and duties | - | 0.0% | - | 0.0% | - | 0.0% | 73.0 | 100.0% | 73.0 |
| Subtotal (A) : (1 + 2 + 3 + 4 + 5) | 269.3 | 56.5% | 62.7 | 13.1% | 72.0 | 15.1% | 73.0 | 15.3% | 477.0 |
| B. Contingencies^d | | | | | | | | | |
| 1 Physical | 13.2 | 66.3% | 3.1 | 15.8% | 3.6 | 17.9% | - | 0.0% | 19.9 |
| 2 Price | 17.5 | 66.3% | 4.2 | 15.8% | 4.7 | 17.9% | - | 0.0% | 26.4 |
| Subtotal (B) | 30.7 | 66.3% | 7.3 | 15.8% | 8.3 | 17.9% | - | 0.0% | 46.3 |
| C. Financing Charges During Implementation^e | | | | | | | | | |
| 1 Interest | - | 0.0% | - | 0.0% | 18.3 | 100.0% | - | 0.0% | 18.3 |
| 2 Commitment Charges | - | 0.0% | - | 0.0% | 2.4 | 100.0% | - | 0.0% | 2.4 |
| Subtotal (C) | - | 0.0% | - | 0.0% | 20.7 | 100.0% | - | 0.0% | 20.7 |
| Total (A+B+C) | 300.0 | 55.1% | 70.0 | 12.9% | 101.0 | 18.6% | 73.0 | 13.4% | 544.0 |

ADB = Asian Development Bank, PMS = Project management and supervision, PMU = project management unit, UFRD = Uzbekistan Fund for Reconstruction and Development.

^a In mid-2015 prices.

^b Includes gender action plan, advanced electricity metering capacity development program and external auditor cost.

^c Includes costs of gender action plan and advanced electricity metering capacity development program, which are not included in consulting services.

^d Physical contingencies computed at 5% for equipment. Price contingencies computed at 1.5% on foreign exchange costs and 10% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Includes interest and commitment charges. Interest during construction for ADB's ordinary capital resources (OCR) loan has been computed at the 5-year forward London interbank offered rate plus a spread of 0.5% and 0.1% of maturity premium. Commitment charges for ADB's OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank staff estimates.

D. Detailed Cost Estimates by Outputs/Components

| (\$ million) | | | | | | | | | | | |
|---|--------------|--------------|--------------------|--------------|--------------------|-------------|--------------------|--------------|--------------------|--------------|--------------------|
| Item | Total | Andijan | | Fergana | | Namangan | | Kashkadarya | | Surkhandarya | |
| | | Amount | % of cost category | Amount | % of cost category | Amount | % of cost category | Amount | % of cost category | Amount | % of cost category |
| A. Base Cost^a | | | | | | | | | | | |
| 1 Turnkey Contracts | 327.0 | 64.7 | 19.8% | 78.2 | 23.9% | 59.8 | 18.3% | 74.3 | 22.7% | 50.0 | 15.3% |
| 2 Installation works and services, and PMU | 71.0 | 14.1 | 19.8% | 16.9 | 23.9% | 13.0 | 18.3% | 16.1 | 22.7% | 10.9 | 15.3% |
| 3 Consulting services | 5.0 | 1.0 | 19.8% | 1.2 | 23.9% | 0.9 | 18.3% | 1.1 | 22.7% | 0.8 | 15.3% |
| a. Project management and supervision | 3.2 | 0.6 | 19.8% | 0.8 | 23.9% | 0.6 | 18.3% | 0.7 | 22.7% | 0.5 | 15.3% |
| b. Capacity development ^b | 1.8 | 0.4 | 19.8% | 0.4 | 23.9% | 0.3 | 18.3% | 0.4 | 22.7% | 0.3 | 15.3% |
| 4 Public information program ^c | 1.0 | 0.2 | 19.8% | 0.2 | 23.9% | 0.2 | 18.3% | 0.2 | 22.7% | 0.2 | 15.3% |
| 5 Taxes and duties | 73.0 | 14.4 | 19.8% | 17.4 | 23.9% | 13.4 | 18.3% | 16.6 | 22.7% | 11.2 | 15.3% |
| Subtotal (A) : (1 + 2 + 3 + 4 + 5) | 477.0 | 94.4 | 19.8% | 113.9 | 23.9% | 87.3 | 18.3% | 108.3 | 22.7% | 73.1 | 15.3% |
| B. Contingencies^d | | | | | | | | | | | |
| 1 Physical | 19.9 | 4.0 | 19.8% | 4.8 | 23.9% | 3.6 | 18.3% | 4.5 | 22.7% | 3.0 | 15.3% |
| 2 Price | 26.4 | 5.2 | 19.8% | 6.3 | 23.9% | 4.9 | 18.3% | 6.0 | 22.7% | 4.0 | 15.3% |
| Subtotal (B) | 46.3 | 9.2 | 19.8% | 11.1 | 23.9% | 8.5 | 18.3% | 10.5 | 22.7% | 7.0 | 15.3% |
| C. Financing Charges During Implementation^e | | | | | | | | | | | |
| 1 Interest | 18.3 | 3.6 | 19.8% | 4.4 | 23.9% | 3.3 | 18.3% | 4.2 | 22.7% | 2.8 | 15.3% |
| 2 Commitment Charges | 2.4 | 0.5 | 19.8% | 0.6 | 23.9% | 0.4 | 18.3% | 0.5 | 22.7% | 0.4 | 15.3% |
| Subtotal (C) | 20.7 | 4.1 | 19.8% | 5.0 | 23.9% | 3.7 | 18.3% | 4.7 | 22.7% | 3.2 | 15.3% |
| Total (A+B+C) | 544.0 | 107.7 | 19.8% | 130.0 | 23.9% | 99.5 | 18.3% | 123.5 | 22.7% | 83.3 | 15.3% |

^a In mid-2015 prices.

^b Includes gender action plan, advanced electricity metering capacity development program and external auditor cost.

^c Includes costs of gender action plan and advanced electricity metering capacity development program, which are not included in consulting services.

^d Physical contingencies computed at 5% for equipment. Price contingencies computed at 1.5% on foreign exchange costs and 10% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Includes interest and commitment charges. Interest during construction for ADB's ordinary capital resources (OCR) loan has been computed at the 5-year forward London interbank offered rate plus a spread of 0.5% and 0.1% of maturity premium. Commitment charges for ADB's OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank staff estimates.

E. Detailed Cost Estimates by Year

| | | (\$ million) | | | | | |
|--|--------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Item | Total Cost | Year 1 2016 | Year 2 2017 | Year 3 2018 | Year 4 2019 | Year 5 2020 | Year 6 2021 |
| A. Base Cost ^a | | | | | | | |
| 1 Turnkey Contracts | 327.0 | - | 39.2 | 121.3 | 82.1 | 84.4 | - |
| 2 Installation works and services, and PMU | 71.0 | - | - | 21.3 | 25.6 | 24.1 | - |
| 3 Consulting services | 5.0 | 0.5 | 1.0 | 1.0 | 1.3 | 1.2 | - |
| a. Project management and supervision | 3.2 | 0.3 | 0.7 | 0.6 | 0.8 | 0.8 | - |
| b. Capacity development ^b | 1.8 | 0.2 | 0.3 | 0.4 | 0.5 | 0.4 | - |
| 4 Public information program ^c | 1.0 | - | 0.1 | 0.3 | 0.3 | 0.3 | - |
| 5 Taxes and duties | 73.0 | - | 8.8 | 27.1 | 18.3 | 18.8 | - |
| Subtotal (A) : (1 + 2 + 3 + 4 + 5) | 477.0 | 0.5 | 49.1 | 171.0 | 127.6 | 128.8 | - |
| B. Contingencies ^d | | | | | | | |
| 1 Physical | 19.9 | - | - | - | - | - | 19.9 |
| 2 Price | 26.4 | - | - | - | - | - | 26.4 |
| Subtotal (B) | 46.3 | - | - | - | - | - | 46.3 |
| C. Financing Charges During Implementation ^e | | | | | | | |
| 1 Interest | 18.3 | - | 0.5 | 2.4 | 4.9 | 7.0 | 3.5 |
| 2 Commitment Charges | 2.4 | 0.7 | 0.6 | 0.5 | 0.4 | 0.2 | - |
| Subtotal (C) | 20.7 | 0.7 | 1.1 | 2.9 | 5.3 | 7.2 | 3.5 |
| Total (A+B+C) | 544.0 | 1.2 | 50.2 | 173.9 | 132.9 | 136.0 | 49.8 |

PMU = project management unit

^a In mid-2015 prices

^b Includes gender action plan, advanced electricity metering capacity development program and external auditor cost.

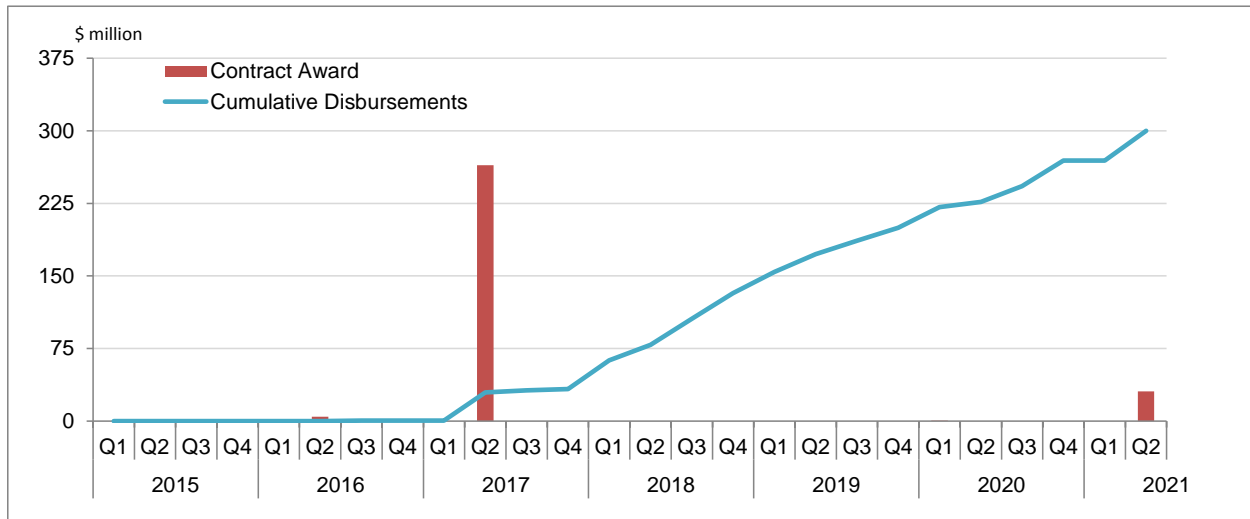
^c Includes costs of gender action plan and advanced electricity metering capacity development program, which are not included in consulting services.

^d Physical contingencies computed at 5% for equipment. Price contingencies computed at 1.5% on foreign exchange costs and 10% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Includes interest and commitment charges. Interest during construction for ADB's ordinary capital resources (OCR) loan has been computed at the 5-year forward London interbank offered rate plus a spread of 0.5% and 0.1% of maturity premium. Commitment charges for ADB's OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank staff estimates.

F. Contract and Disbursement S-curve

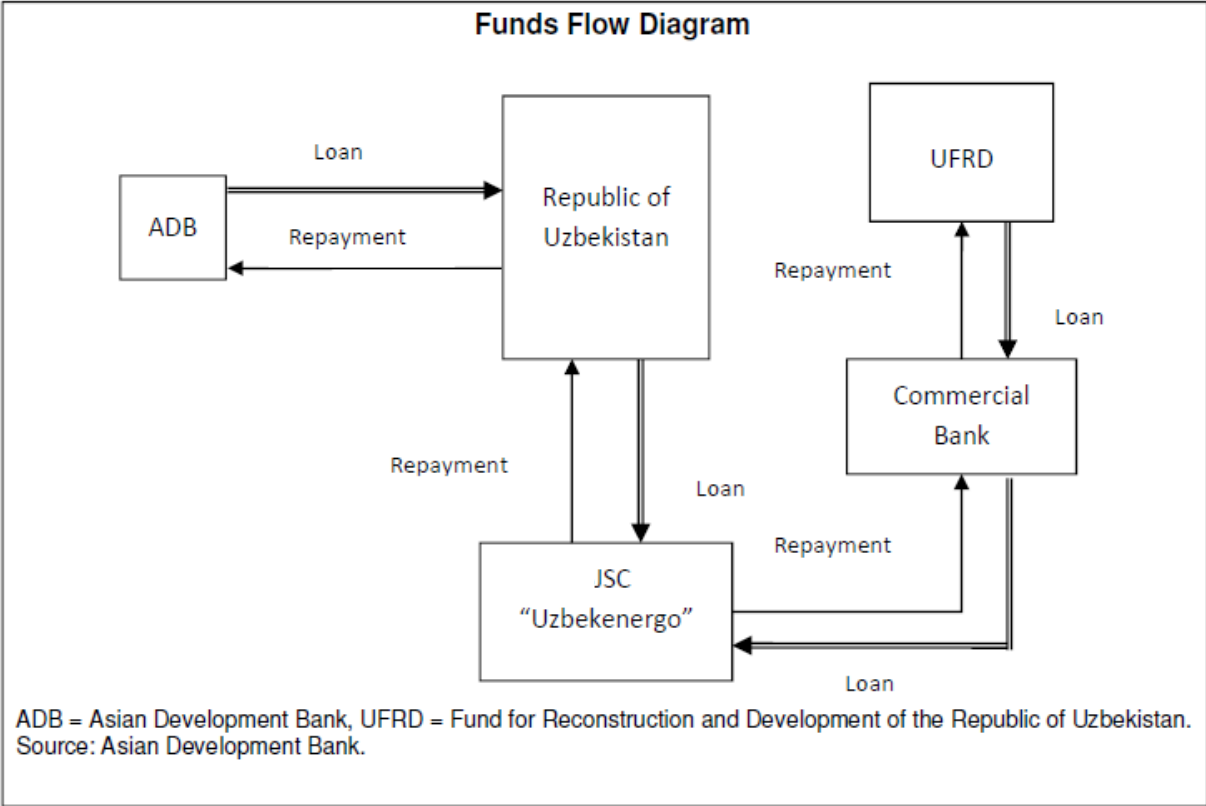


S-Curve Baseline Projections

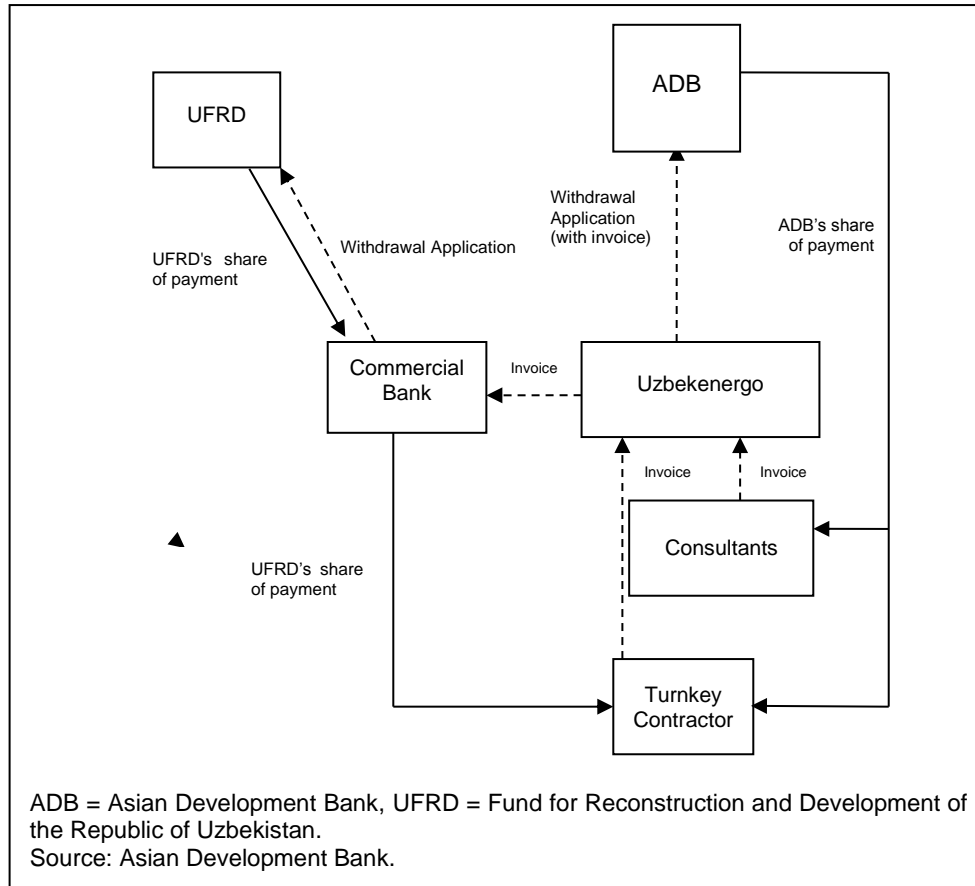
| | Contract Awards (in USD million) | | | | | Disbursements (in USD million) | | | | |
|------|----------------------------------|-------|-----|-----|--------------|--------------------------------|------|------|------|--------------|
| | Q1 | Q2 | Q3 | Q4 | Total | Q1 | Q2 | Q3 | Q4 | Total |
| 2015 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2016 | 0.0 | 4.5 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 | 0.5 | 0.0 | 0.5 |
| 2017 | 0.0 | 264.5 | 0.0 | 0.0 | 264.5 | 0.0 | 29.0 | 2.3 | 1.3 | 32.6 |
| 2018 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 29.6 | 16.1 | 26.9 | 26.4 | 99.0 |
| 2019 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.9 | 18.5 | 14.0 | 13.2 | 67.6 |
| 2020 | 0.3 | 0.0 | 0.0 | 0.0 | 0.3 | 21.4 | 5.3 | 16.3 | 26.6 | 69.6 |
| 2021 | 0.0 | 30.7 | 0.0 | 0.0 | 30.7 | 0.0 | 30.7 | 0.0 | 0.0 | 30.7 |
| | Total Contract Awards | | | | 300.0 | Total Disbursements | | | | 300.0 |

G. Fund Flow Diagrams

1. Loan Fund Flow



2. Disbursement Fund Flow



V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

15. A financial management assessment including assessed risks and mitigation measures, analysis on historical financial performance and projections of financial statements, was conducted as part of the Takhiatash Power Plant Efficiency Improvement Project.³ Uzbekenergo, the EA of the project, is a 100% state-owned holding company for power generation, transmission, and distribution in Uzbekistan. It was established in August 2001 after public sector reorganization and is the legal successor of the former Ministry of Energy and Electrification. Incorporated as an open joint-stock company, Uzbekenergo has 54 subsidiaries with its shares ranging from 51% to 100% in each subsidiary. These subsidiaries include power generation, transmission, and distribution and supply companies. Most of those subsidiaries are incorporated as separate joint-stock companies.

³ ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Uzbekistan for the Takhiatash Power Plant Efficiency Improvement Project*, Manila. The FMA was undertaken based on the Governance and Anti-Corruption Action Plan II PFM Assessments.

16. Uzbekenergo's financial management risk is considered high, and Uzbekenergo needs to strengthen its financial management capacity. Uzbekenergo's accounting policies, procedures, and financial reporting have followed the National Accounting Standards of Uzbekistan and National Standards on Auditing. Under Presidential Resolution 48 article 442 of 2010, Uzbekenergo is also required to adopt international auditing standards for external auditing of its financial statements during the period 2011-15. In order to comply with this resolution and to enhance its financial management, Uzbekenergo undertook an external audit based on International Standards on Auditing issued by the International Assurance Auditing Standards Board of its financial statements from the fiscal year ending on 31 December 2011. The results of the audit indicate the need for further improvements in areas such as the classification methods and impairment provisions on account receivables, the scope of account consolidation and the accounting system.

17. Uzbekenergo has started adopting International Financial Reporting Standards (IFRS) conversion since the fiscal year ending on 31 December 2012 and plans to complete full conversion to cover all subsidiaries for the fiscal year ending 31 December 2015. The capacity development plan under other ADB loan projects⁴ and World Bank projects will address the training of the IFRS specialists as well as the strengthening of Uzbekenergo's information systems with the objective of improving its financial management capability.

18. While Uzbekenergo's financial management capacity requires improvement, Uzbekenergo is expected to operate profitably throughout the period under the loans. With improving collection rate and commissioning of new generation facilities as well as other rehabilitated infrastructure, Uzbekenergo's financial situation will continue to improve. The financial performance of Uzbekenergo, however, is sensitive to the gas price changes. Such changes need to be factored into electricity tariff adjustments in order to ensure adequate cashflow for operation and financing of investments.

19. Table 1 summarizes financial management risks of Uzbekenergo and mitigation measures.

Table 1: Financial Management Risks and Mitigation Measures

| Risk | Risk Assessment | Management Plan and/or Mitigation Measures |
|---|------------------------|---|
| 1. Inherent risks | High | - The project management unit (PMU) to be supported by international consultants. Training on ADB procedures to be provided. |
| 2. Funds flow arrangements | Substantial | - ADB direct payment, commitment letters, and reimbursement procedures are to be used for the project. No imprest account will be established. - Relending agreement between the Ministry of Finance and Uzbekenergo to be submitted to ADB. |
| 3. Staffing | High | Uzbekenergo to be responsible for retaining adequate staffing and timely payment of salaries to staff. Recruitment and training of staff for international financing reporting standards (IFRS) to be implemented by Uzbekenergo with the help of international consultant. |
| 4. Accounting policies, procedures, and | Substantial | - An accounting system to be established and maintained for the project in order to minimize risk. - IT systems diagnosis and strategy development to be carried |

⁴ ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loans and Administration of Loan to the Republic of Uzbekistan for the Talimarjan Power Project*. Manila. (Loans 2629-UZB, 2630-UZB, and 8944-UZB).

| Risk | Risk Assessment | Management Plan and/or Mitigation Measures |
|-----------------------------|------------------------|---|
| systems | | out by international consultant to identify the weaknesses and to design mitigation plan including upgrading accounting system and the introduction of an integrated management information system. - Recruitment of or internally trained IFRS accountants to introduce the adoption of IFRS. Documented procedures and staff training to be provided to retain institutional knowledge. |
| 5. Internal audit | Substantial | Adequate staffing in the newly established internal audit unit and sufficient training to be provided by Uzbekenergo through the help of international consultant. |
| 6. External audit | Substantial | Loan and project agreements require Uzbekenergo's financial statements and project financial statements be audited in accordance with international standards on auditing (ISA) by auditor acceptable to ADB. Uzbekenergo will submit to ADB the audited project financial statements within 6 months of the end of the fiscal year. |
| 7. Reporting and monitoring | High | - A reporting system, which will have functionality for automatic generation of financial reports to be established and maintained for the project. - Implementation consultants will be recruited to assist PMU in supervising the project implementation, recording project costs, preparing withdrawal applications and progress reports. |
| 8. Information systems | High | Information systems and processes to be enhanced to meet the demands of organization, ensure operational stability, and allow for full consolidation of management information as well as financial data. |
| Overall | High | |

20. Based on this assessment, action plans to improve financial management capacity of Uzbekenergo are the following:

| Action | Responsibility | Resources | Timing |
|---|-------------------------------------|--|--|
| Development of management information system to improve accounting infrastructure of the company | Uzbekenergo' PMU, IT Department | ADB Loan (Talimarjan Power Project) | 2015-2018 |
| Regular training of accounting staff to improve their financial management capacity | Uzbekenergo's Accounting Department | Uzbekenergo's internal resources | From the beginning of the project on regular basis |
| Engagement of reputable external auditors to conduct entity and project account audits | Uzbekenergo's Accounting Department | ADB loans (2010-11, 2017-21) and World Bank loan (2012-2016) | Annually |
| Engagement of consultants to provide project supervision and monitoring and financial management training to clarify ADB requirements including disbursement requirements and financial covenants calculation | Uzbekenergo's PMU | ADB Loan | From the beginning of the project on a regular basis |
| Engagement of training contractors for enhancement of IFRS-based accounting capacity, including asset valuation and consolidation of subsidiary accounts | Uzbekenergo's Accounting Department | World Bank loan | Within 6 months |

B. Disbursement

21. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time),⁵ and detailed arrangements agreed upon between the government and ADB.

22. A project management and supervision consultant (project implementation consultant) will be recruited to assist Uzbekenergo in project management including preparing disbursement projections, collecting supporting documents, and preparing and sending withdrawal applications to ADB.

23. Direct payment and reimbursement procedures will be adopted for the project implementation consultant. In case retroactive financing is used, reimbursement procedure will be adopted. Direct payment and Commitment procedures will be adopted for the turnkey contracts.

24. Before the submission of the first withdrawal application, MOF should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000 equivalent. Individual payments below this amount should be paid by Uzbekenergo and subsequently claimed to ADB through reimbursement, unless otherwise accepted by ADB.

C. Accounting

25. Uzbekenergo will cause PMU to maintain separate books and records by funding source for all expenditures incurred on the project. The PMU will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices, in accordance with the International Public Sector Accounting Standard "Financial Reporting under the Cash Basis of Accounting" (IPSAS). The annual entity's consolidated financial statements will follow international accounting principles and practices in accordance with the International Financial Reporting Standards (IFRS).

D. Auditing

26. Uzbekenergo will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing and with the government's audit regulations, by an independent auditor acceptable to ADB. The audited project financial statements (APFS) will be submitted in the English language to ADB within six months of the end of the fiscal year by the executing agency.

27. Uzbekenergo will also cause the entity-level financial statements to be audited in accordance with International Standards on Auditing and with the Government's audit regulations, by an independent auditor acceptable to ADB. The audited entity-level financial statements, together with the auditors' report and management letter, will be submitted in the English language to ADB within one month after their approval by the competent authority.

⁵ Available at: <http://www.adb.org/documents/loan-disbursement-handbook>

28. The annual audit report will include an audit management letter and audit opinions which cover (i) 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; (ii) whether loan proceeds were used only for the purposes of the project or not; and (iii) the level of compliance for each financial covenant contained in the legal agreements for the project.

29. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal project supervision, and followed up regularly with all concerned, including the external auditor.

30. The government, Uzbekenergo and PMU have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.⁶ ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower, or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

31. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).⁷ After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

32. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (April 2015, as amended from time to time) (ADB's *Procurement Guidelines*)⁸ and ADB's *Guidelines on the Use of Consultants and Its Borrowers* (March 2013, as amended from time to time) (ADB's *Guidelines on the Use of Consultants*).⁹ The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB's approval. The borrower and Uzbekenergo have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

⁶ ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

⁷ <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

⁸ Available at: <http://www.adb.org/documents/procurement-guidelines>

⁹ Available at: <http://www.adb.org/documents/guidelines-use-consultants-asian-development-bank-and-its-borrowers>

33. Advance contracting will be undertaken for the procurement of turnkey contractors and recruitment of supervision and project management consultant. A consulting firm, engaged under ADB project preparatory technical assistance No. 8376, will assist PMU in bidding documents preparation for the turnkey contractor. PMU will undertake recruitment of supervision and project management consultant.

34. Retroactive financing will be applied not exceeding 20% of the total ADB loan, incurred before loan effectiveness, but not more than 12 months before the signing of the loan agreement.

B. Procurement of Goods, Works and Consulting Services

35. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines*.

36. International Competitive Bidding (ICB) procedures will be used for turnkey contracts estimated to cost \$5,000,000 or more. ADB's standard bidding documents for Plant-Design, Supply and Install will be used.

37. Uzbekenergo will employ two turnkey contractors to procure the MDM and billing system for the regional offices and district service centers and the AEM meters and associated communication system using ADB's Single-Stage, Two-Envelope bidding procedure. The Contractors will provide related services, such as trainings, trouble-shooting, and customization and installation of MDM and billing system, to Uzbekenergo. The turnkey contracts will be structured in such a way that (i) the scope of each of the five regions can be separately identified, (ii) meet the specific needs of each region, and (iii) while remaining compatible with each other, the system in each region can be operated independently from each other.

38. Meters and systems to be procured will have to satisfy local technical standards if appropriate, which will be specified in the bidding documents. The Contractors will be responsible for acquiring and paying for all certification and/or licenses from all local, state or national government authorities which such authorities require the Contractors to obtain in its name and which are necessary for the performance of the Contracts. Uzbekenergo will assist the Contractors in obtaining these certification and/or licenses required by the Contractors. The details will be developed by the PPTA consultant who prepares the bidding documents.

39. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C.

40. All consultants will be recruited according to ADB's *Guidelines on the Use of Consultants*.¹⁰ The outline TOR for all consulting services are detailed in Section D.

41. **Supervision and project management consultant.** An estimated 310 person-months (73 international, 237 national) of consulting services are required to (i) provide technical, financial and administrative support to the PMU during entire project implementation period, and

¹⁰ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbook-project-implementation>

(ii) implement capacity development program, public information program and gender action plan. Estimated contract duration is 48 months. Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality:cost ratio of 90:10, considering a high level of technical expertise and experience required for the supervision consultancy.

C. Procurement Plan

Basic Data

| | |
|---|---|
| Project Name: Advanced Electricity Metering Phase 4 Project | |
| Project Number: 41340-015 | Approval Number: |
| Country: Uzbekistan | Executing Agency: Joint Stock Company UzbekEnergo |
| Project Procurement Classification: Complex | Implementing Agency: |
| Project Procurement Risk: High | N/A |
| Project Financing Amount: US\$ 544,000,000 ADB Financing: US\$ 300,000,000 Cofinancing (ADB Administered): Non-ADB Financing: US\$ 244,000,000 | Project Closing Date: 30 June 2021 |
| Date of First Procurement Plan: 19 February 2015 | Date of this Procurement Plan: 17 August 2015 |

1. Methods, Thresholds, Review and 18-Month Procurement Plan

a. Procurement and Consulting Methods and Thresholds

42. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

| Procurement of Goods and Works | | |
|---|--------------------------|-----------------------|
| Method | Threshold | Comments |
| International Competitive Bidding for Goods | US\$ 2,000,000 and Above | Prior review required |
| International Competitive Bidding for Works | US\$ 5,000,000 and Above | Prior review required |

| Consulting Services | |
|---|-----------------------------------|
| Method | Comments |
| Quality- and Cost-Based Selection for Consulting Firm | Project implementation consultant |
| Least Cost Selection for Consulting Firm | External auditor |

b. Goods and Works Contracts Estimated to Cost More Than \$1 Million

43. The following table lists goods and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

| Package Number | General Description | Estimated Value | Procurement Method | Review (Prior/Post) | Bidding Procedure | Advertisement Date (quarter/year) | Comments |
|----------------|---|-----------------|--------------------|---------------------|-------------------|-----------------------------------|---|
| tbd-01 | Turnkey contracts for AEM meters and associated communication system, and meter data management and billing systems (minimum 2 contracts) | 327 million | ICB | Prior | 1S2E | Q4 / 2015 | Prequalification of Bidders: N Domestic Preference Applicable: N Bidding Document: Plant Comments: Value estimated excludes taxes and duties; 1 package with 2 lots; the number of contracts may be divided into 5 contracts which match the number of regions it covers |
| | Lot 1: Andijan, Fergana, Namangan | 203 million | | | | | |
| | Lot 2: Kashkadarya, Surkhandarya | 124 million | | | | | |

AEM = Advanced Electricity Meters; ICB = international competitive bidding.

c. Consulting Services Contracts Estimated to Cost More Than \$100,000

44. The following table lists consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

| Package Number | General Description | Estimated Value | Recruitment Method | Review (Prior/Post) | Advertisement Date (quarter/year) | Type of Proposal | Comments |
|----------------|---|-----------------|--------------------|---------------------|-----------------------------------|------------------|--|
| CS-1 | Project management and Supervision Consultant | 4.5 million | QCBS | Prior | Q3 / 2015 | FTP | Assignment: International Quality-Cost Ratio: 90:10 |
| CS-02 | External auditor (3 contracts) | 500,000 | LCS | Prior | Q2 / 2016 | STP | Assignment: International |

FTP = full technical proposal; LCS = least cost selection; QCBS = quality- and cost-based selection; STP = simplified technical proposal.

d. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

45. The following table lists smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

| Goods and Works | | | | | | | | |
|-----------------|---------------------|-----------------|---------------------|--------------------|---------------------|-------------------|-----------------------------------|----------|
| Package Number | General Description | Estimated Value | Number of Contracts | Procurement Method | Review (Prior/Post) | Bidding Procedure | Advertisement Date (quarter/year) | Comments |
| None | | | | | | | | |

| Consulting Services | | | | | | | | |
|---------------------|---------------------|-----------------|---------------------|--------------------|---------------------|-----------------------------------|------------------|----------|
| Package Number | General Description | Estimated Value | Number of Contracts | Recruitment Method | Review (Prior/Post) | Advertisement Date (quarter/year) | Type of Proposal | Comments |
| None | | | | | | | | |

2. Indicative List of Packages Required Under the Project

46. The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

| Goods and Works | | | | | | | |
|-----------------|---------------------|------------------------------|-------------------------------|--------------------|---------------------|-------------------|----------|
| Package Number | General Description | Estimated Value (cumulative) | Estimated Number of Contracts | Procurement Method | Review (Prior/Post) | Bidding Procedure | Comments |
| None | | | | | | | |

| Consulting Services | | | | | | | |
|---------------------|---------------------|------------------------------|-------------------------------|--------------------|---------------------|------------------|----------|
| Package Number | General Description | Estimated Value (cumulative) | Estimated Number of Contracts | Recruitment Method | Review (Prior/Post) | Type of Proposal | Comments |
| | | | | | | | |

3. Review of Contract Modifications

47. ADB will review contract modifications in accordance with the procedures set forth in the loan agreement between the borrower and ADB.

D. Outline Consultant's Terms of Reference –Project Management and Supervision Consultant

48. JSC Uzbekenergo wishes to reduce distribution and collection losses in residential and small and large scale commercial customer sectors in Andijan, Fergana, Kashkadarya, Namangan, and Surkhandarya, regions through installation of (i) about 3.1 million advanced electricity meters (AEM) and associated communication system and (ii) meter data management (MDM) and billing systems in 5 regional offices.

49. The project is estimated at \$544 million. The project is expected to become effective by the January 2016. Physical completion is expected in December 2020.

50. Uzbekenergo wishes to recruit a project management and supervision consultant (the Consultant; a firm) to assist the project management unit (PMU) in assuring that the project is constructed to the specified standard, completed on schedule and with costs monitored and controlled. The Consultant's responsibility will include (i) assisting PMU during tendering, bid evaluation, and contract negotiation and awards, (ii) project management activities controlling costs, quality and schedule of contractor's deliverables; (iii) project supervision, inspecting and

accepting goods and services related to AEM revenue metering and associated communication system; (iv) confirming that the supplied goods and services conform to specifications, (v) recommending appropriate mitigation action when quality of deliverables does not meet the specifications, and (vi) assisting UE in the implementation of capacity development program, public information program and gender action plan.

51. The Consultant will also assist Uzbekenergo PMU in preparing and implementing a Project Performance Monitoring System (PPMS) to evaluate effectiveness of the project. The PPMS will measure project performance against the parameters as set out in the Design and Monitoring Framework (DMF) of the Report and Recommendation of the President. The PPMS will establish baseline data and benchmarks, collect necessary information, monitor progress, identify benefits and evaluate social impact.

52. The Consultant will be engaged between October 2015 and December 2020, on an intermittent basis for a period of 48 months, under the overall direction of the Project Director of the PMU. The Consultant will include a smart metering specialist, an AEM information technology specialist, a procurement specialist, a public relations specialist, and a social and gender specialist. About 310 person-months (73 international, 237 national) of consulting services are required.

Summary of Consulting Services Requirement

| International | Pm | National | pm |
|--|-------------|---|--------------|
| AEM Expert (Distribution) – TL | 36.0 | Monitoring and Reporting Expert (5 positions-12 PM each) | 60.0 |
| Communication and Data Management Expert | 3.0 | Power Sector Expert (5 positions – 30 PM each) | 150.0 |
| AEM IT Expert | 12.0 | Public Relations Expert | 3.0 |
| Procurement Expert | 6.0 | Social and Gender Expert | 12.0 |
| Public information (Gender) Expert | 10.0 | AEM Capacity Development Expert | 12.0 |
| AEM Capacity Development Expert | 6.0 | | |
| Total PM | 73.0 | Total PM | 237.0 |

AEM = advanced electricity metering, pm = person-month, TL = team leader.

Source: Asian Development Bank estimates.

VII. SAFEGUARDS

53. No major social or environmental safeguards issues are envisaged under the project. The project is category C for all safeguards as defined in ADB's Safeguard Policy Statement (2009). The impacts on the environment are negligible and will not extend beyond the immediate meter replacement area. All the waste equipment/old meters will be either recycled within the Uzbekenergo, dismantled and reused for parts, or disposed to designated areas within the Uzbekenergo facilities. ADB will monitor safeguards issues during implementation. If any unanticipated environmental or social impacts become apparent during project implementation, ADB will advise and require the Uzbekenergo to (i) assess the significance of such unanticipated impacts; (ii) evaluate the options available to address them; (iii) prepare relevant safeguards documents; and (iv) take necessary action(s). The project will be implemented and operated in compliance with the government's rules and regulations governing the project's environmental and social aspects.

VIII. GENDER AND SOCIAL DIMENSIONS

54. The increased efficiency and reliability resulting from the project will have a positive impact on economic growth and poverty reduction. The project will improve the financial sustainability of the power sector through reducing losses. The project will improve the utility's load management capability with data and information made available with the advanced metering technology. These will contribute to improving power system stability and reducing power outages essential for increased economic activities and job opportunities for all. The project will incorporate necessary staff training and support adoption of new operational procedure for the new "meter-to-cash" solution to effectively utilize the AEM system. The project also envisages improving customer services and establishes complaint redress mechanism.

55. The project supports effective gender mainstreaming (EGM) in the sector. More reliable power supply to households and effective energy use positively affects women who are often the managers of household activities. The project will empower consumers especially women as 'agents of change' through public information program on energy efficiency, consumer rights, the newly introduced billing system and job opportunities. The project will also improve career and training opportunities for women by providing meliorated customer services, data collection and gender sensitive user education program. Gender action plan (GAP) to be adopted under the project involves strategy and approaches to enhance the project benefits for women and thus improves gender equality in the energy sector.

Gender Action Plan

| Activity | Target Indicators | Responsibility |
|---|--|---|
| Output 2: Operations manual adopted and loss reduction operations strengthened. | | |
| PMU recruits Social and Gender Specialist/Focal Point by end of 2016 | A social/gender specialist/focal point designated in PMU | Uzbekenergo/PMU |
| Training Centers made available for PES staff training by the beginning of 2018. | Agreements between UE/PES and local khokimiyats to allow Uzbekenergo to use the training centers: one for Ferghana Valley, and another for Surkhandarya and Kashkadarya Regions | Relevant PES and local government Uzbekenergo/PMU |
| Training modules on AEM system for UE staff engendered by 2018 | At least 10 Training modules developed with 50% of them engendered such as: (i) billing system, (ii) communication in AEM systems, (iii) databases, (iv) validation and balancing strategies, (v) impact on commercial procedures. | Project implementation consultant, Uzbekenergo/PMU, PES |
| Staff training undertaken on AEM system by 2020 | Staff of 88 district service centers are trained (including 20% of staff to be trained are women for the engendered modules) | Turnkey contractor, Project implementation consultant, Uzbekenergo/PMU, PES |
| Cooperation mode between UE and State University (Energy department) determined and formalized by 2017. | Relevant Curriculum (Bachelor/Master) revised, updated and engendered Female-students incentive mechanisms developed and introduced (30% quotas, stipends, etc.) (baseline: 21%) | Uzbekenergo/HR division, PMU, State University |
| Output 3: Customer service for end-users improved. | | |
| Each district service centers have gender-balanced customer service by 2019 | Module on gender-balanced customer services developed Training on gender-balanced customer service implemented Trained staff operate at the district service centers | Uzbekenergo/PMU, PES Uzbekenergo/PMU/PES PIC |

| Activity | Target Indicators | Responsibility |
|---|--|--|
| | (20% of staff being women) | Uzbekenergo/PMU/PES PIC |
| Engendered public information program developed, training provided, and implemented by 2018. | <p>Module for gender issues in social advertisement and public information program developed (one for visual and one for printing advertisements)</p> <p>Training for relevant specialists of Uzbekenergo responsible for gender issues in advertisement and public information program conducted (public relations department, PES staff)</p> <p>Engendered brochures on energy efficiency and consumer rights developed and disseminated in each district service center and interested makhallas.</p> <p>Engendered media advertisement on energy efficiency and consumer rights developed and broadcasted regularly (at least 2 media advertisement products).</p> <p>Energy efficiency campaign in each relevant makhalla of the project regions conducted.</p> | <p>Uzbekenergo/PMU/PR Dept PIC</p> <p>Uzbekenergo/PMU/PES PIC</p> <p>Uzbekenergo/PMU/PES PIC</p> <p>Uzbekenergo/PMU/PES PIC</p> <p>Uzbekenergo/PMU/PES PIC</p> |
| Engendered customer feedback and complaint redress mechanism established and implemented by 2018. | <p>Customer feedback and complaint redress mechanism procedures developed has a gender-sensitive approach.</p> <p>Staff training provided on customer feedback and complaint redress mechanism at district service centers (88 centers) (at least 20% of trainees are women)</p> | <p>Uzbekenergo/PMU/PES</p> <p>Uzbekenergo/PMU/PES PIC</p> |

| Activity | Target Indicators | Responsibility |
|----------|--|---|
| | <p>Each district service center assigns staff dealing with customer feedback and complains (at least 20% of staff are women).</p> <p>10% of 88 District Service Centers to conduct at least 1 Focus Group Discussion (FGD) (10 women per group) towards the end of the project, to receive customer feedback of Uzbekenergo's gender inclusivity approaches under the project GAP.</p> | <p>Uzbekenergo/PMU/PES</p> <p>Uzbekenergo/PMU/PES</p> |

Note: Indicator/target to be included/reflected in DMF at Output level to constitute 50% for EGM

AEM = advanced electricity metering; PES = Territorial Distribution Enterprises; PIC = project implementation consultant; PMU = project management unit; PR = public relations.

Public Information Program: Work Plan

Objectives:

- i. To help customers understand that full payment for energy used is necessary for a better service and that smart meters are the best way to achieve that.
- ii. To help make this affordable by explaining how energy can be used most effectively.
- iii. To enhance the credibility of Uzbekenergo and the promised benefits by reassigning some of the meter readers to developing a more responsive customer and information service with 24 hour hotline and dispatch teams and working closely with community groups and volunteers.

| <i>Type of activity</i> | <i>Quantity</i> | <i>Six months before installation</i> | <i>Three months before installation</i> | <i>Installation period</i> | <i>Measurable Indicators</i> | <i>Responsible</i> |
|---|---|---|---|----------------------------|--|--|
| Team establishment – customer services | | Identify team at national, regional and district level, agree workplan, training needs analysis and trainings (This assumes the Customer service analysis has already been carried out and strategy developed) Agree internal coordination and reporting procedures Review implementation of customer services strategies, agree ongoing targets, confirm monitoring procedures | | | Staff designated and trained. Written procedures in place for monitoring, coordination and reporting, Report on implementation procedures, recommendations | Uzbekenergo with support of consultant |
| Presentations and trainings for women’s groups etc | Trainings to all groups identified by gender expert | Presentations first to be made to Uzbekenergo staff who will in turn make presentations to Makahllas and women’s groups | Follow- up workshops: lessons learned, challenges and how to deal with them | | No of presentation to Makhala and women leaders. Core women groups established and trained | Consultant to help develop presentations, workshop designs Uzbekenergo to deliver |
| Advertisements | One long and | Concept, Story line and | Ad 1 Benefits of | | No of Ads and | Concept and |

| | | | | | | |
|--|---|---|---|--|---|--|
| <ul style="list-style-type: none"> • Tv ads • Radio ads • Posters | <p>one short version of each TV ad One long and one short version of each radio ads One poster each</p> | <p>production Gender-sensitive approach to be adopted</p> | <p>meters Ad 2. Get advice – there’s no need to let your energy bills get out of hand Same as ads</p> | | <p>numbers of time aired Poster produced and numbers printed and disseminated</p> | <p>storyline – consultant. Production and broadcast plant contracted UzInfoEnerg</p> |
| <p>Publications</p> <ul style="list-style-type: none"> • Leaflet • Brochure | <p>20 000 of each for dissemination at public meetings, customer service offices</p> | <p>Write, design and print Gender-sensitive approach to be adopted</p> | <p>Leaflet = benefits Brochures + reduce your consumption hot tips</p> | | <p>Nos of leaflets disseminated. How they are evaluated in survey.</p> | <p>Consultant with support from Uzbekenergo and UzInfoEnerg</p> |
| <p>Mobile exhibition and displays</p> | <p>At least one mobile exhibition per region. Display panels in district offices</p> | <p>Development</p> | <p>Displays in info centers. Mobile exhibitions at events and information days</p> | <p>As per plans</p> | <p>Existence of display panels, etc. No of events implemented</p> | <p>UzInfoEnerg , Uzbekenergo under guidance of consultant</p> |
| <p>Letters to partners</p> | <p>One letter to all those agreed in local database at each stage</p> | <p>Target group one: Smart meters will help our citizens and economy. Invite to meetings, presentations (where volunteers can get invited to training</p> | <p>We’re counting on your support to explain these, co host public meetings</p> | <p>Successes and congratulations for support</p> | <p>Copies of letters, and list of recipients. Attendance at meetings)</p> | <p>Consultant with support from Uzbekenergo</p> |
| <p>Media relations</p> <ul style="list-style-type: none"> • Press pack • Press releases, conferences • Briefing | <p>Ongoing as per media plan agreed with UzInfoEnerg</p> | <p>Focus on benefits of meter and harm to everyone, the economy and environment of tampering</p> | <p>Benefits of meters Get advice – there’s no need to let your energy bills get out of hand</p> | <p>Focus on talking to individuals who found advice helpful, bills easier, more regular, etc, customer service</p> | <p>Number of clear, positive interesting articles,published or broadcast</p> | <p>Uzbekenergo and UzInfoEnerg with support from consultant</p> |

| | | | | | | |
|---|--------------------------------------|---|---|--|--|--|
| <ul style="list-style-type: none"> • Interviews • Talk show ops | | | | much faster, staff more friendly etc | | |
| Direct mailing to citizens with bills (mass mailing) | To everyone at beginning of campaign | | What is planned. Invite to public meeting to learn more and how this will help them | | | Consultant and Uzbekenergo |
| Public meetings, information days citizens | As per workplans | | Benefits of meters and how people can reduce their energy bills | | No of events and of attendees | Customer service officers, women groups |
| Website and E-newsletter. | | Establish what types of news to go on which. Database for newsletter. | | | Existence of plan for website, enewlstter template, database, plus number of newsletters | Consultant to help design and train PR unit to implement |
| School competition – supported by presentations by Uzbekenergo staff | optional | | | How we can be more EE and why this is important for our future | | Consultant, supported by Uzbekenergo PR unit |
| Coordination, Monitoring, reporting | As agreed with team | Throughout project | | | | |

AEM Capacity Development Program: Summary

Objectives:

The advanced electricity metering capacity development program comprises four key methods of training.

1. Uzbekenergo's in-house personnel training. Includes training by Uzbekenergo's own staff and resources for Uzbekenergo and PES staff. Trainers trained by consultant undertake the training.
2. Training undertaken by consultant. Includes training module development, training of staff, and training of trainers, and cost funded under the loan.
3. Training through collaboration with Tashkent State Technical University (Energy Faculty). Includes both bachelor and masters' student training curriculum and material development and teaching, with assistance of consultant and Uzbekenergo staff; upgrading lab equipment and sample meters; retraining courses made available for Uzbekenergo staff; and visiting professorship. The cost of consulting services will be financed out of the loan, the rest by Uzbekenergo and the university.
4. Overseas study tour. Includes visiting countries and utilities that have experienced implementation and operation of the AEM system for Uzbekenergo staff, and university lecturers; to be funded under the consulting services contract.

Indicative training modules below will be further developed and refined by the project management and supervision consultant during the project implementation.

| Item | Action | Typology | Timing | Attendants Number | Attendants Staff | Training Person-days |
|------|---|-------------------------------|--------|-------------------|------------------|----------------------|
| 1 | Workshop "Smart Metering in Uzbekistan"; Components; Best practices; Pitfalls | Seminar at the HQ in Tashkent | 1 | 235 | 235 | 235 |
| 2 | Importance of IT in AMI, IT Security and Revenue Protection | Seminar at the HQ in Tashkent | 1 | 235 | | 235 |
| 3 | Meter Management, Warehouse, Parameterization and Deployment Strategies | Seminar In-House | 1 | 1,990 | 1,755 | 1,990 |
| 4 | Strategies in Meter Data Acquisition | Seminar In-House | 1 | 1,755 | | 1,755 |
| 5 | Validation and Balancing Strategies | Seminar In-House | 1 | 1,206 | | 1,206 |
| 6 | The importance of end to end processes | Seminar at the HQ in Tashkent | 1 | 1,206 | | 1,206 |

| | | | | | | |
|--------------|---|-------------------------------|----|---------------|--------------|----------------|
| 7 | Impact of AMI on Commercial Procedures | Seminar at the HQ in Tashkent | 1 | 1,441 | | 1,441 |
| 8 | Project Management | Seminar Away | 20 | 235 | | 4,700 |
| 9 | Design, Monitoring and Optimization of Networks | Seminar Away | 20 | 108 | 108 | 2,160 |
| 10 | Setup, Monitoring and Optimization of Operating Systems | Seminar Away | 20 | 108 | | 2,160 |
| 11 | Databases | Seminar Away | 20 | 108 | | 2,160 |
| 12 | Meter Warehouse Management | Seminar In-House | 5 | 2,295 | 540 | 11,475 |
| 13 | Calibration and Parameterization of Meters | Seminar In-House | 5 | 1,755 | | 8,775 |
| 14 | Installation of Meters and Data Concentrators | Training for Trainers / | 2 | 5,818 | 4,063 | 11,636 |
| 15 | Communication in AEM Systems | Seminar In-house | 5 | 1,755 | | 8,775 |
| 16 | Meter Data Acquisition Systems for System Administrators | Seminar In-House | 5 | 108 | | 540 |
| 17 | Meter Data Acquisition System (Basics) | Seminar In-House | 5 | 1,311 | 1,311 | 6,555 |
| 18 | Meter Data Acquisition System (Advanced) | Seminar In-House | 5 | 1,314 | | 6,570 |
| 19 | Meter Data Processing (Advanced) | Seminar In-House | 5 | 1,311 | | 6,555 |
| 20 | Meter Data Management Systems for System Administrators | Seminar Away | 5 | 108 | | 540 |
| 21 | Meter Data Management System (Basics) | Seminar In-House | 5 | 1,311 | | 6,555 |
| 22 | Design and Implementation of reliable and performing Interfaces | Seminar In-House | 5 | 108 | | 540 |
| 23 | Billing System (Advanced) | Seminar In-House | 5 | 1,311 | | 6,555 |
| 24 | Billing System for System Administrators | Seminar Away | 5 | 108 | | 540 |
| 25 | Billing System (Basic) | Seminar In-House | 5 | 1,311 | | 6,555 |
| Total | | | | 28,551 | 8,012 | 101,414 |

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Project Design and Monitoring Framework

| Impact the Project is Aligned with | | | |
|--|--|---|---|
| Power sector financial viability improved. (National Investment Program: 2015-2019) ^a | | | |
| Results Chain | Performance Indicators with Targets and Baselines | Data Sources and Reporting Mechanisms | Risks |
| <p>Outcome Electricity revenue collection in the targeted regions improved.</p> | <p>(2014 baseline)</p> <p>a. Distribution losses reduced from: (i) 21.3% to 11.6% in Andijan; (ii) 14.6% to 8.7% in Fergana; (iii) 28.7% to 12.2% in Kashkadarya; (iv) 15.9% to 9.2% in Namangan; and (v) 11.1% to 8.9% in Surkhandarya by 2021.</p> <p>b. Revenue collection rate increased in the targeted regions to 98% from: (i) 61.5% in Fergana; (ii) 60.6% in Kashkadarya; (iii) 80.5% in Namangan; and (iv) 61.5% in Surkhandarya. Revenue collection rate in Andijan is maintained at 100% by 2021.</p> <p>c. Aggregate technical, commercial and collection losses are reduced in the targeted regions from: (i) 20.2% to 11.6% in Andijan; (ii) 47.5 to 8.7% in Fergana; (iii) 56.8% to 12.2% in Kashkadarya; (iv) 32.3% to 9.2% in Namangan; and (v) 45.4% to 8.9% in Surkhandarya by 2021.</p> | <p>a-c. Uzbekenergo's annual report</p> | <p>Uzbekenergo management and staff's priority and incentives to reduce distribution losses and improve revenue collection are decreased.</p> <p>The enforcement of legal and regulatory frameworks for loss reduction and Uzbekenergo's internal control is ineffective.</p> |
| <p>Outputs 1. AEM infrastructure installed and functional.</p> | <p>(2014 baselines: 0)</p> <p>1a. Advanced electricity meters are installed for about 3.1 million customers and relevant substations in the targeted regions by 2020.</p> | <p>1a-c. Commissioning certificate by Uzbekenergo</p> | <p>The government's internal procedure may delay procurement and contract effectiveness.</p> <p>Availability of competent installation</p> |

| Results Chain | Performance Indicators with Targets and Baselines | Data Sources and Reporting Mechanisms | Risks |
|---|---|--|---|
| | <p>1b. Communication infrastructure is functional in the targeted regions and commissioned by 2020.</p> <p>1c. Head-end system, meter data management system, billing system functional and integrated in the targeted regions by 2020.</p> | | <p>personnel and Uzbekenergo's budget to mobilize them is limited.</p> <p>The system integration with existing systems in other regions may have limited compatibility and interoperability.</p> <p>The system may be subject to system attacks or misuse of private information.</p> |
| <p>2. Operations manual adopted and loss reduction operations strengthened.</p> | <p>(2014 baselines: 0)</p> <p>2a. Standard operating procedure for meter-to-cash operations are developed and implemented by 2018.</p> <p>2b. Staff training materials developed on AEM system with 50% of modules are engendered by 2018.</p> <p>2c. Training completed on AEM system (at least 4,000 personnel and at least 20% are women) by 2020.</p> <p>2d. Metering & testing unit is established at Uzbekenergo with support provided at each PES level by 2020.</p> | <p>2a. Standard operations manual</p> <p>2b-d. Project's training report prepared by PIC</p> | <p>Uzbekenergo's customers have limited knowledge on the AEM technology.</p> |
| <p>3. Customer service for end-users improved.</p> | <p>(2014 baselines: 0)</p> <p>3a. Gender-sensitive brochures and media advertisement on AEM are developed and disseminated by 2018.</p> <p>3b. Customer complaint feedback mechanism is functional (at least 20% of customer service staff are women) by 2018.</p> <p>3c. Gender-sensitive customer service module is developed, implemented and staff trained (at least 1,000 personnel, and at least 20% are women) by 2019.</p> | <p>3a. Uzbekenergo's publication material</p> <p>3b-c. PES personnel report</p> | |

Key Activities with Milestones

Output 1. AEM infrastructure installed and functional.

- 1.1 Recruit and mobilize project implementation consultant (advance action) (Q2 2015-Q2 2016) [GCD]
- 1.2 Procure and award turnkey contracts for the AEM system (advance action) (Q2 2015-Q2 2017)
- 1.3 Train Uzbekenergo staff on meter installation and AEM system operation (Q3 2017-Q4 2020) [GCD] [gender equality]
- 1.4 Complete AEM system installation and make the system functional (Q1 2018-Q4 2020) [knowledge solutions]
- 1.5 Complete meter installation (Q1 2018-Q4 2020)

Output 2. Operations manual adopted and loss reduction operations strengthened.

- 2.1 Recruit and mobilize project implementation consultant (advance action) (Q2 2015-Q2 2016) [GCD]
- 2.2 Establish loss reduction (metering and testing) units and train staff (Q1 2016-Q1 2017) [GCD] [gender equality]
- 2.3 Develop and implement standard operations procedure for monitoring and testing (Q1 2016-Q1 2018) [GCD]

Output 3. Customer service for end-users improved.

- 3.1 Commence public information program with creation of women core groups at the regional centers (Q1 2016-Q4 2019) [gender equality]
- 3.2 Customer feedback and complaint redress mechanism introduction (Q1 2016-Q4 2019) [GCD] [gender equality]
- 3.3 Train regional customer service center staff (Q1 2017-Q4 2019) [GCD] [gender equality]

Inputs

| | |
|---|--|
| Asian Development Bank: | \$300,000,000 (ordinary capital resources) |
| Government of Uzbekistan: | \$101,000,000 |
| Joint Stock Company Uzbekenergo: | \$73,000,000 |
| Uzbekistan Fund for Reconstruction and Development: | \$70,000,000 (loan) |

Assumptions for Partner Financing

Not Applicable

AEM = advanced electricity metering, GCD = governance and capacity development, PES = regional distribution enterprises, PIC = project implementation consultant, Q = quarter.

Source: Asian Development Bank.

^a Government of Uzbekistan. 2015. *Decree of the President of the Republic of Uzbekistan No UP-4707 dated 4 March 2015 on the program of measures to promote structural reforms, modernization and diversification of production in 2015-2019*. Tashkent.

Source: Asian Development Bank.

B. Monitoring

56. **Project performance monitoring.** The following indicators will be updated in the quarterly progress reports and at the time of semi-annual meetings and the midterm review expected in two years from the date of loan effectiveness. The financial indicators will be monitored annually at the time of submission of annual financial report.

[Project performance indicators]

- National level system losses by region, by customer category, by technical/non-technical losses
- Distribution losses by region, by customer category, by technical/non-technical losses
- Collection rate by region, by customer category
- Days in Receivables (Average Accounts Receivable x 360 days/Revenues, by region)
- Number of AEM installed by region, by customer category, by type
- Number of personnel trained by region, by sex, by job category, by training type
- Number of customer relations officers positioned at each district service center, by sex
- Number of AEM brochures and media advertisement produced

[risks and assumptions]

- Customer tariff by customer category

[Financial indicators]

- Net income after tax - annually
- Debt service coverage ratio of Uzbekenergo (the ratio of cash flow from operations to annual debt service obligations) - annually
- Self-financing ratio (the ratio of cash flow from operations to average capital expenditures) – annually
- Days in Receivables (Average Accounts Receivable x 360 days/Revenues)

57. **Compliance monitoring:** Loan covenants — policy, legal, financial, economic, environmental, and others — will be monitored through semi-annual project meeting and the midterm review.

58. **Safeguards monitoring** will be performed by the project supervision and project management consultant and PMU. The monitoring results will be included in the quarterly progress reports, and semi-annual environmental reports.

59. **Gender and social dimensions monitoring** will be performed by the project supervision and project management consultant and PMU. The monitoring results will be included in the quarterly progress reports, and semi-annual environmental reports.

C. Evaluation

60. **Inception Mission.** ADB will field an inception mission after loan signing to (i) establish a working relationship between ADB and the EA; and (ii) to ensure that the borrower and EA understand ADB's procedures.

61. **Review Missions.** ADB will field review missions at least once a year to review overall implementation of the project and update project implementation schedule based on mission findings.

62. **Midterm Review Mission.** ADB will field a midterm review mission after two years of

loan signing to assess whether attainment of the project's immediate objective (purpose in terms of the design and monitoring framework) is still likely.

63. **Project Completion Review Mission.** ADB will field a project completion review mission upon physical completion of the project to commence preparation of ADB's project completion report. Uzbekenergo will submit a project completion report to ADB within 6 months of physical completion of the project.¹¹

D. Reporting

64. Uzbekenergo will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 2 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts and the executing agency AFSs, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

65. Project information will be strategically disseminated through media at main milestones including loan signing, contract awards and project completion. Grievance redress mechanism will establish at the PMU and each relevant PES and distribution service centers, by phone and email, and through public consultation events.

66. In compliance with the minimum requirements of ADB's Public Communications Policy (2011), the Uzbekenergo will designate an officer as focal point for regular contact with project-affected people and other stakeholders at PMU. The designated officer will be responsible for obtaining the information from the complainant to identify source of problem and verify the complaint. The PMU shall provide project performance updates on progress every six months.

¹¹ Project completion report format available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

Communications Strategy Matrix: Advanced Electricity Metering Phase 4 Project

| Communications Strategy Matrix | | | | | | | | | |
|--|--|---|--|--|--|--|---|--|---|
| <p>Communications Context: Uzbekenergo, the power utility in Uzbekistan, suffers from high distribution losses and low tariff collection rates, exposing its financial sustainability at risk. Its weak financial performance undermines investment necessary for providing reliable and affordable electricity to its customers. The advanced electricity metering (AEM) system to be introduced under the project will help Uzbekenergo reduce distribution losses and improve tariff collection rates. The installation of the advanced electricity meters will temporarily affect each household and customer. The new billing system will allow customers to enjoy easier and faster access to electricity billing. Improved financial sustainability will in turn allow Uzbekenergo to provide reliable and affordable electricity. However, most customers do not have sufficient understanding on AEM. Some customers will no longer be able to tamper with the meters. Others who have been stealing electricity may have to pay a full amount for electricity used. Uzbekenergo staff engaged in meter reading and tariff collection (controllers) may be helping some customers not to make full payment for electricity used. Most of controller positions may not be required after the project.</p> <p>It is therefore important (i) to help customers understand that full payment for electricity used is necessary for a better service and that AEM is the best way to achieve this; (ii) to enhance customers' awareness of energy efficiency to reduce electricity bills; and (iii) to help Uzbekenergo controller staff understand that new operations will be introduced and there will be retraining for their new roles and functions.</p> <p>Project Objective: There will be three outputs to this project: (i) AEM infrastructure installed and functional; (ii) operations manual developed and loss reduction operations strengthened; and (iii) customer service for end-users improved.</p> | | | | | | | | | |
| Strategic Elements | | | | | | Work Plan Elements | | | Evaluation |
| Objectives | Risks | Audience/ Stakeholders | Current and Desired Behavior | Messages/ Information | Activities/ Channels | Timeframe | Responsibility | Resources Needed | Expected Outcomes |
| (i) To help customers understand that full payment for electricity used is necessary and that AEM is the best way to achieve this | Lack of cooperation by poorly informed customers could cause delay and increase cost | Customers with full payment Customers without full payment | All customers understand that full payment is important and that they make full payment on time. (Currently not all pay fully) | Every customers should pay for the electricity used | Advertisements (TV, radio, posters). Concept, story line, and production (gender-sensitive approach to be adopted) Publications (leaflet, brochure): Mobile exhibition and displays Letters to partners | Q1 2017 (i.e. 1 year before the meter installation activities): Planning and concept development | Consultant: to help develop presentations, workshop designs, storyline, support Uzbekenergo activities, and train PR unit Uzbekenergo: to support Consultant work, lead implementation of public communication activities with support from consultant | Public information (gender) expert consultant: 10 person months \$1 million (excluding the consultant fee) is allocated for the cost of public information program (and gender action plan) | Majority of customers support the project or are neutral (thus cooperate when installing the meters). |
| | | | | Full payment of tariff is important for sector sustainability, reliable and affordable electricity | | Q3 2017 (i.e. 6 months before the meter installation activities): Initiate public communication | | | Majority of customers understand the key function of advanced electricity metering. |
| | | | | AEM will improve customer services and access to | | Q3 2017-Q2 2020 (installation) | | | All customers adopt the advanced electricity |

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|---|--|--|--|--|---|--|---|--|--|
| | | | | <p>billing becomes easier and faster</p> | <p>Media relations (press pack, press releases, conferences, briefing)</p> <p>Direct mailing to customers with bills (mass mailing)</p> <p>Public meetings, information for customers</p> <p>Website and e-newsletter</p> <p>School competition supported by Uzbekenergo's presentations</p> <p>Coordination, Monitoring, Reporting</p> | <p>period): Implement public communication</p> | <p>UzInfoEnergo: to support Consultant work, lead production and broadcasting contracting</p> | | <p>meters and make fully tariff payment on time.</p> |
| <p>(ii) To enhance customers' awareness of energy efficiency to reduce customers' bills efficiently</p> | <p>Customers may not have sufficient knowledge on how they can reduce bills by adopting energy efficiency equipment and using equipment efficiently.</p> | <p>Customers with full payment</p> <p>Customers without full payment</p> | <p>All customers understand that adopting energy efficient equipment and using it efficiently may reduce electricity bills. (Currently not all are aware of energy</p> | <p>Energy efficiency can reduce the overall cost of electricity use.</p> <p>There are many approaches and options for energy efficiency.</p> | <p>Presentations and trainings for women's groups etc. Presentations first to be made to Uzbekenergo staff who will in turn make presentations to Makhallas and women's group.</p> <p>Follow-up</p> | <p>Q1 2017 (i.e. 1 year before the meter installation activities): Planning and concept development</p> <p>Q3 2017 (i.e. 6 months before the meter installation activities): Initiate public</p> | <p>Consultant: to help develop presentations, workshop designs, support Uzbekenergo activities.</p> <p>Uzbekenergo: to support Consultant's work, support and train Makhallas and women's group</p> | <p>Public information (gender) expert consultant: 10 person months</p> <p>\$1 million (excluding the consultant fee) is allocated for the cost of public</p> | <p>Majority of customers have basic understanding on energy efficiency</p> <p>Majority of customers have adopted at least one energy efficiency measure.</p> |

| | | | | | | | | | |
|---|---|---|---|--|---|--|--|--|--|
| | | | efficiency) | | workshops on lessons learned, challenges and how to deal with them. | communication Q3 2017-Q2 2020 (installation period): Implement public communication | Makhallas and women's group: to support disseminating information to the community with support from Uzbekenergo | information program (and gender action plan) | |
| (iii) To help Uzbekenergo staff understand that new operations will be introduced and there will be retraining controller staff for their new roles and functions | Uzbekenergo staff do not want to effectively adopt the new AEM system Customer services does not improve Controller staff may not support the project in fear of retrenchment Uzbekenergo staff may continue to allow customers to tamper with meters and to non-payment | Uzbekenergo staff in general Particularly, controller staff Customer services staff | All Uzbekenergo staff understand the basic functions of the AEM system. Controllers are retrained and take respective new roles and functions. Uzbekenergo staff refrain from colluding with customers. | Uzbekenergo will introduce new AEM system to reduce losses and improve revenue collection. Improvement in customer services is a key for improving revenue collection. Redundant controllers will be retrained to take new roles and functions. Staff should not collude with customers to allow customers to tamper with meters and to non-payment | Team establishment for customer services improvement. Agree internal coordination and reporting procedures Review implementation of customer services strategies, agree ongoing targets, confirm monitoring procedures Issue internal memos on retraining and new roles and functions Conduct workshop and training | Q1 2017 (i.e. 1 year before the meter installation activities): Identify team at national, regional and district level, agree work plan, training needs analysis and trainings (This assumes the customer service analysis has already been carried out and strategy developed) Q3 2017-Q2 2020 (installation period): workshops and training | Consultant: to help develop presentation material, support Uzbekenergo Uzbekenergo: to conduct workshop, dissemination of instruction and information on retraining | Public information (gender) expert consultant: 10 person months \$1 million (excluding the consultant fee) is allocated for the cost of public information program (and gender action plan) | The AEM system is effectively adopted and operationalized. Customer services improved. Controller staff are retrained, assigned to new roles and functions |

ADB Public Communications Strategy

| Project Documents [language] | Means of Communication | Responsible Party | Frequency | Audience(s) |
|---|--|----------------------|---|-------------------------|
| Project Information Document (PID) [English/Russian] | ADB's website | ADB | initial PID no later than 30 calendar days of approval of the concept paper; quarterly afterwards | General Public |
| Design and Monitoring Framework (DMF) [English] | ADB's website | ADB | draft DMF after post fact-finding mission | General Public |
| Report and Recommendation of the President [English] | ADB's website | ADB | within 2 weeks of Board approval of the project | General Public |
| Legal Agreements [English] | ADB's website | ADB | within 2 weeks after Legal Agreement signing | General Public |
| Social Poverty Reduction and Social Strategy [English] | ADB's website | ADB | within 2 weeks of Board approval of the project | General Public, project |
| Project Administration Manual [English] | ADB's website | ADB | within 2 weeks of Board approval of the project | General Public |
| Major Change to Project [English] | ADB's website | ADB | within 2 weeks of approval of the change | General Public |
| Completion Report [English] | ADB's website | ADB | within 2 weeks of circulation to the Board for information | General Public |
| Business opportunities, bidding process and guidelines, results of bidding process, | ADB's website Uzbekenergo's website | ADB Uzbekenergo | per project progress, | General Public |

67. The work plan on public information program is summarized under XIII Gender and Social Dimensions.

X. ANTICORRUPTION POLICY

68. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.¹² All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.¹³

69. To support these efforts, relevant provisions are included in the loan agreement/regulations and the bidding documents for the project. Procurement will follow ADB's Procurement Guidelines (April 2015, as amended from time to time), consultant selection will adopt ADB's Guidelines on the Use of Consultants (March 2013, as amended from time to time), and disbursement will be made in accordance with ADB's disbursement policies, guidelines, practices, and procedures.

¹² Available at: <http://www.adb.org/documents/anticorruption-policy>

¹³ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

XI. ACCOUNTABILITY MECHANISM

70. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.¹⁴

XII. RECORD OF PAM CHANGES

{All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.}

| Date Revised/Updated | PAM Section | Change |
|-----------------------------|--------------------|---------------|
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¹⁴ For further information see: <http://www.adb.org/site/accountability-mechanism/main>