

Demand-driven digital smart grids

Review PIF and Make a recommendation

Basic project information

GEF ID
12100
Countries
Kazakhstan
Project Name
Demand-driven digital smart grids
Agencies
UNDP
Date received by PM
10/14/2025
Review completed by PM

Program Manager
Wenxin Li
Focal Area
Climate Change
Project Type
MSP

GEF-8 PROJECT IDENTIFICATION FORM (PIF) REVIEW SHEET

1. General Project Information / Eligibility

- a) Does the project meet the criteria for eligibility for GEF funding?
- b) Is the General Project Information table correctly populated?

Secretariat's Comments WL 11/2025: yes.

Agency's Comments

2. Project Summary

Does the project summary concisely describe the problem to be addressed, the project objective and the strategies to deliver the GEBs or adaptation benefits and other key expected results?

Secretariat's Comments WL 11/2025: yes.

Agency's Comments

3 Indicative Project Overview

3.1 a) Is the project objective presented as a concise statement and clear?

b) Are the components, outcomes and outputs sound, appropriate and sufficiently clear to achieve the project objective and the core indicators per the stated Theory of Change?

Secretariat's Comments

WL 11/2025: cleared.

Agency's Comments

3.2 Are gender dimensions, knowledge management, and monitoring and evaluation included within the project components and appropriately funded?

Secretariat's Comments

OP 11/2025:

The preliminary Gender Action Plan presents the gender dimensions by project component. Per GEF requirement, please reflect the gender equality considerations in the PIF Project Description (in all components, not just M&E).

Under M&E, please include lessons learned and best practices on advancing gender equality and women's empowerment in KM products produced (not only ensuring women's participation in promotional events). Mid-term Review and Terminal Evaluation should also report on the implementation of gender-specific results, including the implementation of the Gender Action Plan (not only ensuring gender balance in the evaluation team).

M&E budget at 6.0% of the project budget before PMC is higher than the recommended threshold of 5% for projects of similar size. Please consider reducing.

Agency's Comments

UNDP 30/01/2026: The PIF component description has been further elaborated to capture the gender mainstreaming angle in line with the GAP. (The changes made are concurrent to other changes made in response to your comment 5.1a) and 5.1.b) (theory of change).) Lessons learned and best practices on advancing gender equality and women's empowerment in KM products produced are now explicitly referenced under M&E description. Evaluations will also report on the implementation of gender specific results and GAP.

The M&E budget has been lowered to US\$100,000 by reallocating US\$5,000 to Component 2 (now: US\$455,000).

3.3 a) Are the components adequately funded?

b) Are the GEF Project Financing and Co-Financing contributions to PMC proportional?

c) Is the PMC equal to or below 5% of the total GEF grant for FSPs or 10% for MSPs? If the requested PMC is above the caps, has an exception (e.g. for regional projects) been sufficiently substantiated?

Secretariat's Comments WL 11/2025: yes.

Agency's Comments

4 Project Outline

A. Project Rationale

4.1 SITUATION ANALYSIS

a) is the current situation (including global environmental problems, key contextual drivers of environmental degradation, climate vulnerability) clearly and adequately described from a systems perspective?

b) Are the key barriers and enablers identified?

Secretariat's Comments WL 11/2025: yes.

Agency's Comments

4.2 JUSTIFICATION FOR PROJECT

a) Is there an indication of why the project approach has been selected over other potential options?

b) Does it ensure resilience to future changes in the drivers?

c) Is there a description of how the GEF alternative will build on ongoing/previous investments (GEF and non-GEF), lessons and experiences in the country/region?

d) are the relevant stakeholders and their roles adequately described?

Secretariat's Comments OP11/2025: The project states as a potential risk ?challenges to identify and engage CSO? and please further elaborate on planned measures to engage and consult relevant CSOs and Academia and provide more information on the beneficiaries of this project, including plans to consult these in project development.

Agency's Comments

UNDP 30/01/2026: UNDP will develop and communicate a stakeholder engagement plan during the PPG phase (see brief summary of consultations for context on the engagement of CSOs and academia). The proposed approach for stakeholder engagement, and filling current gaps, has been now included in the PIF, which includes seeking a structured approach in widening circles including CSOs, electricity end users, women groups and academia (such as the Kazakh National Technical University, The L.N. Gumilyov Eurasian National University, the Kazakh British Technical University.

5 B. Project Description

5.1 THEORY OF CHANGE

a) Is there a concise theory of change that describes the project logic, including how the project design elements will contribute to the objective, the expected causal pathways, and the key assumptions underlying these?

b) Are the key outputs of each component defined (where possible)?

Secretariat's Comments

WL 3/2026: cleared.

WL 11/2025:

1. Where possible, please clearly identify or describe the likely (to be refined during PPG) outputs for the each component, e.g. how many and which new or revised regulations, how many and what incentive mechanisms, how many and what business models, level of improvement targeted for pilot. If not for PIF, please develop the specifics during PPG.
2. Please clarify any dependency among the components. In addition for Component 1/3: please clarify if the technology deployment and proof of concept in component 3 depends on the adoption of regulatory amendment to be mapped in Component 1. If so, how to ensure the implementation of component 3 while Component 1 presents the roadmap and timeline for adoption?
3. Please include and describe the development of institutionalization and replication/scaling-up plan for the pilots.
4. Please clarify any activity for the private sector engagement and financing mobilization.

Agency's Comments

UNDP 30/01/2026:

1. Indicative results (targets) have been added to the listed outputs for each component as a basis for further review and detailing during the PPG phase, and for developing the M&E plan at output level as part of the Project Document.
2. The project has been structured to minimize interdependencies that could negatively affect the implementation of activities across the various components. Assuming sufficient political endorsement? a key underlying assumption? Components 1 and 2 can be initiated in parallel, given that their respective domains and stakeholder groups are largely distinct. Regarding the relationship between Components 1 and 3, the following approach has been adopted: Progress under Component 1 is influenced by political and regulatory factors outside the project's direct control. It is possible that a fully enabling regulatory framework may not be in place by project completion. In such a scenario, KEGOC and utilities may be unable or unwilling to advance a DSM pilot within their service areas. To address this, Component 3 has been designed so that most activities can proceed independently of regulatory developments. This consideration also informed the decision to include an initial 'digital twinning' proof-of-concept. Under this approach, only Output 3.2.5 would remain directly dependent on progress under Component 1. As an interim solution, the government could issue a decree establishing a 'technical pilot area' to allow implementation of the physical smart-grid pilot; however, such a pilot would be unlikely to attract non-government financing. Limited progress under Component 1 may also affect the level of detail achievable in the legal dimension of the business plan under Outcome 3.1 and may reduce stakeholder confidence in the DSM business model. Conversely, early achievements under Component 3 may help accelerate policy and

regulatory developments by demonstrating the practical feasibility of DSM smart-grid solutions in Kazakhstan. In summary, while some interdependence between Components 1 and 3 remains, it has been reduced as much as practicable through the project's design.

3. Institutionalization has been taken into account while designing the PIF concept. At PIF stage, the formal ownership of the "digital twin" is assumed to rest with KEGOC in partnership with the host technology institute, on behalf of the Ministry of Energy. Institutionalization is foreseen by embedding in the curricula of the technology institute and the use of the digital simulation environment for technical training of KEGOC, utility experts and other interested entities. Financial sustainability is envisioned through institutional budgets and service fees for training and research. The physical pilot will become part of the corresponding utility assets, on behalf of the government. Scaling-up of the pilot will be guided by the envisioned regional and national road maps (outputs 1.1.4 and 2.1.5).

4. Please refer to the updated narrative on the financial mechanism (Output 3.1.1) and the proposed roadmap (Output 1.1.4). Reference is made to the description of Scenario 2 which will "include an articulated financial mechanism that will both push and incentivize the transition to DSM". This description mentions several options including tariff support, loan guarantees, and green loans/bonds. UNDP's Derisking Framework (DREI) is designed to guide the identification and ranking of financial (risk mitigation) measures and incentives. The PIF also mentions the Green Economy Financing Facility (GEFF). A direct incentive towards financial feasibility of DSM smart-grids is the introduction of cost-reflective tariffs, which make energy conservation and peak-shaving attractive for the consumer. At this stage, it is unclear, yet which other mechanisms can be introduced and how private capital can be mobilized.

Among other options, larger industries may seek joint-ventures with electricity companies to upgrade infrastructure and incorporate DSM smart-grid functionality, as part of programs towards energy conservation and resource efficiency. Where combined heat and power are required, system operation may be outsourced or managed under an energy service contract (ESCO).

As far as regional utilities are concerned, financing needs for smart grids may be streamlined with T&D investment through dedicated investment funds open to public and private investors. Access to such funding will rely on legal provisions allowing electric utilities to do so. As most regional electricity companies have weak balance sheets due to depreciated assets and weak cash flows, creditworthiness may need to be strengthened by restructuring in combination with sovereign guarantees.

Finally, small-scale DSM smart-grids (e.g. at neighborhood level) may require modest investment and may become feasible if one large consumer (anchor tenant) exists. In combination with distributed RE generation and battery storage capacity, such system may create revenues through sales contracts to the utility, secure electricity supply in the area, and optimize energy utilization within the smart-grid system. This latter model can benefit from the concepts for energy community as proposed under European directives (see for example: <https://www.rescoop.eu/toolbox/second-generation-eu-legislation-for-energy-communities>).

As it is uncertain what mechanisms could work in Kazakhstan, we have not explored private sector funding in more detail in the PIF as this may lead to false interpretations or expectations of the project. We propose to explore this line of action further during the PPG and/or during project implementation.

5.2 INCREMENTAL/ADDITIONAL COST REASONING

Is the incremental/additional cost reasoning properly described as per the Guidelines provided in GEF/C.31/12?

Secretariat's Comments WL 11/2025: cleared

Agency's Comments

5.3 IMPLEMENTATION FRAMEWORK

a) Is the institutional setting, including potential executing partners, outlined and a rationale provided?

b) Comments to proposed agency execution support (if agency expects to request exception).

c) Is there a description of potential coordination and cooperation with ongoing GEF-financed projects/programs and other bilateral/multilateral initiatives in the project area

d) Are the proposed elements to capture and disseminate knowledge and learning outputs and strategic communication adequately described?

Secretariat's Comments

WL 3/2026: cleared

WL 11/2025:

GEF policies, further explained in the Guidelines on Project and Program Cycle, require that the separation of implementation functions performed by GEF Agencies and execution functions performed by Project Executing Entities is a key feature of the governance of the GEF Partnership and an important aspect of the GEF Minimum Fiduciary Standards.?

See

https://www.thegef.org/sites/default/files/documents/GEF_Guidelines_Project_Program_Cycle_Policy_20200731.pdf. (pages 44-45)

At PIF stage, Agency (?dual?) execution should not be included in the Agency's proposal. Once the Agency has sufficiently progressed in project preparation and if it anticipates a need for Agency execution, the Agency would submit full information and justification for a request for policy exception.

Agency's Comments

UNDP 30/01/2026: This is noted. The project design will be guided by the GEF policy on dual execution, as applicable.

5.4 a) Are the identified core indicators calculated using the methodology included in the corresponding Guidelines (GEF/C.54/11/Rev.01)?

b) Are the project's indicative targeted contributions to GEBs (measured through core indicators)/adaptation benefits reasonable and achievable?

Secretariat's Comments

WL 3/2026: cleared.

WL 11/2025: Please provide the calculations of CI6 in the format of Excel file with embedded formulas and references for inputs and assumptions. Please note the time period of GHG calculations should use the technical lifetime of the equipment.

Agency's Comments UNDP 30/01/2026: Please refer to excel titled ?10318_UNDP_KZ_Smart Grids_PIF_GHG Calculations_30 Jan 2026?.

5.5 NGI Only: Is there a justification of financial structure and use of financial instrument with concessionality levels?

Secretariat's Comments N/A

Agency's Comments

5.6 RISKS

a) Is there a well-articulated assessment of risk and identification of mitigation measures under each relevant risk category?

b) Is the rating provided reflecting the residual risk to the likely achievement of intended outcomes after accounting for the expected implementation of mitigation measures?

c) Are environmental and social risks, impacts and management measures adequately screened and rated at this stage and consistent with requirements set out in SD/PL/03?

Secretariat's Comments WL 11/2025: cleared.

Agency's Comments

5.7 Qualitative assessment

a) Does the project intend to be well integrated, durable, and transformative?

b) Is there potential for innovation and scaling-up?

c) Will the project contribute to an improved alignment of national policies (policy coherence)?

Secretariat's Comments

WL 3/2026: cleared.

WL 11/2025: please earlier comment on scaling up.

Agency's Comments UNDP 30/01/2026: Please refer to earlier response.

6 C. Alignment with GEF-8 Programming Strategies and Country/Regional Priorities

6.1 Is the project adequately aligned with focal area and integrated program strategies and objectives, and/or adaptation priorities?

Secretariat's Comments WL 11/2025: cleared.

Agency's Comments

6.2 Is the project alignment/coherent with country and regional priorities, policies, strategies and plans (including those related to the MEAs and to relevant sectors)

Secretariat's Comments WL 11/2025: cleared.

Agency's Comments

6.3 For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e. BD, CC or LD), does the project clearly identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and how it contributes to the identified target(s)?

Secretariat's CommentsN/A

Agency's Comments

7 D. Policy Requirements

7.1 Is the Policy Requirements section completed?

Secretariat's CommentsWL 11/2025: cleared.

Agency's Comments

7.2 Is a list of stakeholders consulted during PIF development, including dates of these consultations, provided?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

8 Annexes

Annex A: Financing Tables

8.1 Is the proposed GEF financing (including the Agency fee) in line with GEF policies and guidelines? Are they within the resources available from (mark all that apply):

STAR allocation?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

Focal Area allocation?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

LDCF under the principle of equitable access?

Secretariat's CommentsNA

Agency's Comments

SCCF A (SIDS)?

Secretariat's CommentsNA

Agency's Comments

SCCF B (Tech Transfer, Innovation, Private Sector)?

Secretariat's CommentsNA

Agency's Comments

Focal Area Set Aside?

Secretariat's CommentsNA

Agency's Comments

8.2 Is the PPG requested within the allowable cap (per size of project)? If requested, has an exception (e.g. for regional projects) been sufficiently substantiated?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

8.3 Are the indicative expected amounts, sources and types of co-financing adequately documented and consistent with the requirements of the Co-Financing Policy and Guidelines?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

Annex B: Endorsements

8.4 Has the project been endorsed by the country? (ies) GEF OFP and has the OFP at the time of PIF submission name and position been checked against the GEF database?

Secretariat's CommentsWL 11/2025: see comments below on LOE.

Agency's CommentsUNDP 30/01/2026: Please refer to the revised Letter of Endorsement.

Are the OFP endorsement letters uploaded to the GEF Portal (compiled as a single document, if applicable)?

Secretariat's Comments WL 11/2025: Yes.

Agency's Comments

Do the letters follow the correct format and are the endorsed amounts consistent with the amounts included in the Portal?

Secretariat's Comments

OP 11/2025:

1. It is signed by the Political Focal Point (Minister Yerlan Nyssanbayev) but must be signed by the Operational Focal Point (Mrs. Saule Sabiyeva) - a new Letter of Endorsement signed by the OFP is required.
2. It included the Ministry of Ecology and Natural Resources as one of the executing partners, but this institution is not included in portal. Similarly, the section where it is expected to delineate the executing arrangements does not make any reference to the two Ministries that were selected as executing partners: only describes the potential dual implementation / execution role by UNDP. Please amend.
3. It included CC-Set Aside as the Focal Area, but it must be CC- STAR allocation - please correct this in the new LoE.

WL 11/2025: the funding referenced in the LOE should be consistent with the amounts and categories below:

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
UNDP	GET	Kazakhstan	Climate Change	CC STAR Allocation	2,402,184.00
UNDP	GET	Kazakhstan	Land Degradation	LD STAR Allocation	99,999.50
UNDP	GET	Kazakhstan	Biodiversity	BD STAR Allocation	0.50
Total GEF Resources(\$)					2,502,184.00

Agency's Comments

UNDP 30/01/2026: Please refer to the revised Letter of Endorsement.

8.5 For NGI projects (which may not require LoEs), has the Agency informed the OFP(s) of the project to be submitted?

Secretariat's Comments N/A

Agency's Comments

Annex C: Project Location

8.6 Is there preliminary georeferenced information and a map of the project's intended location?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

Annex D: Safeguards Screen and Rating

8.7 If there are safeguard screening documents or other ESS documents prepared, have these been uploaded to the GEF Portal?

Secretariat's CommentsWL 11/2025: Yes

Agency's Comments

Annex E: Rio Markers

8.8 Are the Rio Markers for CCM, CCA, BD and LD correctly selected, if applicable?

Secretariat's CommentsWL 11/2025: Yes.

Agency's Comments

Annex F: Taxonomy Worksheet

8.9 Is the project properly tagged with the appropriate keywords?

Secretariat's CommentsWL 11/2025: Yes

Agency's Comments

Annex G: NGI Relevant Annexes

8.10 Does the project provide sufficient detail (indicative term sheet) to take a decision on the following selection criteria: co-financing ratios, financial terms and conditions, and financial additionality? If not, please provide comments. Does the project provide a detailed reflow table to assess the project capacity of generating reflows? If not, please provide comments. Is the Partner Agency eligible to administer concessional finance? If not, please provide comments.

Secretariat's CommentsN/A

Agency's Comments

9 GEFSEC Decision

9.1 Is the PIF and PPG (if requested) recommended for technical clearance?

Secretariat's CommentsWL 11/2025: not yet. Please address all comments.

Agency's Comments

9.2 Additional Comments to be considered by the Agency at the time of CEO Endorsement/ Approval

Secretariat's CommentsOP 11/2025: Please ensure that in the development of the results framework, gender-specific indicators are included to facilitate monitoring and reporting. In the development of the Gender Action Plan, please indicate measures to facilitate and support its implementation (e.g., budgets, regular monitoring, adaptive management, etc.)

Agency's Comments

UNDP 30/01/2026: Noted. This will be considered during PPG phase.

Review Dates

	PIF Review	Agency Response
First Review	11/14/2025	1/30/2026
Additional Review (as necessary)	3/6/2026	
Additional Review (as necessary)		
Additional Review (as necessary)		
Additional Review (as necessary)		