



# INNOVATIVE CARBON RESOURCES ALLOCATION FOR ENERGY TRANSITION (ICRAFT)

Annual Report 2022

## Contents

<b>SECTION 1. DESCRIPTION OF PROJECT ACTIVITY</b> .....	<b>3</b>
1.1 General description of project activity .....	3
1.2 Location of project activity.....	3
1.3 Crediting period duration.....	3
1.4 Description of implemented program activity.....	3
1.5 Post-validation changes .....	3
1.5.1 Temporary deviations from the validated monitoring plan, applied methodologies, standardized baselines or other tools and models applied..	3
1.5.2 Corrections .....	4
1.5.3 Changes to the start date of the crediting period.....	4
1.5.4 Inclusion of monitoring plan .....	4
1.5.5 Permanent changes to the validated monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other tools and models used .....	4
1.5.6 Changes to program design.....	4
<b>SECTION 2. DESCRIPTION OF MONITORING SYSTEM</b> .....	<b>5</b>
2.1 Data and parameters fixed ex-ante.....	5
2.2 Data and parameters monitored .....	7
<b>SECTION 3. CALCULATION OF EMISSION REDUCTIONS</b> .....	<b>18</b>
3.1 Calculation of baseline emissions or baseline .....	18
3.2 Calculation of project emissions.....	19
3.3 Calculation of leakage emissions.....	19
3.4 Calculation of emission reductions.....	19
3.5 Comparison of emission reductions achieved with estimates in the validated CPDD.....	19
3.6 Explanation of calculation of “amount estimated ex ante for this monitoring period in the CPDD” .....	19
3.7 Remarks on increase in achieved emission reductions.....	19
<b>SECTION 4. PARAMETERS MONITORED TO EVALUATE TRANSFORMATIVE     CHANGE</b> .....	<b>21</b>
<b>SECTION 5. PARAMETERS MONITORED TO EVALUATE SUSTAINABLE     DEVELOPMENT CO-BENEFITS</b> .....	<b>24</b>
<b>SECTION 6. ENVIRONMENTAL AND SOCIAL REPORTING INDICATORS</b> .....	<b>27</b>
<b>SECTION 7. FINANCIAL REPORTING</b> .....	<b>28</b>
<b>SECTION 8. OTHER RELEVANT INFORMATION</b> .....	<b>28</b>

## Monitoring report form (Version 1.1)

### MONITORING REPORT

<b>Title of the project/program activity</b>	Innovative Carbon Resource Application for Energy Transition (iCRAFT)
<b>Title of methodology applied</b>	Methodology and model for ex-post quantification of CO <sub>2</sub> emissions impact of end-user energy pricing
<b>Version number of this monitoring report</b>	3
<b>Completion date of this monitoring report</b>	27/03/2024
<b>Duration of this monitoring period</b>	January 1, 2021 – December 31, 2022
<b>Monitoring report number for this monitoring period</b>	1
<b>Host Party</b>	Uzbekistan
<b>Sectoral scopes</b>	Energy sector (gas and electricity)
<b>Amount of GHG emission reductions achieved by the project activity in this monitoring period</b>	Quantity of emission reductions achieved:
	2021: 0 MtCO <sub>2</sub> e (no ERs claimed for this period) 2022: 3,608,070 <del>MtCO<sub>2</sub>e</del> Total for the monitoring period: 3,608,070 <del>MtCO<sub>2</sub>e</del>
<b>Amount of GHG emission reductions estimated ex ante for this monitoring period</b>	2021: 1,716,755 <del>MtCO<sub>2</sub>e</del> 2022: 4,031,832 <del>MtCO<sub>2</sub>e</del> Total for the monitoring period: 5,748,587 <del>MtCO<sub>2</sub>e</del>

## Section 1. Description of project activity

### 1.1 General description of project activity

The proposed program will support the implementation of the next phase of more ambitious energy reforms through mobilizing climate finance payments for results-based emission reductions to carry on the highest priority reform needs. Emission reductions are generated due to the change in end-user energy demand resulting from the gradual adjustment in electricity and natural gas tariffs. The methodological and modelling approach that is used to quantify emission reductions from energy pricing policy reform is designed to examine the effects of tariff reform on end-user energy demand. It helps model the emission reductions that can be achieved through the adoption of energy pricing policies by comparing emissions from the observed scenario (“*Withpolicy*” scenario) with the counterfactual baseline scenario (“*Withoutpolicy*” scenario). The “*Withoutpolicy*” scenario is generated to simulate what would have happened in the absence of energy pricing policies. The emission reductions resulting from changes in electricity and gas tariffs are quantified through Energy Policy MRV Model.

### 1.2 Location of project activity

Uzbekistan, countrywide

### 1.3 Crediting period duration

The crediting period of the program is 2021-2027.

### 1.4 Description of implemented program activity

Since 2017 which is the start year of the new tariff adjustment being accelerated, the tariff for both electricity and natural gas has been increasing steadily. The tariff was frozen in 2020 and 2021 to manage the covid impact. The last tariff adjustment was done in 2022 and is projected to reach cost recovery in 2026 according to the following schedule.

**Table 1. Projected tariff increase during 2022-2030 under policy scenario**

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Electricity	35.3%	26.0%	9.8%	6.9%	5.0%	5.0%	5.0%	5.0%	5.0%
Gas	42.2%	29.7%	9.8%	6.9%	5.0%	5.0%	5.0%	5.0%	5.0%
CPI	11.4%	11.2%	9.8%	6.9%	5.0%	5.0%	5.0%	5.0%	5.0%

### 1.5 Post-validation changes

#### 1.5.1 Temporary deviations from the validated monitoring plan, applied methodologies, standardized baselines or other tools and models applied

As agreed by TCAF and the Program Counterpart, no ERs will be claimed for 2021. In line with this, in a conservative manner, the 2021 GHG emissions under the “*Withpolicy*” scenario are considered to be the same as the GHG emissions under the “*Withoutpolicy*” scenario.

### **1.5.2 Corrections**

No corrections are proposed.

### **1.5.3 Changes to the start date of the crediting period**

There are no changes to the crediting period.

### **1.5.4 Inclusion of monitoring plan**

Monitoring plan is included in the validated CPDD.

### **1.5.5 Permanent changes to the validated monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other tools and models used**

There are no permanent changes to the monitoring plan, applied methodology or model.

### **1.5.6 Changes to program design**

There have been no changes in the program.

## Section 2. Description of monitoring system

For information on data collection and procedures for MRV please refer to iCRAFT Project Operations Manual.

### 2.1 Data and parameters fixed ex-ante

All historical data prior to 2022 are fixed ex-ante and available under the Uzbekistan Energy Policy MRV model ("iCRAFT\_UZB\_MRV"). The following table Includes a description of all relevant parameters fixed ex-ante.

Parameter	Description [and unit]	Source(s) of data
Gross Domestic Product	Gross domestic product in constant 2021 [UZD] [table 6 "Library". MRV model]	World Development Indicators (World Bank)
Gross Domestic product (GDP) growth	Annual GDP growth as percentage [%] [table 6 "Library". MRV model]	World Development Indicators (World Bank)
Consumer Price Index mid period	Monthly index with 2021=1 as reference point [units] [table 50 "Library".MRV model]	World Economic Outlook (WEO) World Development Indicators (World Bank) <a href="https://stat.uz/en/official-statistics/prices-and-indexes">https://stat.uz/en/official-statistics/prices-and-indexes</a>
Inflation rate	Local annual inflation as percentage [%] [table 6 "Library". MRV model]	World Development Indicators (World Bank)
Exchange Rate	Exchange rates between local and US currency as Nominal UZS / Nominal US dollar on annual basis [units] [table 6 "Library". MRV model]	<a href="https://www.oanda.com/">https://www.oanda.com/</a>
Carbon Price	UZS/tCO2 [tab "CarbonPrice.1". MRV model]	Assumed to be zero
Elasticity	Short-run and long-run elasticity for electricity, natural gas and heating oil for residential and non-residential users. [table 33 "Library". MRV model]	WB. Estimated from two separate methods. A survey reporting electricity consumption before/after tariff increase, and aggregate consumption data from the utility
Residential Electricity Consumption	Annual final electricity consumption for residential consumers [GWh] [table 48 "Library". MRV model]	Ministry of Economy and Finance (MoEF); Statistics Agency <sup>1</sup>

<sup>1</sup> <https://stat.uz/>

Non-residential Electricity Consumption	Annual final consumption for non-residential consumers [GWh] [table 48 "Library".MRV model]	MoEF; Statistics Agency
Residential Natural Gas Consumption	Annual final electricity consumption for residential consumers [GWh] [table 48 "Library". MRV model]	MoEF; Statistics Agency
Non-residential Natural Gas Consumption	Annual final consumption for non-residential consumers, excluding transport and heating sectors [GWh]. [table 48 "Library". MRV model]	MoEF; Statistics Agency
Exogenous Energy Intensity Improvement	Incremental EE improvement resulting from exogenous actions, such as targeted programs [% per year] [tab "FC.EnergyIntensity". MRV model]	Assumed to be zero for all sectors
Endogenous Energy Intensity Improvement	Incremental EE improvement resulting from the subsidy removal policy [% per year] [tab "FC.EE.1". MRV Model]	Assumed to be zero for all sectors
Total Net Energy Generation	Actual and expected electricity generation [GWh] from 2012 to 2022 [tab "FC.EE.1". MRV Model]	MoEF; Statistics Agency; Master plan 2020-2030 2 (for forecast estimates)
Total Energy Sales	Actual and expected electricity sales [GWh] from 2012 to 2022 [table 1 "Library". MRV model]	MoEF; Statistics Agency; Master plan 2020-2030 3 (for forecast estimates)
Average losses	Actual and expected electricity loses [% of sales] [table 1 "Library". MRV model]	Calculated based on actual and projections up to 2033
Off grid Generation	Amounts of off-grid generation assumed to be available in Uzbekistan [table 37 "Library". MRV model]	Statistics Agency for 2012-2020 plus estimates for 2021-20334
Electricity Imports	Annual volume of electricity imports [GWh]	MoEF; Statistics Agency

<sup>2</sup> <https://minenergy.uz/en/lists/view/77>

<sup>3</sup> <https://minenergy.uz/en/lists/view/77>

<sup>4</sup> Data assumed constant from 2020 onwards.

	[table 8 “Library”. MRV model]	
Electricity Exports	Annual volume of electricity exports [GWh] [table 8 “Library”. MRV model]	MoEF; Statistics Agency
Capacity of Imports/Exports	Annual capacity for imports/exports with each client/country [GWh] [table 8 “Library”. MRV model]	MoEF; Assumed constant (3900 MW)
Planned Reserve Margin	Extra supply available above expected peak demand [%] [table 30 “Library”. MRV model]	Calculation, based on Uzbekistan load demand curve 2019 (20%)
Plant level data: Plant Type / Subtype Technology First year of operation Capacity  Capital Cost Variable op. costs Fixed op. cost Capacity Factor Heat Rate Maximum available capacity CO2 emissions rate	Units: [descriptive] [descriptive] [year] [MW]  [US\$/kW] [US\$/kW] [US\$/kW] [%] typical [MJ/MWh] [MW]  [tCO2/MWh] [tab “PS.PlantList”. MRV Model”]	Sources: Ministry of Energy, Uzhydropower, and Thermopower JSC.  Lazar’s levelized cost of energy analysis <sup>5</sup>  IPCC 2006 based on fuel
Electricity Tariff for residential and non-residential consumers	Nominal monthly average end-user Tariff [UZS/kWh] [table 49 “Library”. MRV model]	Ministry of Energy, Uzbekenergo
Natural Gas Tariff for residential and non-residential consumers	Nominal monthly average end-user Tariff [UZS/kWh] [table 49 “Library”. MRV model]	Ministry of Energy, Uzbekneftegaz

## 2.2 Data and parameters monitored

The project uses the Uzbekistan Energy Policy MRV model (“iCRAFT\_UZB\_MRV<sup>6</sup>”) developed by TCAF specifically for iCRAFT for data collection and estimation of emission reductions.

<sup>5</sup> <https://www.lazard.com/media/sptlfats/lazards-levelized-cost-of-energy-version-150-vf.pdf>

<sup>6</sup> The relevant version of the model has been provided to the verifier as part of the verification package, along with supporting documentation requested etc.



Changes to main variables, such as tariffs, consumption and power load curve, are updated in specific sections of the MRV model. For variables not updated, the model uses as default values the data entered originally in the model at the time of validation.

The following table includes a description of relevant parameters monitored during the current period.

Parameter	Description [and unit]	Source of data	Updated in this report [YES/NO]
Gross Domestic Product	Gross domestic product in constant 2021 [UZD]	World Development Indicators (World Bank)	NO
Gross Domestic product (GDP) growth	Annual GDP growth as percentage [%]	World Development Indicators (World Bank)	NO
Consumer Price Index mid period	Monthly index with 2021=1 as reference point [units]	World Economic Outlook (WEO) World Development Indicators (World Bank) <a href="https://stat.uz/en/official-statistics/prices-and-indexes">https://stat.uz/en/official-statistics/prices-and-indexes</a>	YES
Inflation rate	Local annual inflation as percentage [%]	World Development Indicators (World Bank) and other WB sources <sup>7</sup>	YES
Exchange Rate	Exchange rates between local and US currency as Nominal UZS / Nominal US dollar on annual basis [units]	<a href="https://www.oanda.com/">https://www.oanda.com/</a>	NO
Carbon Price	UZS/tCO <sub>2</sub>	Assumed to be zero	NO
Elasticity	Short-run and long-run elasticity for electricity, natural gas and heating oil for residential and non-residential users.	WB. Estimated from two separate methods. A survey reporting electricity consumption before/after tariff increase, and aggregate consumption data from the utility	NO
Residential Electricity Consumption	Annual final electricity consumption for residential consumers [GWh]	Ministry of Economy and Finance (MoEF); Statistics Agency <sup>8</sup>	YES for 2022
Non-residential Electricity Consumption	Annual final consumption for non-residential consumers [GWh]	MoEF; Statistics Agency	YES for 2022

<sup>7</sup> <https://openknowledge.worldbank.org/entities/publication/07d94843-8f90-5cae-88fd-8516fe310bb6>

<sup>8</sup> <https://stat.uz/>

Residential Natural Gas Consumption	Annual final electricity consumption for residential consumers [GWh]	MoEF; Statistics Agency	YES for 2022
Non-residential Natural Gas Consumption	Annual final consumption for non-residential consumers, excluding transport and heating sectors [GWh].	MoEF; Statistics Agency	YES for 2022
Plant level data: Plant Type / Subtype Technology First year of operation Capacity  Capital Cost Variable op. costs Fixed op. cost Capacity Factor Heat Rate Maximum available capacity CO2 emissions rate	Units: [descriptive] [descriptive] [year] [MW]  [US\$/kW] [US\$/kW] [US\$/kW] [%] typical [MJ/MWh] [MW]  [tCO2/MWh]	Sources: Ministry of Energy, Uzhydropower, and Thermopower JSC.  Lazar's levelized cost of energy analysis <sup>9</sup>  IPCC 2006 based on fuel	YES <sup>10</sup>  NO  NO
Power Sector Load Curve	Hourly load for the verified period <sup>11</sup> [MW]	Ministry of Energy	YES for 2022
Electricity Tariff for residential and non-residential consumers	Nominal monthly average end-user Tariff [UZS/kWh]	Ministry of Energy, Uzbekenergo	YES for 2022
Natural Gas Tariff for residential and non-residential consumers	Nominal monthly average end-user Tariff [UZS/kWh]	Ministry of Energy, Uzbekneftegaz	YES for 2022

Please refer to the iCRAFT\_UZB\_MRV model for the specific values of these variable.

Four types of data are collected:

1. Data that documents macroeconomic variables and forecasts.

<sup>9</sup> <https://www.lazard.com/media/sptlfats/lazards-levelized-cost-of-energy-version-150-vf.pdf>

<sup>10</sup> 2024\_02 Consolidated Plant List .xlsx

<sup>11</sup> As described in this MR, only 2022 data has been considered for ER calculations (see section 3 below).

2. Data that documents the end-user demand for electricity and natural gas (Final Energy Consumption) by sector under the coverage of the policy in question.
3. Data that documents the current operation of the electricity supply system under the coverage of the policy in question and for all sectors and client classes.
4. Data that documents the change in policy that occurred (change in the tariff levels)

### **Electricity system-level data**

To capture any changes in electricity demand, data to be collected on the real operation of all the generating units involved, including any constraints historically or currently placed on their operation.

<b>Electricity System-level data (Electricity Imports, Exports and Generation - transformation from other energy sources)</b>			
<b>Annual system level data required</b>	<b>Unit:</b>	<b>historical data for ex-post</b>	<b>forecast data for ex-ante</b>
Total System Generation	<i>MWh</i>	[Annual]	[Annual_Est]
Hourly generation (raw data for load-duration analysis)	<i>MWh</i>	[Hourly]	[Hourly_Est]
System T&D Loss Rate	%	[Annual]	[Annual_Est]
Off-Grid Capacity	<i>MW</i>	[Annual]	[Annual_Est] with specific data from known planned plants and assumption-driven estimate for other plants /years
Off-Grid Generation	<i>MWh</i>	[Annual]	[Annual_Est] with specific data from known planned plants and assumption-driven estimate for other plants /years
<b><i>Imported Electricity</i></b>			
Imported Energy	<i>MWh</i>	[Annual]	[Annual_Est]
Imported Capacity	<i>MW</i>	[Annual]	[Annual_Est]
<b><i>Exported Electricity</i></b>			
Exported Energy	<i>MWh</i>	[Annual]	[Annual_Est]
Exported Capacity	<i>MW</i>	[Annual]	[Annual_Est]
Electricity price	<i>UZS/MWh</i>	[Annual] with cells to capture tariffs by customer group/sector as appropriate	[Annual_Est] with cells to capture tariffs by customer group/sector as appropriate
Natural Gas Price - Delivered	<i>UZS/MJ</i>	[Annual]	[Annual_Est]
<b><i>Electricity production, tier 1 or tier 2 inventory data</i></b>			
Total Electricity generated	<i>MWh</i>	[Annual]	
Natural Gas Consumed	<i>MJ</i>	[Annual]	

### Electricity System-level data (Electricity Imports, Exports and Generation - transformation from other energy sources)

Annual system level data required	Unit:	historical data for ex-post	forecast data for ex-ante
Fuel Oil Consumed (by oil grade if appropriate)	<i>MJ</i>	[Annual]	
Coal Consumed	<i>MJ</i>	[Annual]	
Carbon Emissions per period from Natural Gas	<i>tonne CO2</i>	[Annual_Calc]	
Carbon Emissions per period from Fuel Oil	<i>tonne CO2</i>	[Annual_Calc]	
Carbon Emissions per period from Coal	<i>tonne CO2</i>	[Annual_Calc]	

### Electricity generating units data

Data required for each generating unit	Unit:	historical data for ex-post	forecast data for ex-ante
Unit name	<i>Text</i>	[Descriptive]	[Descriptive] for known planned plants only
Unit ID number	<i>Number</i>	[Descriptive]	[Descriptive] for known planned plants only
Ownership		[Descriptive]	[Descriptive] for known planned plants only
Transmission Zone name or number	<i>Text</i>	[Descriptive]	[Descriptive] for known planned plants only
Unit maximum capacity	<i>MW</i>	[Descriptive]	[Descriptive] for known planned plants or [Descriptive_w/Default] based on studies and projections
Online Date	<i>Year</i>	[Descriptive]	[Descriptive]
Retirement Date	<i>Year</i>	[Descriptive] when known, or [Descriptive_w/Default] based on expected life	[Descriptive_w/Default] based on expected life
Emission Controls	<i>Name of controls (e.g., SCR, FGD, scrubber)</i>	[Descriptive_w/Default]	[Descriptive_w/Default]
Unit fuel type	<i>Fuel (e.g., NG, oil, solar PV, solar thermal, hydro)</i>	[Descriptive]	[Descriptive]

Data required for each generating unit	Unit:	historical data for ex-post	forecast data for ex-ante
Fuel source	<i>Source (e.g., pipeline, rail shipments)</i>	[Descriptive_w/Default]	[Descriptive_w/Default]
Variable O&M Costs	<i>UZS/MWh</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Fixed O&M Costs	<i>UZS/MW-year</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Expected Annual Capacity Factor	%	[Annual_w/Default]	[Annual_Est_w/Default]
Expected Annual Availability or Forced Outage Rate	%	[Annual_w/Default]	[Annual_Est_w/Default]
Annual Capital Requirements (if additional from FOM)	<i>UZS/MW-year</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Ramp Rate	<i>MW/hr</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Minimum Runtime	<i>hrs</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Minimum Off Time	<i>hrs</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Maximum run time or other operating constraints	<i>hrs</i>	[Annual_w/Default]	[Annual_Est_w/Default]
Generation	<i>MWh</i>	[Subannual]	
Capacity Factor	%	[Subannual_Calc]	
Fuel or Heat Input	<i>MJ</i>	[Subannual]	
Heat Rate	<i>MJ/MWh</i>	[Subannual]	
CO2 Emission Rate from energy	<i>tonne CO2/MWh</i>	[Subannual_Calc]	
CO2 Emission Rate - non-energy sources	<i>tonne CO2/MWh</i>	[Subannual]	
Carbon Emissions per period from energy	<i>tonne CO2</i>	[Subannual_Calc] with degradation factor	
Carbon Emissions per period: non-energy sources	<i>tonne CO2</i>	[Subannual_Calc] with degradation factor	

## Total final consumption data

Annual system level data required	Unit:	historical data for ex-post	forecast data for ex-ante
<b>Residential</b>			
Electricity	MWh	[Annual]	[Annual_Est]
Natural Gas	MJ	[Annual]	[Annual_Est]
<b>Industry</b>			
Electricity	MWh	[Annual]	[Annual_Est]
Natural Gas	MJ	[Annual]	[Annual_Est]
<b>Commercial and Public Services</b>			
Electricity	MWh	[Annual]	[Annual_Est]
Natural Gas	MJ	[Annual]	[Annual_Est]
<b>Other (Agricultural, Forestry, Fishing, Non-specified)</b>			
Electricity	MWh	[Annual]	[Annual_Est]
Natural Gas	MJ	[Annual]	[Annual_Est]

## End-user energy pricing data

Consistent monitoring and collection of data will be done on the end-user demand for energy (Final Energy Consumption) by sector<sup>12</sup> and by fuel type and in different tariff brackets. Data for 30 most recent years is used to develop local elasticities, and then data is required for each historic year in the modelling period, updated yearly.

Annual system level data required	Unit:	historical data for ex-post	forecast data for ex-ante
<b>Residential</b>			
Electricity	UZS/MWh	[Annual]	[Annual_Est]
Natural Gas	UZS/MJ	[Annual]	[Annual_Est]
<b>Industry</b>			
Electricity	UZS/MWh	[Annual]	[Annual_Est]
Natural Gas	UZS/MJ	[Annual]	[Annual_Est]
<b>Commercial and Public Services</b>			
Electricity	UZS/MWh	[Annual]	[Annual_Est]
Natural Gas	UZS/MJ	[Annual]	[Annual_Est]
<b>Other (Agricultural, Forestry, Fishing, Non-specified)</b>			
Electricity	UZS/MWh	[Annual]	[Annual_Est]
Natural Gas	UZS/MJ	[Annual]	[Annual_Est]

<sup>12</sup> Residential, Commercial, Public Services, Industry, Agriculture, Forestry, and Fishing

## **Macroeconomic variables and forecasts.**

<b>Econometric Data to define country-specific elasticities</b>	<b>Unit:</b>	<b>historical data for ex-post</b>
Population	million people	30 year's annual data. Cite source
Urbanization	%	30 year's annual data. Cite source
Household electrification of urban and rural households	%	30 year's annual data. Cite source
Ave. Household size (urban and rural)	people/HH	30 year's annual data. Cite source
GDP (in UZS)	US\$ million	30 year's annual data. Cite source
Exchange rate	UZS/USD	
Deflator to USD(2010)		
Income per capita (in constant USD)	US\$/yr	30 year's annual data. Cite source
Electricity price (current LCU and constant USD)	US\$/MJ	30 year's annual data. Cite source
Heat price (current LCU and constant USD)	US\$/MJ	30 year's annual data. Cite source
Coal price (current LCU and constant USD)	US\$/MJ	30 year's annual data. Cite source
Natural Gas price (current LCU and constant USD)	US\$/MJ	30 year's annual data. Cite source
Gasoline price (current LCU and constant USD)	US\$/MJ	30 year's annual data. Cite source
Diesel price (current LCU and constant USD)	US\$/MJ	30 year's annual data. Cite source
Other Oil Products (by oil grade if appropriate)	US\$/MJ	30 year's annual data. Cite source
Renewable (by type if appropriate)	US\$/MJ	30 year's annual data. Cite source
Electricity total consumption	MWh	30 year's annual data. Cite source
Heat total consumption	MJ	30 year's annual data. Cite source
Coal total consumption	MJ	30 year's annual data. Cite source
Natural Gas total consumption	MJ	30 year's annual data. Cite source
Gasoline total consumption	MJ	30 year's annual data. Cite source
Gasoline total consumption	MJ	30 year's annual data. Cite source
Diesel total consumption	MJ	30 year's annual data. Cite source
Other Oil Products (by oil grade if appropriate)	MJ	30 year's annual data. Cite source
Heating and cooling degree days		
Heating degree-days	deg-day	30 year's annual data. Cite source
Cooling degree-days	deg-day	30 year's annual data. Cite source

## Roles and Responsibilities

Per Presidential Decree<sup>13</sup>, a Project Implementation Unit (PIU) with up to seven staff members will be established under the MoEF for the overall coordination and day-to-day implementation of the Project. The PIU will also be responsible for monitoring and evaluating results achieved under the Project, to track implementation progress of the Project activities and key results indicators, submit Annual Reports to the World Bank. To fulfill the coordination role, the following are roles of the PIU staff members to be filled:

1. Center Director – Responsible for the overall work done by the centralized Project Implementation Division
2. Monitoring and evaluation – Responsible for overall monitoring and evaluation of the project progress, results achieved under each project components.
3. Reporting coordinator –Responsible for coordination amongst the various PIU staff/specialists and other departments etc. This function should be senior and would be the ultimate control point and focal point for the auditors/verifiers and any other issues that arise. It will be their role to coordinate the work among the other PIU specialists and ensure all inputs and reports are delivered in a timely manner. This function is responsible for clearing all the input data, ensuring the accuracy and completeness of collected data, and approving its use in the calculation of results that will be published in the annual reports.
4. Emission reductions data collection - Responsible to collecting all data required by the Ex-post MRV model<sup>14</sup>. Data will need to be updated at least annually to update the MRV model.
5. Ex-post MRV model – Responsible for the maintenance and update of the excel-based MRV model. The model will need to be updated annually to provide emission reductions data for the annual report (Annex I).
6. Accounting/financial management – Reporting annually as part of the Annual Report on how the iCRAFT payments have been utilized.
7. Social commitment plan and stakeholder engagement – Per the Environmental and Social Commitment Plan (ESCP, Annex III) and the Stakeholder Engagement Plan (SEP) annual reporting requirements must be fulfilled.
8. Quality Assurance/Quality Control and data archive – All data collected and reported should be maintained in a database for safekeeping and should it be required for verifications and audits. See Section 4.4 for additional details.

## Quality Control and Quality Assurance Procedures

In order to ensure a successful reporting and verification of emission reductions, all data used for the calculation of ERs will be referenced, stored and accessed in a way that ensures a high level of reliability. Key aspects include, among others, clear traceability of data sources, appropriate measures for storing and accessing data as well as back-up procedures to avoid any information loss.

The main objectives of quality control and quality assurance procedures are to:

- Ensure the monitoring and reporting systems are implemented to support the ER issuance process.
- Ensure the integrity of data stored and the calculations.
- Facilitate all operational processes, including the verification of emission reductions.
- Notify in a timely manner any deviations that could impact the expected results.

Procedures for QA/QC activities include the use of several tools, such as:

---

<sup>13</sup> Presidential Decree No.271 dated 8 August 2023

<sup>14</sup> As described above and under “Uzbekistan MRV data requirements” document



1. Monitoring records database
2. QA/QC checklist
3. Backup procedures
4. Training

### Monitoring records database

For all variables defined under the Annual Reporting, the PIU will keep records of monitoring data, as well as events impacting any of the calculations.

The iCRAFT reporting coordinator will ensure that appropriate procedures are set in place with regards to data management, archiving, and access. The PIU department will manage a dedicated folder for iCRAFT data, with different access levels for working documents and final reports. Final documents for verification will be managed by the reporting coordinator only.

Information and documents shall be updated on a monthly or annual basis, in line with the monitoring requirements.

The “monitoring records” will include all variables defined under “Uzbekistan MRV data requirements”. The PIU will generate specific templates for monitoring, and update the POM as needed to include references to appropriate procedures developed from time to time.

Events: Any problems on site or events out of the ordinary should be recorded on a dedicated log or reporting document to be defined by the PIU for events. The PIU reporting team should track events that result in information losses, or events that require temporary deviations from the validated monitoring plan, applied methodologies, standardized baselines or other tools and models applied. These events should include, whenever possible, information and evidence to identify the start time of the event as well as the date and time when it was resolved.

### QA/QC Checklist

iCRAFT reporting coordinator is fully responsible for managing a QA/QC checklist for the documents collected by the reporting team from relevant sources and agencies.

It is recommended as best practice that every month, the coordinator should verify and analyze the information collected and processed, checking that:

1. Information from each source is correctly reported
2. Documents are available in the data base
3. Relevant events are reported appropriately to justify deviations from the standard calculation and reporting processes

### Backup procedures

Loss of all monitored parameters or inconsistent reporting/calculations may result in a lack of ability to report and verify Emission Reductions. As a best practice it is recommended extracting the data from relevant sources on a periodic basis for storage. Another best practice is to save copies of the monitoring data and reporting documents in more than one location. This can be done automatically connecting the monitoring database to one or more virtual folders. Upload frequently (weekly and/or monthly) the data into a different server or physical location.

### Training

Project awareness is probably the most important and efficient mean to ensure a good quality monitoring. People must be aware of basic rules for the calculation of emission reductions, for example the consequences of missing or inaccurate information.

The personnel involved in the management of the project, at the different reporting levels, should be aware of the basic principles for climate change reporting. In particular, the monitoring parameters,

ER calculations, QA/QC procedures, responsibilities in terms of monitoring and verification. All staff within the PIU reporting unit should have received a minimum training on how to use the model and the templates of the annual monitoring report.

The PIU will update the POM with other specific training requirements, as appropriate, from time to time.

## Section 3. Calculation of emission reductions

### Determining the CO<sub>2</sub>e emissions reduction caused by implementing the tariff reform:

The scenario calculations are performed by the model on the following basis:

First, the “*Withpolicy*” scenario is established based on ex-post data on energy consumption and prices for electricity and natural gas. Then the model analyzes the change in end-user demand for each type of energy based on differences in end-user energy prices caused by the policy package that is being evaluated in this analysis. For this, the counterfactual “*Withoutpolicy*” scenario pricing is established and agreed upon, and the demand adjustment is determined by analyzing the price effect by employing the most rigorous possible of the methodologies laid-out in the section “Measuring price effect for demand adjustment”.

### Establishing CO<sub>2</sub>e emissions from “*Withpolicy*” operation

Based on the end-user, final demand data collected, CO<sub>2</sub>e emission levels under the “*Withpolicy*” operation<sup>15</sup> are determined using Equation 7-8<sup>16</sup> and applying country-specific emissions factors per fuel and sector or technology when these are available or from the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, tables 2.2 to 2.10 for stationary sources.

### Establishing CO<sub>2</sub>e emissions from counterfactual “*Withoutpolicy*” operation

The CO<sub>2</sub>e emissions levels under the counterfactual “*Withoutpolicy*” operation are determined with the end-user energy prices that could be expected. Using the results of these analyses, the inventory method is then used in all cases to evaluate the CO<sub>2</sub>e emissions under this counterfactual “*Withoutpolicy*” operation applying equations 9-10.<sup>17</sup>

### 3.1 Calculation of baseline emissions or baseline

A baseline is set by considering business-as-usual, historical trends and the expected trajectory of emissions in the scenario where the policies would have not been implemented and selecting the one that represents the country’s own effort to achieve the NDC. The difference between the “*Withpolicy*” and baseline scenario (“*Withoutpolicy*”) determines the impact of the policy on emission reductions. The summary of GHG emissions “*Withoutpolicy*” is provided in Table 2 below. For the details of the estimations please refer to the ER calculation spreadsheet.

**Table 2. GHG emissions “*Withoutpolicy*”**

	Unit	2021	2022	TOTAL
Electricity	MtCO <sub>2</sub>	23.47	26.46	49.93
Natural Gas	MtCO <sub>2</sub>	39.04	26.99	76.02
TOTAL	MtCO <sub>2</sub>	62.51	63.45	125.95

---

<sup>15</sup> Note that the ‘*Withpolicy*’ scenario represents the actual and observable conditions.

<sup>16</sup> Please refer to CPDD V5-Annex 3 MRV Methodology

<sup>17</sup> Please refer to CPDD V5-Annex 3 MRV Methodology

### 3.2 Calculation of project emissions

Project emissions are calculated as a result of “*Withpolicy*” scenario and provided in the below table, please refer to the ER calculation spreadsheet for the details of calculations.

**Table 3. GHG emissions “*Withpolicy*”**

	Unit	2021 <sup>18</sup>	2022	TOTAL
Electricity	MtCO2	23.47	22.77	46.24
Natural Gas	MtCO2	39.04	37.07	76.11
TOTAL	MtCO2	62.51	59.84	122.35

### 3.3 Calculation of leakage emissions

Leakage emissions are not applicable as per methodology.

### 3.4 Calculation of emission reductions

	Baseline GHG emissions (t CO <sub>2</sub> e)	Project GHG emissions (t CO <sub>2</sub> e)	Leakage GHG emissions (t CO <sub>2</sub> e)	Emission reduction (tCO <sub>2</sub> e)
<b>Total</b>	125,954,297	122,346,227	0	3,608,070

### 3.5 Comparison of emission reductions achieved with estimates in the validated CPDD

Amount achieved during this monitoring period (t CO <sub>2</sub> e)	Amount estimated ex-ante for this monitoring period in the CPDD (t CO <sub>2</sub> e)
3,608,070	5,748,587

### 3.6 Explanation of calculation of “amount estimated ex ante for this monitoring period in the CPDD”

Ex-ante estimates of emission reductions is calculated using the version of the MRV model presented at the time of validation of the program (“UZB\_NewEnergyPolicyMRV v23”).

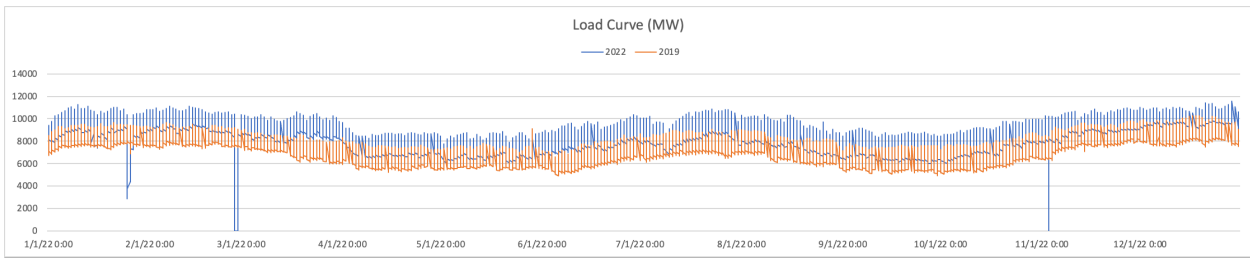
### 3.7 Remarks on increase in achieved emission reductions

In October 2023, the data in the MRV model was updated to the latest official numbers where development data was in place in the model. The ex-ante model submitted at validation has been updated. The following three updates were made to the model:

#### 1. Load Duration data

Previous version of the model used hourly generation data from the year of 2019 which was the most recent available. In this new version, 2022 hourly generation data was made available.

<sup>18</sup> As agreed by TCAF and the Program Counterpart, no ERs will be claimed for 2021. In line with this, in a conservative manner, the 2021 GHG emissions under the “*Withpolicy*” scenario are considered to be the same as the GHG emissions under the “*Withoutpolicy*” scenario.



Please note that although the hourly generation data for 2022 is higher than in 2019, this is used in the calculations in the form of generation by hour as a percentage of the total yearly generation in each of six seasonal bins, which normalizes the year-to-year differences.

### 2. Average energy tariff data by month in 2022

The tariff data for electricity and natural gas by month for 2022 was updated to the final official numbers. This change was made to ensure that the model reflects the most accurate and up-to-date information.

Energy Tariffs in current Uz\$			Annual 2022	2022.01	2022.02	2022.03	2022.04	2022.05	2022.06	2022.07	2022.08	2022.09	2022.10	2022.11	2022.12
<b>Official Data</b>															
Electricity	Residential	Uz\$/kWh	294.50	294.42	294.93	294.50	294.51	294.32	294.28	294.26	294.48	294.48	294.41	294.53	294.63
	Non-residential	Uz\$/kWh	543.98	459.72	454.47	459.60	457.12	484.21	575.21	596.21	571.82	582.76	618.24	613.38	601.42
Natural Gas	Residential	Uz\$/Mj	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18
	Non-residential	Uz\$/Mj	25.40	20.56	20.63	20.62	20.86	21.08	21.07	30.99	30.58	30.57	30.22	29.42	29.04
<b>Development Data</b>															
Electricity	Residential	Uz\$/kWh	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00	295.00
	Non-residential	Uz\$/kWh	566.09	450.00	450.00	450.00	450.00	450.00	629.57	625.96	631.81	651.90	649.31	643.83	637.68
Natural Gas	Residential	Uz\$/Mj	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18
	Non-residential	Uz\$/Mj	23.45	21.83	21.82	22.10	22.30	22.59	22.94	22.65	22.50	22.77	22.84	27.25	28.27

### 3. Energy consumption data for 2022

The electricity and natural gas end-user consumption data for 2022 was updated to the final official numbers. This is a crucial aspect of the model as it provides accurate information on energy consumption and usage patterns.

Energy consumption in ktoe			Annual 2022
<b>Official Data</b>			
Electricity	Electricity total final consumption	ktoe	4,872.1
	Residential	ktoe	1,436.7
	Nonresidential	ktoe	3,435.4
Natural Gas	Natural Gas total final consumption	ktoe	15,606.4
	Residential	ktoe	9,216.8
	Nonresidential	ktoe	6,389.6
<b>Development Data</b>			
Electricity	Electricity total final consumption	ktoe	4,732.4
	Residential	ktoe	1,287.1
	Nonresidential	ktoe	3,445.3
Natural Gas	Natural Gas total final consumption	ktoe	17,364.5
	Residential	ktoe	10,231.8
	Nonresidential	ktoe	7,132.7

For the details of the estimations please refer to the "iCRAFT\_UZB\_MRV" spreadsheet.

## Section 4. Parameters monitored to evaluate transformative change

Information monitored for 2022 is presented in absolute values, and will be used as baseline year for future verifications.

Indicator	Description	Reported unit	Responsible entity	2022	Source
Size of emission reductions	Amount of emission reductions achieved in the monitoring period	MtCO <sub>2e</sub>	MoEF <i>[PIU TCAF team]</i>	3.6	"iCRAFT_UZB_MRV" spreadsheet
<b>Sustainability</b>					
<b>Policy</b>					
New investments in renewable energy	Increase of installed capacity of renewable energy that year	MW installed capacity	MoE <i>[Renewable Energy Source unit]</i> MoEF <i>[Energy Policy Unit and PPP department]</i>	179.97 (100 solar + 79.97 hydro)	Samarkand Tytly Solar <sup>19</sup> Ministry of Energy (Minenergy), and Uzhydropower <sup>20</sup>
Improved social protection	Increased number of beneficiaries covered by the social protection project	Number of beneficiaries	MoEF <i>[State Budget Department]</i> , Ministry of Labour and Poverty Reduction	2022 baseline year [3,783,253 households]	Ministry of Economy in Finance. "Budget for Citizens: Approved Budget for 2023" <sup>21</sup>
Reduced fossil fuel subsidy	Reduction of government subsidy spending on the industrial and commercial segment (and households) of electricity and natural gas	Million USD/ percentage	MoEF <i>[Tariff Department]</i>	2022 baseline year [21,038 ]	IEA Fossil Fuel Subsidies Database <sup>22</sup>
<b>Technology</b>	Increased import of more energy efficiency appliances	Percentage / thousand USD	MoEF <i>[Foreign Trade Unit]</i>  L2CU survey	2022 baseline year  [277,257.8]	

<sup>19</sup> <https://minenergy.uz/ru/news/view/1957>

<sup>20</sup> 2024\_02 Consolidated Plant List .xlsx

<sup>21</sup> [https://api.mf.uz/media/document\\_files/Budjet\\_23\\_ru.pdf](https://api.mf.uz/media/document_files/Budjet_23_ru.pdf)

<sup>22</sup> <https://www.iea.org/data-and-statistics/data-product/fossil-fuel-subsidies-database> "4.4. Fossil fuel subsidies 2010-2022.xls"

Indicator	Description	Reported unit	Responsible entity	2022	Source
	Increased percentage of people in favour of tariff reforms and reducing consumption and paying higher tariffs in exchange of improved services (as part of Listening to Citizens of Uzbekistan (L2CU) survey).			[In favour Electricity: 16.3% Natural gas: 9.7%]	Green Statistics <sup>23</sup> Study - Listening to the Citizens of Uzbekistan <sup>24</sup>
<b>Financing</b>	Reduced spending on fossil fuel subsidy	Million USD/ percentage	MoEF [ <i>Tariff Department</i> ]	2022 baseline year [22,717 M\$]	IEA Fossil Fuel Subsidies Database
<b>Leverage</b>					
Increased PPP participation	Private sector financing leveraged in renewable energy technologies	Million USD	MoEF [ <i>PPP department</i> ]	2022 baseline year [2,401 M\$]	National database of legislation of the republic of Uzbekistan <sup>25</sup>
MRV system	Robust MRV system is being designed	Yes/No	PIU MRV team	Work in progress	Ministry of Energy and Finance / iCraft project
Article 6 National Authority	National Authority designated for Article of Paris Agreement	Yes/No	MoEF [ <i>Green Economy Department</i> ]	Yes	Presidential Decree #436 dated December 2, 2022 <sup>26</sup>
<b>Carbon pricing</b>					
Results-Based Climate Finance Emission Reduction	First ERPA for RBCF signed	Tonnes of VERs contracted	MoEF [ <i>Green Economy Department</i> ]	500,000 <sup>27</sup>	Ministry of Energy and Finance / TCAF ERPA

<sup>23</sup> <https://green.imv.uz/greenStatistics.pdf>. Under “Import of more energy efficiency appliances”. Reported as Percentage / US million 262 / 277.3.

<sup>24</sup> <https://www.worldbank.org/en/country/uzbekistan/brief/l2cu> (latest results provided to the audit team)

<sup>25</sup> <https://lex.uz/docs/6629454>; <https://lex.uz/docs/6629458>; <https://lex.uz/docs/6629462>

<sup>26</sup> <https://lex.uz/docs/6303233>

<sup>27</sup> Annual Amount of Contract VERs for Period January 1, 2022 – December 31, 2022.

Indicator	Description	Reported unit	Responsible entity	2022	Source
Payment Agreement (RBCF -ERPA)					
Mitigation Options Purchase Agreement for Internationally Transferred Mitigation Options (MOPA-ITMO)	First MOPA for ITMOs signed	Tonnes of ITMOs contracted	MoEF [ <i>Green Economy Department</i> ]	0 <sup>28</sup>	Ministry of Energy and Finance / TCAF MOPA

---

<sup>28</sup> First MOPA Period only starts on January 2024.



## Section 5. Parameters monitored to evaluate sustainable development co-benefits.

Information monitored for 2022 is presented in absolute values, and will be used as baseline year for future verifications.

SD co-benefit indicator	Description	Reported unit	Responsible entity	2022	References/Source
Social2					
New green jobs	New green jobs (directions/sectors listed in the green taxonomy) created	Number of jobs	MoEF [Green Economy Department, and Macroeconomy Department], MoE	2022 Baseline year [2,784,140]	Green Statistics <sup>29</sup>
Expanded access and equity of access to social safety nets	Social safety net expanded to reach more poor households	Number of households	MoEF [State Budget Department, and Green Economy Department], Ministry of Labour and Poverty Reduction	2022 Baseline year [2,083,948 households]	"Budget for Citizens: Approved Budget for 2023". <sup>30</sup>
Social acceptance of tariff reforms	Social acceptance of tariff reforms has changed compared to previous years	Percentage of people in favour or against as per Listening to citizens of Uzbekistan (L2CU) survey	MoEF [Green Economy Department]	2022 Baseline year In favour Electricity: 16.3% Natural gas: 9.7%	Study - Listening to the Citizens of Uzbekistan <sup>31</sup>
Reliability of energy services	Improved reliability of energy services due to more rationale use of electricity and gas and improved	Frequency and duration of power shortages and or customer complains/feedback	National Electricity Grid [Monitoring Unit]	2022 Baseline year Frequency: 671 Duration: Tot, 1904.5 h; avg. 4.6h Complaints: 645	Green Statistics <sup>32</sup>

<sup>29</sup> <https://green.imv.uz/greenStatistics.pdf>. Calculated based on ILO model  
[https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_153458.pdf](https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_153458.pdf)

<sup>30</sup> [https://api.mf.uz/media/document\\_files/Budjet\\_23\\_ru.pdf](https://api.mf.uz/media/document_files/Budjet_23_ru.pdf); lines 1 and 2 of page 26 for 2022

<sup>31</sup> <https://www.worldbank.org/en/country/uzbekistan/brief/l2cu> (latest results provided to the audit team)

<sup>32</sup> <https://green.imv.uz/greenStatistics.pdf>; 5.4 Reliability of energy services.xlsx

SD co-benefit indicator	Description	Reported unit	Responsible entity	2022	References/Source
	maintenance and infrastructure investment				
<b>Environmental</b>					
Improved air quality	Change in air pollutant due to reduced use of fossil fuels country wide	Levels of SO <sub>2</sub> , NO <sub>x</sub> , fly ash emissions, Suspended Particulate Matter (SPM), NMVOCs in the air	Ministry of Environment and Ecology [Uzhydromet] Uzbekistan Statistics Agency	2022 Baseline year SO <sub>2</sub> – 1730.029 kt NO <sub>x</sub> – 2688.397 kt NMVOC – 1288.359 kt	Green Statistics <sup>33</sup>
<b>Economic</b>					
New investments in renewable energy technologies	New investment channelled to deployment of renewable energy sources	Million USD	MoE [Renewable Energy Source unit] MoEF	2022 Baseline year [ 2,641]	National database of legislation of the republic of Uzbekistan <sup>34</sup>  MoEF <sup>35</sup>
Fiscal savings	Reduced spending on fossil fuel subsidy	Million USD/ percentage	MoE [unit name]	2022 baseline year [22,717 M\$]	IEA Fossil Fuel Subsidies Database <sup>36</sup>
<b>Institutional</b>					
Improved energy pricing policy	More ambitious tariff reforms adopted.	Tariff increase in percentage	PIU	2022 Baseline year  <b>Average Electricity tariff:</b> residential – 294.5 UZS/kWh non-residential: 539.5 UZS/kWh	Ministry of Energy <sup>37</sup>

<sup>33</sup> <https://green.imv.uz/greenStatistics.pdf>; 5.5 Air Quality.xls

<sup>34</sup> <https://lex.uz/docs/6629454>; <https://lex.uz/docs/6629458>; <https://lex.uz/docs/6629462> totalling 2.401M\$

<sup>35</sup> Calculated by MoEF from budget registries, State Owned Enterprise (SOE) reports, and private company project lists, totalling 240M\$.

<sup>36</sup> <https://www.iea.org/data-and-statistics/data-product/fossil-fuel-subsidies-database> “4.4. Fossil fuel subsidies 2010-2022.xls”

<sup>37</sup> in accordance with the letter of the Ministry of Energy dated October 30, 2023 No. 04-06-6592. Xat Minenergo.pdf

SD co-benefit indicator	Description	Reported unit	Responsible entity	2022	References/Source
				<b>Average Natural Gas tariff:</b> residential: 380 UZS/m3 non-residential: 871.6 UZS/m3	
Enhanced international cooperation	International cooperation agreements signed on low carbon economy growth	Number of agreements	MoEF Green Economy Department	3	Japan - Uzbekistan MoU (October 25, 2022) <sup>38</sup> EBRD Agreement (July 11, 2022) <sup>39</sup> GIZ-GGGI MoU (March 18, 2022) <sup>40</sup>

<sup>38</sup> <https://www.jcm.go.jp/uz-jp/information/469>

<sup>39</sup> <https://www.ebrd.com/work-with-us/projects/tcpsd/16401.html>

<sup>40</sup> <https://gggi.org/press-release/memorandum-of-understanding-mou-on-green-growth-and-climate-change-cooperation-relevant-to-the-aral-sea-basin-in-uzbekistan-between-gggi-and-giz/>

## Section 6. Environmental and social reporting indicators.

Actions	Description	Reported unit	Responsible entity	[2022]
Social Specialist in place	Appoint and maintain a social specialist in the PIU for managing the planned communication campaign, and broader stakeholder engagement including a feedback mechanism.	Yes/No ToRs	PIU	No
Communication Strategy developed and implemented	financing a communication campaign to inform the public and address stakeholders' views on proposed reforms.	Financed: Yes/No Developed: Yes/No Types of materials developed, and campaigns undertaken, results of satisfaction and perceptions surveys	PIU	No
Operationalisation of feedback and redress grievance mechanism (FGRM)	Establish, publicize, maintain, and operate an accessible feedback and grievance mechanism, to receive and facilitate resolution of concerns and grievances in relation to the Project,	When established, how publicised, Cumulative and for reporting period: records of feedback and grievances, types, how many resolved, how many outstanding.	PIU	No
Worker Grievance Mechanism	Ensure worker grievance is available for workers in to allow them to quickly inform management of labour related issues and raise workplace concerns and labour-related matters without fear of retaliation or favour.	Mechanism in place: Yes/no Communicated to Workers- Cumulative and Reporting Period  Cumulative and for reporting period: records of grievances, types, how many resolved, how many outstanding.	PIU	Mechanism in place: No
Stakeholder Engagement Plan Revised	SEP will be regularly revised to include updated information on FGRM and details of the communications strategy including campaigns as well as messaging on social safety nets and who would be legible for any benefits.	Yes/No When revised and why Disclosed – Yes/No	PIU	No
Incidents and accidents	incident or accident related to the Project which has, or is likely to have, a significant adverse effect on environment or people, including any complaints and protests against tariff reforms	scope, severity, and possible causes of the incident or accident, indicating immediate measures taken	PIU	No incidents or accidents
Training of PIU staff	- stakeholder mapping and engagement including on FGRM. - community health and safety.	Cumulative and for reporting period: training completed	PIU	No training

## Section 7. Financial reporting

Not applicable for the first monitoring period since no payments have been done yet.

## Section 8. Other Relevant Information

Not applicable for this report.

-----

### Document Information

Version	Date	Description
1.1	2024_02_28	Format Corrections Updates to Section 4 parameters table Updates to Section 5 parameters table Updated description for Section 8 Updates to section 2 description of monitoring system
1.0	2023_11_09	Initial Adoption