FP028

MSME Business Loan Program for GHG Emission Reduction

Mongolia

April 2026

Final Evaluation Report

This report presents the Final Evaluation of the Green Climate Fund (GCF)-funded project “MSME Business Loan Program for GHG Emission Reduction”. The evaluation was independently commissioned by the Accredited Entity (AE), XacBank, and submitted to GCF. GCF assumes no responsibility for the accuracy of the information in this report.



Final Independent Evaluation of Green Climate Fund (GCF)-funded Activity "FP028: MSME Business Loan Programme for GHG Emission Reduction"

REVISED FINAL REPORT – v04

Revised following GCF Secretariat review comments dated 13 April 2026

Submitted to: XacBank LLC

Prepared by: BlackRock Partners LLC

Ulaanbaatar, Mongolia

May 2026

Table of Content

Table of Content 2
Abbreviation and acronyms 4
Report Note for v04 5
Summary 6
Programme Overview 6
Summary of Findings 6
Conclusion Summary 7
Introduction 7
Program introduction 7
Loan Program 7
Technical Assistance Facility (Grant) 9
Gender Action Plan 9
Intervention Logic and Theory of Change 9
Evaluation methodology 11
Evaluation criteria 11
Data Sources 11
Sampling Approach 12
Data Collection Methods 12
Data Analysis 12
Limitations 13
Ethical Considerations 13
Evaluation Governance, Quality Assurance and Evidence Robustness 14
Stakeholder roles and independence 14
Quality assurance process 14
Objectivity and bias mitigation 14
Methodological justification and triangulation 14
Gender equity and inclusive participation 15
Limitations and mitigation measures 15
Evaluation findings 16
Relevance 16
Effectiveness 18
Outcomes 18
Outputs 21
Efficiency 23

Coherence 24
Gender equity 25
Loan Programme 25
Gender Action Plan 27
Country ownership 29
Innovation 30
Replication & scalability 30
Unexpected results 32
Impact, Sustainability and Evidence Traceability 32
Evidence basis for key findings 33
Conclusion 34
Lessons Learned 35
Recommendations ..... Error! Bookmark not defined.
Actionable Recommendation Matrix ..... Error! Bookmark not defined.
Dissemination, Knowledge Management and Use of Evaluation Findings ..... Error! Bookmark not defined.
Annex A. Evaluation TOR ..... Error! Bookmark not defined.
Annex B. Evaluation Matrix ..... Error! Bookmark not defined.
Annex C. Results Monitoring Framework ..... Error! Bookmark not defined.
Annex D. List of Documents ..... Error! Bookmark not defined.
Annex E. List of Interviewees - Borrowers ..... Error! Bookmark not defined.
Annex F. Interim Evaluation Recommendation Implementation ..... Error! Bookmark not defined.
Annex G. Review Matrix ..... Error! Bookmark not defined.
Annex H. GCF Review Response Matrix ..... Error! Bookmark not defined.

Abbreviation and acronyms

ADB	Asian Development Bank
APR	Annual Performance report
ECM	Energy conservation measure
FAA	Funded Activity Agreement
FP	Funding proposal
GCF	Green Climate Fund
M&E	Monitoring and Evaluation
MSME	Micro, small, medium enterprises
NDC	Nationally Determined Contribution
OECD	Organization for Economic Co-operation and Development
UNDP	United Nations Development Programme
UB	Ulaanbaatar
tCO_2e	tones carbon dioxide equivalent

Report Note for v04

This revised v04 report preserves the structure, evidence, figures, tables, findings and annexes of the December 2025 v03 report to the greatest extent possible. Revisions are limited to targeted additions responding to the GCF Secretariat review comments dated 13 April 2026.

The evaluator's independent analysis, findings, conclusions, and recommendations are preserved. See Annex H. GCF Review Response Matrix.

Date submitted	Report versions submitted	Reviewed by	Review date	Note
Dec 9, 2025	*Draft v01*	*AE*	*Dec 9, 2025*	*Comments incorporated*
Dec 10, 2025	*Report v02*	*AE*	*Dec 11, 2025*	*Comments incorporated*
Dec 12, 2025	*Report v03*			

Note: See Review Matrix

Summary

Programme Overview

The FP028 “Mongolia: Business Loan Programme for GHG Emissions Reduction” (Programme) was implemented by XacBank (Accredited Entity or AE) with financing from the Green Climate Fund (GCF). The program aimed to improve access to green and inclusive finance for micro, small, and medium enterprises (MSMEs) across Mongolia, particularly rural and women-led businesses to support climate-resilient, low-carbon economic growth.

By providing concessional loans, capacity-building, and awareness-raising, FP028 sought to:

- Expand green financial products for MSMEs,
- Foster gender equality in business finance,
- Promote climate-smart and environmentally sustainable business models, and
- Strengthen Mongolia’s transition toward a low-emission development pathway in line with national priorities, including the Nationally Determined Contributions (NDCs), the Green Development Policy, and the Sustainable Finance Roadmap.

The Green Climate Fund (GCF) approved a grant to support the implementation of the Programme through a dedicated Technical Assistance (TA) Facility. The grant was designed to strengthen the enabling environment for MSMEs to adopt energy-efficient (EE) and renewable-energy (RE) technologies, reduce greenhouse gas emissions, and improve bankability of green investments. Grant created essential market infrastructure, capacity building, technology validation, and monitoring systems, that enabled MSMEs to effectively access and benefit from the FP028 financing facility. Since June 8, 2017 a total of 154 MSME loans were disbursed under the program as of June 9, 2025, Funded Activity completion date.

Summary of Findings

- Training of loan officers surpassed expectations by more than fivefold, reflecting exceptional institutional engagement and readiness to scale eco-products.
- Marketing events and case study dissemination achieved or exceeded targets, with MSME outreach more than doubling expectations. However, verification gaps in digital engagement and loan inquiries highlight the need for strengthened data tracking systems.
- The programme significantly overachieved its GHG reduction targets across both mitigation result areas. Under M1.0, which measures emissions reductions from low-emission energy access and power generation, the programme achieved 768,775 tCO_2e in lifetime reductions—146% of the target. Similarly, under M3.0, which captures reductions from buildings, industries, and appliances, lifetime savings reached 1,093,453 tCO_2e, representing 163% of the target. Combined, the programme delivered a total of 1.86 million tCO_2e in avoided emissions, achieving 156% of the aggregate mitigation target.
- The sector’s growth is evident: green loans accounted for 428.1 billion MNT (2.5% of total lending) in 2020, rising to 875.3 billion MNT (3.0%) by Q1 2024, with projections of 6% by 2026 and 10% by 2030. This trajectory underscores strong scalability potential. Interview evidence confirms that XacBank continues to provide MSME green loans beyond the Programme, maintaining gender considerations and requiring minimum energy-efficiency improvements. However, without concessional GCF support, interest rates have risen (16.2–18% vs. ≤15% under the Programme), loan sizes remain modest, although GHG reductions are still monitored by AE.

The program has outperformed in financial and institutional dimensions, achieved strong awareness outcomes, and delivered credible climate mitigation impacts, though with some shortfalls in renewable energy access and verification of certain indicators. These results reinforce the program's strategic relevance, effectiveness, and potential for scale-up, while also pointing to areas for improvement in data validation, baseline setting, and conversion of awareness into sustained behavioral change.

Conclusion Summary

Although the Programme is formally concluded, the model it introduced has proven both replicable and highly scalable within Mongolia's financial sector. By demonstrating a successful blended-finance approach, combining concessional GCF capital with commercial bank resources to provide longer tenors and lower interest rates for EE and RE investments the Programme established a blueprint which is now being adopted by other Mongolian banks.

Introduction

Program introduction

The "Business Loan Program for GHG Emission Reduction" was designed to address one of Mongolia's most persistent barriers to low-carbon investment: the high cost of capital and the limited availability of long-term financing for green technologies. Through this program, AE received dedicated GCF resources to expand its capacity to provide affordable loans to MSMEs investing in energy efficiency and renewable energy solutions.

The Programme is a USD 60 million blended financing initiative designed to promote energy-efficient and renewable-energy investments that contribute to Mongolia's NDC targets. Of this amount, the Green Climate Fund (GCF) provides USD 20 million (USD 19.5 million in concessional loans and USD 500,000 in grant funding). The GCF contribution enables AE to extend more favorable lending terms—such as longer loan tenors and reduced interest rates by blending GCF resources with its existing EE and RE financing instruments, including the EBRD MONSEFF program and the GCPF GHG Emission Reduction Facility.

The program became effective in 2017 and was implemented over an extended timeline of eight years (five years with an extension of three years), allowing XacBank sufficient time to build a green portfolio, strengthen internal capacities, and demonstrate the viability of low-carbon lending in Mongolia's private sector.

The GCF funding channeled through AE represents approximately 16% of the total GCF resources provided to Mongolia. This indicates that while AE is a significant national partner for GCF-supported climate finance, the majority of Mongolia's GCF portfolio (around 84%) is implemented through other accredited entities and national programs. Programme sits at the heart of the mitigation / private-sector slice of GCF finance in Mongolia.

Aligned with the GCF's commitment to gender-responsive climate finance, the program earmarks at least 50% of its financial support for women-led MSMEs, helping to address structural inequalities in access to finance.

Loan Program

To date, the program has financed 154 GCF-supported business loans, representing a current loan value of USD 21.3 million. These financial products enable Mongolian enterprises to transition toward enduring, low-carbon business practices, reducing both energy consumption and GHG emissions

while easing the pressure created by traditionally high interest rates and short loan tenors in the local market.

Table 1. GCF investment disbursement, disaggregation

Year	Rural	Women-led	Loans	Loan Amount (USD)	CO2 emission savings per year (tCO2e)	Total emissions savings over project lifetime(tCO2e)	kWh savings per year
2017	1	6	10	391,517.97	915.89	13,352.69	1,466,271.00
2018	13	32	63	9,668,131.34	36,877.34	535,379.25	30,286,868.34
2019	3	9	18	4,733,152.30	11,156.75	110,222.11	16,410,114.00
2020	12	15	20	1,520,662.72	1,404.32	21,950.15	3,165,048.50
2021	12	13	21	2,044,267.14	11,211.29	234,879.45	30,012,338.00
2022	2	2	3	184,027.43	271.18	6,545.77	629,513.04
2023	3	3	14	2,681,682.95	8,040.72	105,947.88	18,574,346.79
2024	4	3	5	168,086.67	162.16	3,328.88	162,156.58
	50	**83**	**154**	**21,391,528.51**	**70,039.64**	**1,031,606.18**	**100,706,656.25**

The loan portfolio demonstrates a strong rural engagement, yet remains concentrated among non-rural clients. Analysis of the MSME loan portfolio (n=154) indicates that approximately 61% of loans were issued to non-rural clients, while 39% were to rural borrowers. This distribution reflects AE's active outreach through GCF Grant program (2017-2025) to rural enterprises but also highlights the dominance of urban and peri-urban clients in the current financing structure. In the context of Programme's objectives to promote inclusive low-carbon growth, this suggests that while rural access is being addressed, there remains an opportunity to further expand outreach and tailor products to herders and rural agribusinesses, who are critical to climate adaptation and resilience goals.

Table 2. Summary of MSME Borrowers Disaggregation

Disaggregation	Sub-disaggregation	Number of Loans	%
Gender	Women-led	83	54%
	Men-led	71	46%
Location	Rural	50	32%
	Urban	104	68%
Loan Status	Active	22	14%
	Closed	132	86%
Category (M-Series)	M1	59	38%
	M3	95	62%

Note: Figures are derived from the MSME loan dataset (n=154).

Of the 154 loans, 22 are still active (14%), suggesting strong completion and limited default risk. Closed loans (n=132, 86%) largely indicate completed repayment cycles, showing satisfactory loan performance. Portfolio performance also indicates high retention and success rates.

More than half of the loans (n=95, 62%) is under the M3 category, reflecting larger, more capital-intensive investments. However, 64% of total rural loans under M1 mirrors the early-stage growth of many MSMEs in Mongolia and aligns with national strategies to enhance access to finance for smaller rural businesses (n=32 under M1).

The disaggregated analysis highlights that the Programme effectively supported gender-balanced, geographically diverse, and sectoral alignment with solid performance indicators. The program's design, focusing on both inclusivity and sustainability, appears well-aligned with Mongolia's Green Development Policy and Sustainable Finance Roadmap.

Overall, the disaggregated loan portfolio provides a clear picture of AE's MSME lending under the Programme: inclusive, largely urban and mid-scale, and stable in performance. The gender and rural participation rates (32% and 54% accordingly) indicate successful progress toward equitable access. GCF Grant Programme contributed to strengthening loan product innovation and rural outreach enhancing both inclusiveness and transformational potential of FP028 financing in alignment with Mongolia's low-carbon development and sustainable finance priorities.

Technical Assistance Facility (Grant)

The Green Climate Fund (GCF) provided a grant of USD 500,000, effective from June 2017, dedicated exclusively to financing the Technical Assistance activities under the Programme. Budget reallocation request in 2021 was approved in 2022.

The Grant activities are structured around four components:

Component 1: Building capacity of end-beneficiaries to expand the pool of SMEs aware of the Facility, strengthen their ability to develop eligible EE/RE projects, and improve their financial and technical capacity to access loans.

Component 2: Preparing list of eligible EE/RE technologies to standardize eligible technologies, reduce appraisal time, and ensure that EE/RE solutions funded by the Facility meet high-quality performance and emission-reduction standards.

Component 3: Improving monitoring & evaluation (M&E) to build an M&E system that tracks energy savings, GHG reductions, and loan performance; decentralize monitoring responsibilities to SMEs; and strengthen internal monitoring capacity.

Component 4: Reducing technical risk for end-beneficiaries to assess whether an Energy Savings Insurance (ESI) or an alternative mechanism can reduce technical performance risk for SMEs adopting new EE/RE technologies.

Gender Action Plan

The Gender Action Plan sets clear parity targets, aiming for women-led MSMEs to make up at least 50% of loan clients, inquiries, and capacity-building participants, supported by sex-disaggregated data tracking, gender-responsive outreach, and representation of women in advisory roles. The Program defined MSMEs as women-led if one of the three criteria below was achieved:

1. Greater than 50% female ownership;
2. At least 30% women on company board or in senior management positions;
3. At least 40% of employees are women.

The GAP activities are structured around four outputs:

Output 1: 50% of loan clients are women-led MSMEs

Output 2: Equal interest from male and female led MSMEs in participating in the program

Output 3: Ensure that local businesses' capacity building regarding climate financing is equally shared between genders

Output 4: Knowledge management products that emphasize equal access for women and men to climate finance programs to be prepared and disseminated

Intervention Logic and Theory of Change

This subsection clarifies the intervention design, logical framework, and Theory of Change, without changing the evaluator's original findings.

FP028 was designed on the basis that Mongolian MSMEs face financial, technical and informational barriers to adopting energy efficiency and renewable energy technologies. These barriers include high upfront investment costs, limited access to longer-term affordable finance, limited awareness of technology options, uncertainty about technology performance and limited institutional experience in appraising and monitoring green investments.

The Programme logic was that GCF concessional finance, blended with XacBank's lending operations and supported by the Technical Assistance Facility and Gender Action Plan, would reduce these barriers. More affordable loans and technical support were expected to increase MSME investments in eligible EE/RE technologies, resulting in energy savings, avoided GHG emissions, strengthened green lending capacity and improved access to climate finance for women-led MSMEs.

Results level	Intervention logic
Inputs	GCF concessional loan resources; GCF grant resources; XacBank lending infrastructure; technical expertise; borrower outreach; gender-responsive targets; monitoring systems.
Activities	MSME loan disbursement; loan officer training; MSME awareness events; eligible technology identification; energy-efficiency testing; GHG and energy-savings monitoring; case studies; gender-responsive outreach.
Outputs	Eligible EE/RE projects financed; loan officers trained; MSMEs reached; eligible technologies identified; monitoring tools improved; case studies disseminated; women-led MSMEs supported.
Outcomes	Increased MSME adoption of EE/RE technologies; reduced energy consumption; reduced GHG emissions; improved access to green finance; strengthened XacBank green lending capacity.
Impact pathway	Contribution to Mongolia's low-emission development pathway, green finance market transformation, reduced MSME energy-related emissions and replication of green lending practices.

Key assumptions included MSME willingness to invest if finance became more affordable, XacBank's ability to identify and support eligible borrowers, eligible technologies delivering measurable savings, TA improving borrower readiness and monitoring, and women-led MSMEs being able to benefit from targeted outreach. Key risks included high upfront costs for renewable energy, low grid tariffs, regulatory constraints, borrower confidentiality, limited verification time and incomplete tracking of some outreach indicators.

The evaluation found that the Theory of Change remained broadly valid. The causal pathway was stronger for energy efficiency investments than for renewable energy investments, which faced higher upfront costs and market constraints. Future programmes should therefore strengthen renewable-energy-specific instruments, MRV systems, gender-transformative support, and sustainability planning from the design stage.

Evaluation methodology

The evaluation of Programme assessed its overall performance, effectiveness, and contribution to advancing low-carbon and climate-resilient development in Mongolia. Anchored in the GCF Evaluation Policy and guided by the OECD-DAC evaluation criteria, the assessment examined the full implementation period (2017–2025), with a focus on relevance, effectiveness, efficiency, coherence, gender equity, country ownership, innovation, scalability, and sustainability.

An interim independent evaluation was conducted in 2021 for the period 2017–2020, assessing the Programme's initial progress based on 111 GCF-funded loans. The Program's mid-term progress and achievements were assessed as "Satisfactory", and provided recommendations for

This final evaluation (Annex A. Evaluation TOR) expands the scope to cover the entire portfolio of 154 GCF-supported loans from 2017 to 2025, providing a comprehensive analysis of Program results, implementation experience, and long-term contributions to Mongolia's green finance landscape.

Evaluation criteria

The evaluation was guided by a structured Evaluation Matrix (Annex B. Evaluation Matrix), which defined the evaluation criteria, key questions, sub-questions, indicators, data sources, methods, and analytical approaches. The matrix ensured methodological rigor and consistency in data collection and analysis, linking each evaluation criterion to measurable evidence.

Table 3. Evaluation Criteria

Criterion	Analytical Focus	Main Methods Used
Relevance, Effectiveness, Efficiency	Alignment with national priorities, achievement of outputs/outcomes, and use of resources	Desk review, KIIs, quantitative loan data analysis
Coherence	Complementarity with national and donor initiatives, alignment with GCF paradigm shift	Stakeholder mapping, document review
Gender Equity	Integration of gender equality and support to women-led MSMEs	Gender analysis, portfolio disaggregation
Country Ownership	Alignment with policies, institutional engagement	KIIs, desk review
Innovation	Introduction of new financial mechanisms and catalytic effects	Case study analysis, trend analysis
Replication and Scalability	Replicability of results and sustainability post-project	KIIs, portfolio data analysis
Unexpected Results	Identification of unplanned effects	Triangulation of data from KIIs and reports

Data Sources

The evaluation drew on both primary and secondary data sources to ensure comprehensive coverage:

- Primary data:
  - Loan data
  - Annual Performance reports (APRs), Final Completion Reports
  - Key Informant Interviews (KIIs) with policymakers, XacBank management and staff, MSME borrowers (women-led and men-led), and project partners.
- Secondary data: GCF Funding Proposal and FAA, Annual Performance Reports (APRs), Monitoring and Evaluation (M&E) data, XacBank's Disaggregated MSME Loans list (October 2025), and relevant national policy documents (NDCs, Green Development Policy, Sustainable Finance Roadmap).

Sampling Approach

A stratified sampling approach was applied to ensure balanced representation across all key groups relevant to the FP028 evaluation for qualitative analysis and triangulation of the findings. The following strata were used, reflecting geographic, gender, loan-status, and loan-category characteristics of the MSME portfolio:

- Rural
- Urban (Ulaanbaatar (UB)
- Women-led
- Men-led
- Closed loans
- Active loans
- Loan Category M1
- Loan Category M3

To ensure sufficient statistical validity and qualitative depth, a minimum of five (5) loans was selected from each stratum. Because many MSMEs fall into multiple strata simultaneously (e.g., Rural + Women-led + M1), this approach resulted in a coverage-balanced sample that reflects the diversity of the full 154-loan portfolio, ensuring that findings are robust, gender-inclusive, and representative across geographic and financial segments, while still meeting the minimum per stratum requirement.

A total of 15 borrowers were selected and contacted via phone calls and site visits to triangulate findings (Annex E. List of Interviewees).

Data Collection Methods

A mixed-method approach was used to triangulate quantitative and qualitative findings:

- Desk Review (Annex D. List of Documents):
    - Review of project documentation, GCF proposals, APRs,
    - Loan data,
    - Relevant policy documents to assess design, alignment, and performance.
- Quantitative Analysis:
    - Statistical and disaggregated analysis of XacBank's MSME loans to examine patterns across gender, location, loan size (M1–M3), energy conservation measures (ECM) type, and repayment status.
- Qualitative Analysis (Annex E. List of Interviewees):
    - Key Informant Interviews (KIIs): Semi-structured interviews with key stakeholders to capture perceptions of effectiveness, efficiency, gender inclusion, coherence, and innovation.
    - Field Verification: Validation of selected loan cases to assess technology adoption, environmental outcomes, and borrower satisfaction.
- Triangulation:
    - Cross-checking of evidence from multiple data sources (KIIs, documents, portfolio data) to strengthen validity and reliability of findings.

Data Analysis

The analysis followed the structure of the Evaluation Matrix and combined both descriptive and interpretive techniques:

- Quantitative data (loan disbursement, GHG reductions, sex disaggregation) were analyzed using descriptive statistics and ratio comparisons (e.g., disbursement rate vs. allocation rate, average loan per tCO_2 reduced). (Annex C. Results Monitoring Framework)

- Qualitative data from interviews and case studies were to identify trends under each criterion.
- Comparative and pattern analyses were used to assess performance differences across strata (rural/non-rural, gender, loan type).
- Findings were synthesized to answer each evaluation question and generate evidence-based conclusions.

Limitations

RMF: The completeness and quality of available data present a significant limitation, as results for certain indicators (i. Number of SMEs who reach out to XacBank about participating; ii. Number of loan inquiries (regardless of ultimate acceptance); iii. Aim for 50% of company inquiries from women-led SMEs, adjust gender- targeted marketing based on if these goals are achieved) were incomplete.

Customer confidentiality: Customer confidentiality requirements posed a significant challenge, as borrower information is protected and many clients were reluctant to participate in interviews or allow site visits. This limited the evaluators' ability to gather detailed qualitative evidence. Nevertheless, despite these constraints, the evaluation team was able to reach approximately 90% of the sampled borrowers, enabling a sufficiently robust verification of key findings.

Time/ duration of the evaluation: The timeframe allocated for the evaluation was not sufficient to verify certain findings or conduct deeper analysis where needed. The limited duration constrained the number of field visits, beneficiary interviews, and data triangulation efforts the team could undertake.

Ethical Considerations

The evaluation was undertaken in strict alignment with the GCF Evaluation Policy and the BRP Code of Conduct, applying internationally recognized standards of professional evaluation practice. Ethical safeguards were embedded throughout the process to ensure credibility, integrity, and respect for all stakeholders:

- Informed consent and voluntary participation: all interviewees and participants were fully briefed on the purpose, scope, and use of the evaluation. Participation was voluntary, with explicit consent obtained prior to engagement.
- Confidentiality and data protection: personal data and sensitive information were handled in accordance with established data protection protocols. Anonymity of respondents was preserved, and findings were reported in aggregate to prevent identification of individuals.
- Equity, gender sensitivity, and cultural appropriateness: the evaluation design and fieldwork incorporated gender-responsive approaches and culturally respectful practices. Diverse perspectives were actively sought to ensure inclusivity and fairness in representation.
- Independence, impartiality, and integrity: evaluators operated free from undue influence, maintaining objectivity in data collection, analysis, and reporting. Safeguards were in place to prevent conflicts of interest and uphold professional integrity.
- Do no harm principle: engagement with stakeholders was conducted with sensitivity to local contexts, ensuring that evaluation activities did not cause harm or exacerbate vulnerabilities.
- Transparency and accountability: evaluation processes, methodologies, and limitations were documented and communicated clearly, reinforcing accountability to both funders and beneficiaries.

The evaluation methodology ensured a balanced, evidence-driven assessment of the Programme's performance. By integrating the Evaluation Matrix into every stage, from question framing to data analysis, the evaluation produced credible, transparent, and actionable findings that reflect the

Programme's achievements, challenges, and lessons for future green finance interventions in Mongolia.

Evaluation Governance, Quality Assurance and Evidence Robustness

This subsection clarifies stakeholder roles, evaluator independence, quality assurance, bias mitigation, methodology, triangulation, limitations and inclusive participation. It strengthens transparency and evaluability without changing the evaluator's analysis or judgment.

Stakeholder roles and independence

The final independent evaluation was commissioned by XacBank LLC, the Accredited Entity for FP028, and conducted by BlackRock Partners LLC as the external independent evaluator. BlackRock Partners LLC was not involved in the design, approval, financing, implementation, supervision or day-to-day management of the Programme and had no role in XacBank's lending decisions, borrower selection, loan approval, portfolio management or regular GCF reporting prior to this assignment.

XacBank facilitated access to Programme documents, Annual Performance Reports, loan portfolio data, RMF information, TAF and GAP records, and borrower contact information as far as confidentiality requirements allowed. XacBank also provided clarifications when requested. Stakeholder participation supported evidence collection and triangulation but did not determine the evaluator's analysis, findings, conclusions or recommendations.

Quality assurance process

The evaluator's internal quality assurance measures included review of the evaluation matrix against the TOR and evaluation criteria; cross-checking quantitative data against loan portfolio information, APRs and RMF tables; review of calculations related to loan disbursement, gender and geographic disaggregation, GHG emission reductions and energy savings; review of interview notes, and consistency checks between findings, conclusions and recommendations. No separate external peer-review process was commissioned. In the absence of a separate external QA process, the evaluation relied on internal methodological review, evidence cross-checking, factual verification with the Accredited Entity and transparent disclosure of limitations.

Objectivity and bias mitigation

Bias mitigation measures included institutional separation between the evaluator and the Accredited Entity, use of multiple information sources, disaggregation of quantitative data where possible, cautious interpretation of limited interview evidence, and transparent identification of non-verifiable indicators. Comments from XacBank were considered for factual accuracy and completeness but did not override the evaluator's independent judgment.

Methodological justification and triangulation

A mixed-method approach was appropriate because FP028 combined concessional finance, commercial lending, technical assistance, gender-responsive outreach, and institutional capacity building. Quantitative portfolio analysis was necessary to assess disbursement, gender and geographic distribution, GHG emission reductions, energy savings, and RMF achievement. Qualitative methods were necessary to understand borrower experience, institutional learning, gender-related outcomes, market effects, and sustainability beyond the Programme period.

Triangulation was applied by comparing evidence across Programme documents, APRs, RMF data, loan portfolio data, TAF records, GAP materials, key informant interviews, borrower interviews, and selected verification activities. Where multiple sources aligned, findings were treated as stronger. Where evidence was incomplete, inconsistent or not independently verifiable, the limitation is identified and the finding is not overstated.

Gender equity and inclusive participation

Gender equity and inclusive participation were considered in stakeholder selection by intentionally including borrower groups that reflected the Programme's gender, geographic and financial diversity. The evaluation sample considered women-led and men-led MSMEs, rural and urban borrowers, active and closed loans, and M1/M3 loan categories. This was intended to ensure that the evaluation captured different beneficiary experiences, including those of women-led enterprises and rural MSMEs, rather than relying only on larger, urban or easier-to-reach borrowers.

The selection approach supported assessment of whether Programme benefits, access to finance, technology adoption and borrower satisfaction differed across gender and location. It also helped verify whether the Programme's gender-responsive design and inclusive finance objectives were reflected in implementation. Participation was affected by borrower confidentiality, availability and the limited evaluation timeframe; these constraints were mitigated by triangulating borrower interviews with sex-disaggregated loan data, Programme reports, RMF information, GAP materials, case studies and other documentary evidence.

Limitations and mitigation measures

Limitation	Potential effect	Mitigation measure
Incomplete data for some RMF and GAP indicators, including loan inquiries and sex-disaggregated inquiries.	Fewer options to verify awareness, outreach and gender-interest indicators.	These indicators are identified as not fully verifiable; use of verified indicators such as disbursement, women-led MSME participation, training records and case studies was increased
Borrower confidentiality limited access to detailed borrower-level information.	Limitation to independently verify all loan-level results and borrower experiences.	The evaluation used anonymized/aggregated data, selected borrower interviews, portfolio analysis and documentary evidence.
Restricted evaluation timeframe restricted field verification.	Limited direct observation of technologies and borrower outcomes.	The evaluation combined phone interviews, selected verification, loan portfolio analysis and APR/RMF review.
Some indicators relied on administrative or self-reported Programme data.	Potential risk of reporting bias or incomplete verification.	Available data were cross-checked against APRs, RMF tables, loan data, training records and interviews where possible.
Reporting formats changed over the implementation period.	Increased difficulty comparing information consistently across years.	Available reports covering the full period were reviewed and traceability limitations were identified.

Evaluation findings

Relevance

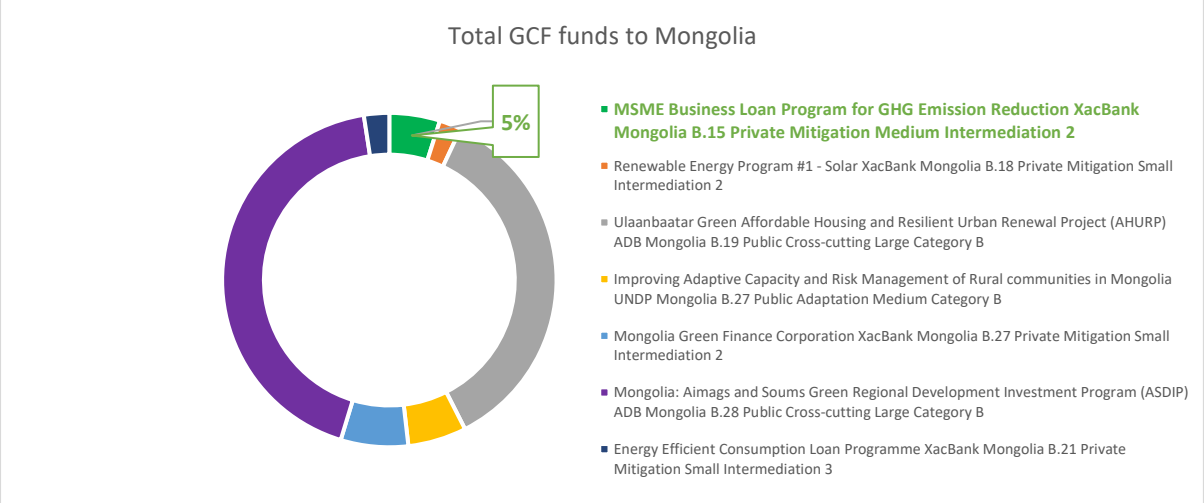
Guiding questions:

- Were the context, problem, needs, and priorities well analyzed and addressed?
- Are the Programme objectives aligned with national low-carbon priorities
- Does the Programme address MSME barriers to accessing low-carbon finance?

The GCF has committed a total of USD 408.4 million to Mongolia across a portfolio of public- and private-sector projects supporting mitigation, adaptation, and cross-cutting climate objectives. This national allocation reflects a strategic emphasis on large-scale, systems-level interventions, primarily urban resilience, regional development, and climate-resilient infrastructure, implemented largely through multilateral partners such as the Asian Development Bank (ADB) and the United Nations Development Programme (UNDP). These investments constitu

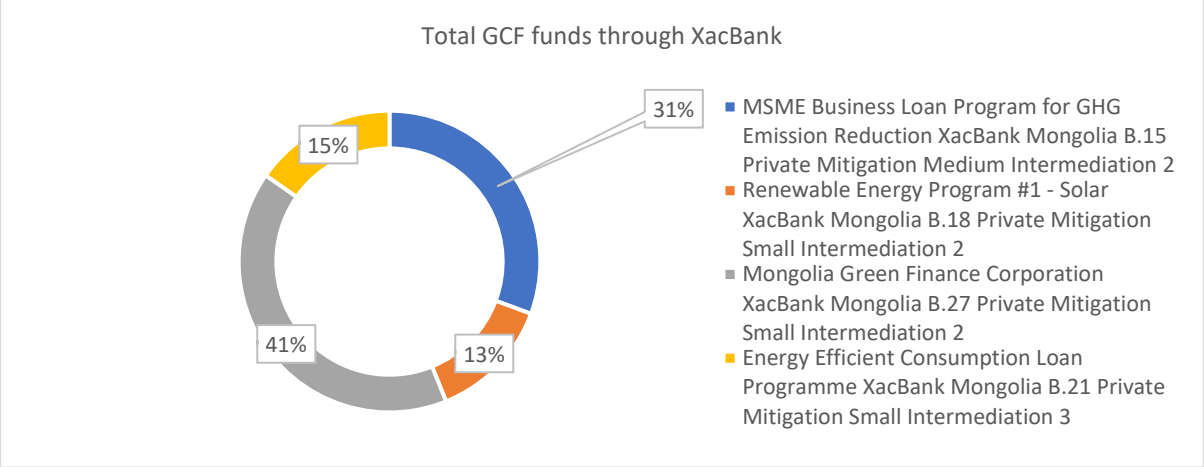
te the backbone of Mongolia's climate financing landscape, providing substantial leverage for macro-level policy shifts, institutional strengthening, and long-term urban and regional transformation.

Figure 1. GCF funds to Mongolia



Within this broader portfolio, AE accounts for USD 65.3 million, representing approximately 16% of Mongolia's total GCF allocation. Despite its smaller share relative to large public-sector programs, AE's portfolio holds strategic importance for achieving Mongolia's mitigation goals, particularly through market-based mechanisms. As the primary channel for GCF-backed private-sector mitigation finance, AE plays a pivotal role in expanding access to green credit for households and MSMEs. Its projects, including Programme and other green lending instruments, are uniquely positioned to catalyze clean energy adoption, energy efficiency improvements, and low-carbon technology uptake at the grassroots economic level.

Figure 2. GCF funds through XacBank

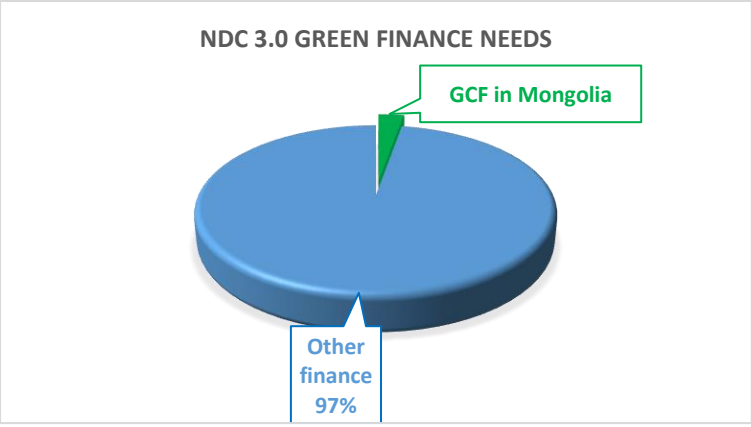


AE's share of the GCF loan demonstrates the Fund's intent to balance large national programs with targeted financial intermediation that stimulates private-sector participation in climate action. Through blended finance structures, risk-sharing mechanisms, and tailored loan products, XacBank contributes to Mongolia's broader paradigm shift by mainstreaming green lending practices within the domestic financial sector, reaching green portfolio to 4.1%[1]. This function is particularly critical because MSMEs constitute a substantial proportion (90%) of Mongolia's economic activity, yet traditionally face barriers to accessing long-term, affordable low-carbon financing.

While the majority of GCF support in Mongolia is directed toward large public-sector investments, the USD 65.3 million allocated to XacBank represents a strategically significant component of the national climate finance architecture. These resources enable the scaling of green finance markets, enhance private-sector engagement, and contribute directly to mitigation outcomes aligned with the country's Nationally Determined Contribution (NDC) targets. As such, XacBank's GCF-supported portfolio, of which Programme is a central element, remains critical for advancing Mongolia's transition to a low-emission, climate-resilient development pathway.

The financial needs for Mongolia to support implementation of Paris agreement are estimated initially as USD 14.84 billion, of which USD 9.64 billion for mitigation, and USD 5.2 billion for adaptation[2]. The investment in mitigation profile is dominated by energy. NDC 3.0 highlights the importance of renewable energy generation, grid efficiency improvements, cleaner fuels, electrification of transport, and multimodal public transit systems; and energy-efficient housing and retrofitting technologies in the construction sector.

Figure 3. Financial needs, NDC 3.0



[1] XacBank Sustainability Report, 2024
[2] Mongolia NDC 3.0

Overall, the GCF-financed MSME Business Loan Programme directly supports this national priority by enabling investments in modern, energy-efficient technologies and improved building designs. By promoting better insulation, efficient heating systems, and cleaner energy solutions in MSMEs operating in the construction value chain, the Programme reduces energy consumption during winter months when demand peaks and coal-based heating emissions are at their highest. This alignment strengthens the Program's relevance to both climate mitigation and Mongolia's strategic goal of improving winter resilience, reducing air pollution, and lowering sectoral emissions.

Effectiveness

Guiding questions:

- Are outputs and outcomes achieved as planned?
- How many loans disbursed vs. target?
- What is the total GHG emission reduction achieved?
- Were technologies adopted and used effectively?

Over the 2017–2025 implementation period, the Programme financed 154 loans, amounting to a total disbursement of USD 21.39 million. These investments generated an estimated 70,039.64 tCO_2e of annual emission reductions, translating into 1,031,606 tCO_2e of lifetime emissions savings, and approximately 100.7 million kWh of annual energy savings. The performance trends over time reveal several notable patterns in portfolio distribution, gender orientation, geographic reach, and climate impact intensity.

Across the eight-year period, the Program financed 50 rural loans, representing 32% of the total GCF financing. Rural loan uptake remained modest in the early years, with only 1 loan in 2017, rising significantly in 2018 (13 loans) before stabilizing between 2019–2021 (averaging 9 rural loans per year). The decline in rural lending after 2021 (2–4 loans per year) suggests either reduced demand, market saturation, or programmatic/financial barriers during the COVID-19 and recovery period. Despite these fluctuations, rural SMEs consistently leveraged GCF funding for technology adoption with meaningful energy savings and emissions reductions.

Women-led enterprises accounted for 83 loans, equivalent to 54% of the portfolio. The highest participation was observed in 2018 (32 women-led loans), aligning with the overall peak in loan volume and disbursements. The sustained engagement of women entrepreneurs demonstrates that the Program effectively targeted and reached gender-inclusive beneficiaries, in line with XacBank's gender strategy and GCF's gender policy. Participation remained significant throughout implementation, with women-led businesses present in every year of lending.

Outcomes

M1.0 Reduced emissions through increased low-emission energy access and power generation

Under FP028: MSME Business Loan Programme for GHG Emissions Reduction 13% of the GCF funds and 32% of the total number of loans (32% of which are loans from rural area), and 64% of the rural MSME loans are loans primarily focused on heating efficiency, renewable energy expansion, and clean energy supply chains. These were counted towards GCF's fund level impact results M1.0 "Reduced emissions through increased low-emission energy access and power generation".

A large portion of loans towards M1.0 supported the replacement of old, inefficient, and coal-based heating systems with cleaner, more efficient alternatives, including boiler replacements (multiple cases), heat-only boiler (HOB) upgrades and expansions, replacement of traditional stoves with efficient hobs, installation of energy-efficient pumps and electrical heaters, transition from coal boilers to clean alternatives such as LPG. Many MSMEs and community facilities used the loans to shift from standalone coal boilers to the cleaner, more efficient centralized district heating system. A substantial number of loans supported the development and expansion of Mongolia's growing solar energy market. Several loans targeted improved energy performance in enterprises through purchase

of energy-efficient electrical equipment, supply and retail of efficient appliances and led lighting upgrades. Some loans supported a shift away from coal toward cleaner fuels, some climate-relevant loans include investments in a plastic, paper, and metal recycling plant, and a renewable-energy-powered businesses.

M3.0 Reduced emissions from buildings, cities, industries and appliances

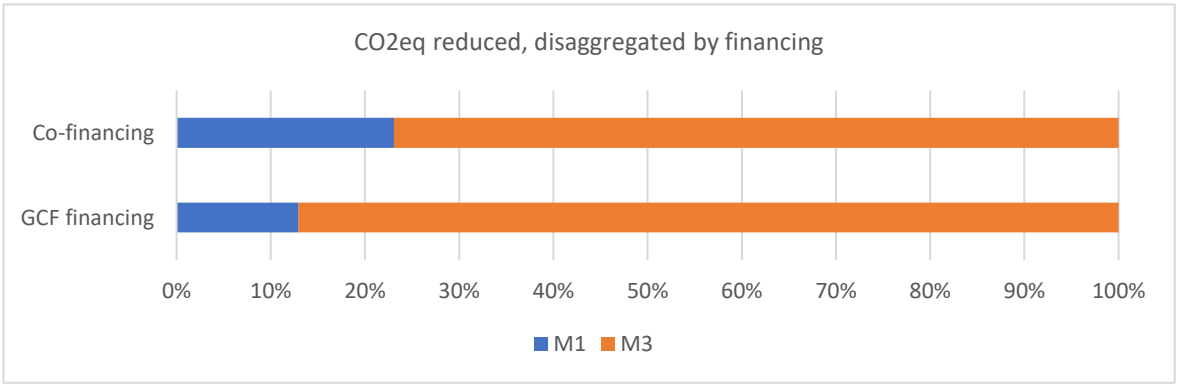
The relevance of the GCF-funded Programme is further underscored by Mongolia's harsh climatic conditions and the structural challenges of its construction sector. Mongolia experiences extremely cold and prolonged winters, with temperatures regularly dropping below -30°C. These conditions drive very high energy demand for heating, especially in buildings that are often poorly insulated due to outdated construction practices, limited enforcement of building codes, and reliance on low-cost materials. As the construction sector is a major consumer of energy and a significant source of GHG emissions, improving building energy efficiency is critical to meeting Mongolia's NDC target of reducing emissions by 14% by 2030.

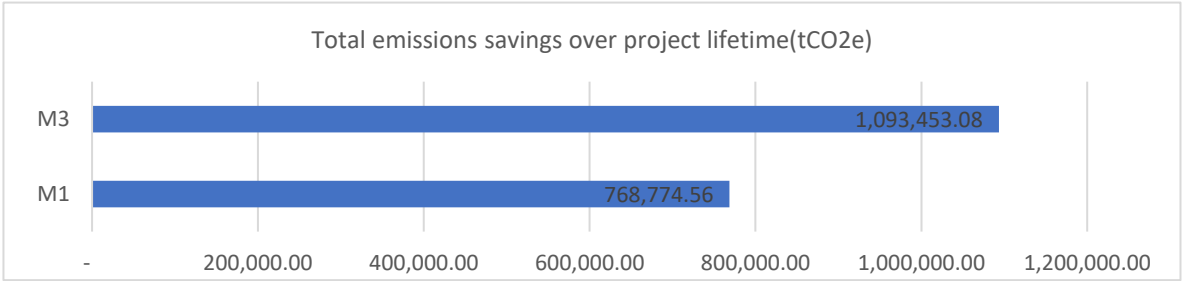
Across the listed loans, the program overwhelmingly (more than 80% of the GCF funds) supported energy efficiency (EE) upgrades, efficient equipment purchases, and improvements in building insulation and window systems towards reaching targets under fund-level impact results M3.0 "M3.0 Reduced emissions from buildings, cities, industries and appliances". Almost 60% of the total GHG emissions are saved under M3.0.

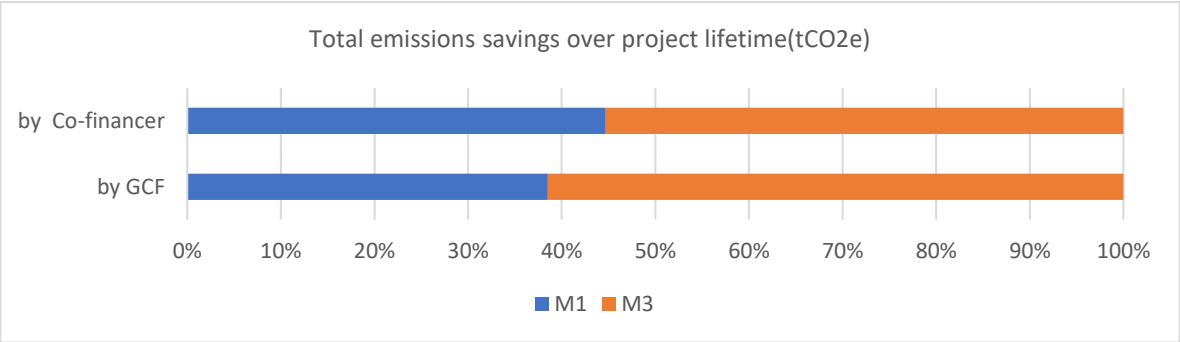
Table 4. Fund-level impacts

Expected Result	Indicator	Final Results
M1.0 Reduced emissions through increased low- emission energy access and power generation	Tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided	768,774.56
M3.0 Reduced emissions from buildings, cities, industries and appliances	Tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided	1,093,453.08
SUM		1,862,227.64

Figure 4. M1 and M3 results

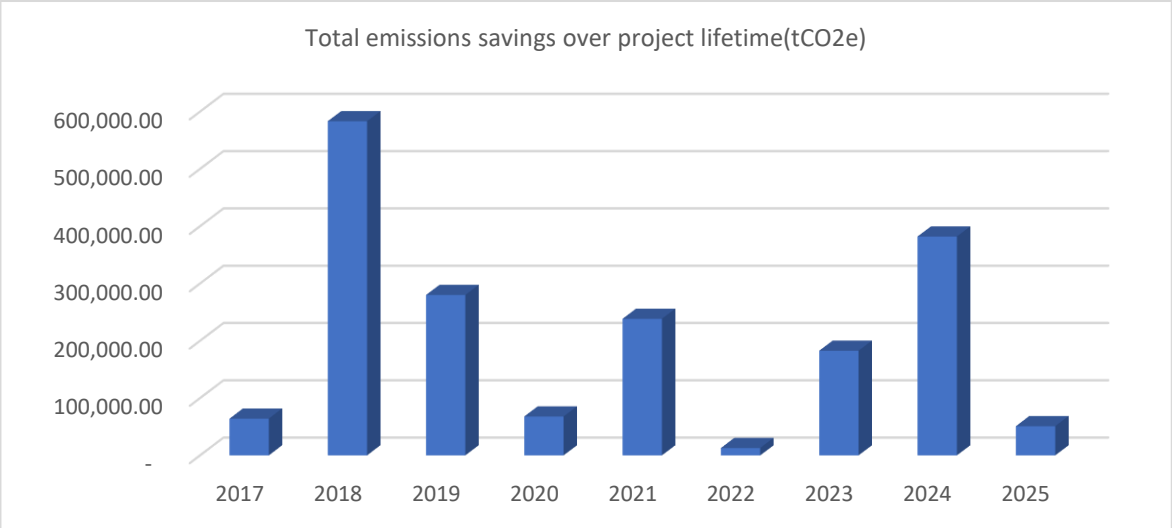


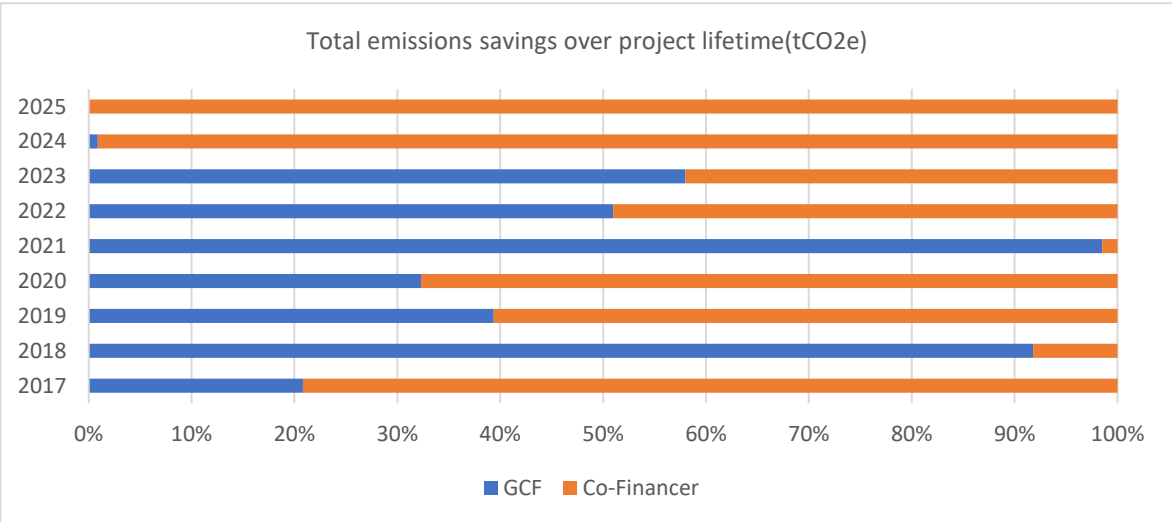




Emissions reductions were calculated on financed projects. Loan lists and APRs are primary data sources. In addition, the evaluation team conducted site visit to bank and accessed the designated GHG emissions calculation platform to verify emission factors and methodologies.

Figure 5. Emission savings, disaggregated by year (as a result of total financing)

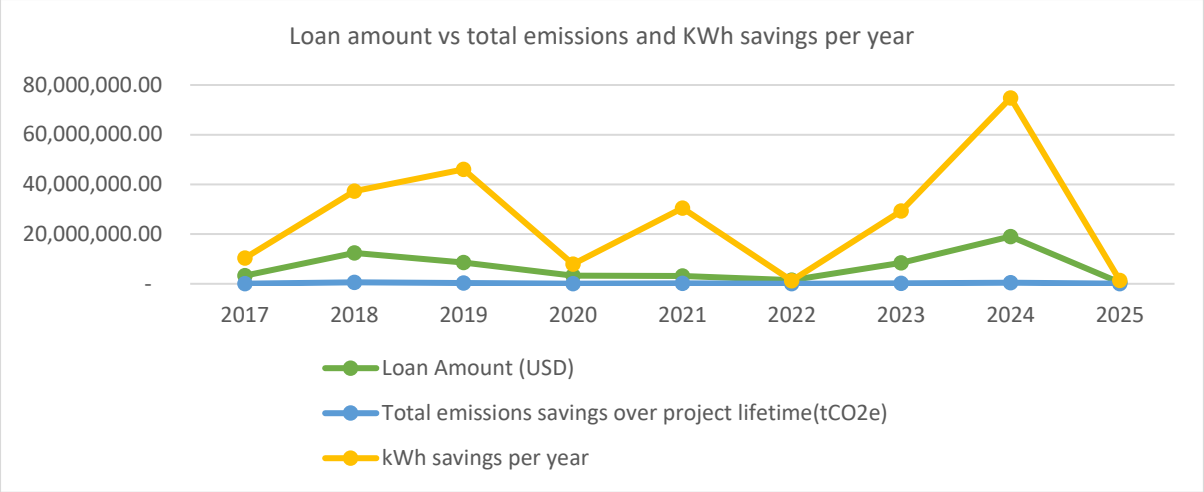




The Program's climate impact profile shows substantial year-to-year variation, closely correlated with loan volume and technology types financed.

M6.0 Increased number of small, medium and large low- emission power suppliers/ M7.0 Lower energy intensity of buildings, cities, industries and appliances

Figure 6. Total financing, CO2 emission and Energy savings, disaggregated by year



Energy savings are also significant, with cumulative annual reductions reaching 238.8 million kWh, indicating that financed technologies generated both emissions benefits and meaningful efficiency gains for MSMEs. Overall, the aggregated results show that the Program effectively mobilized climate-relevant investments and exceeded its expected mitigation contributions.

Outputs

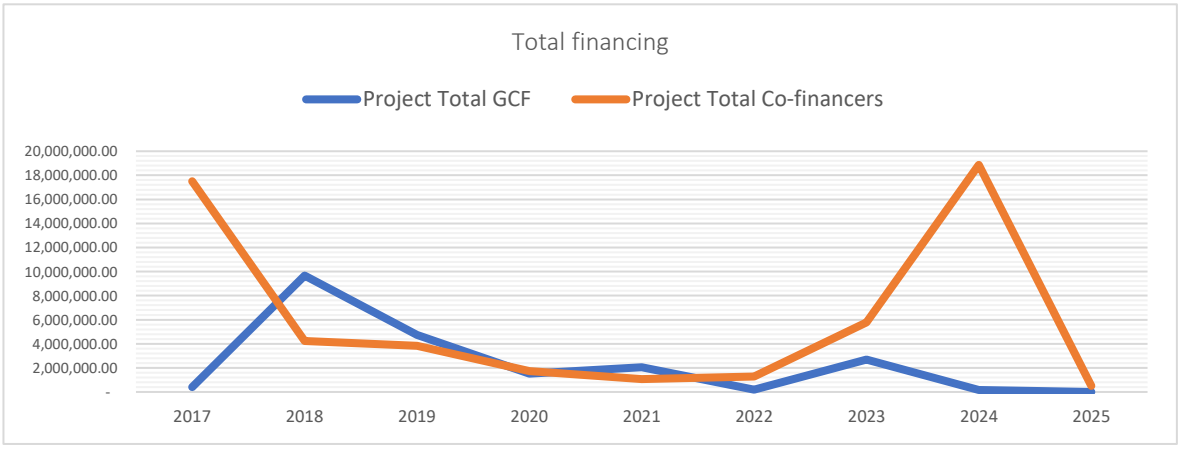
Output 1. Commercially viable EE and RE projects are identified, financed and implemented

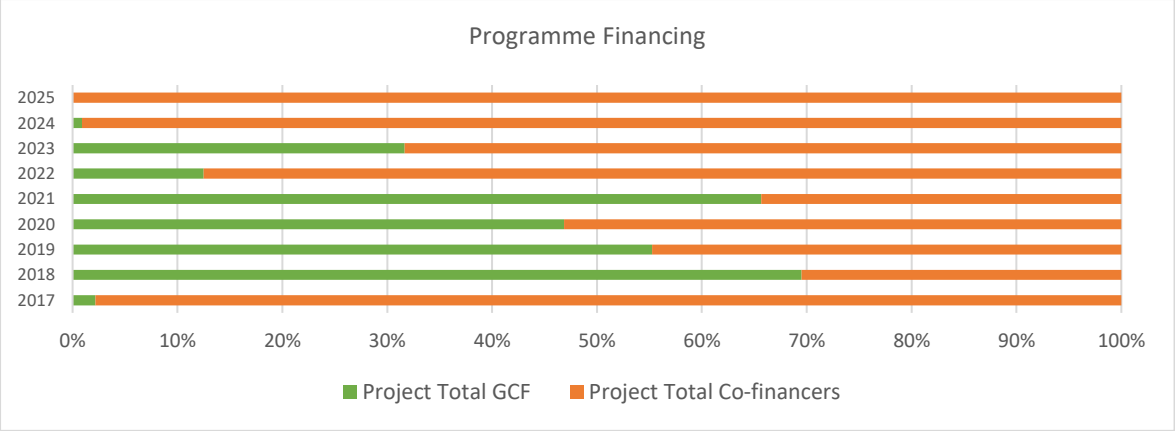
This goal focuses on promoting energy efficiency (EE) and renewable energy (RE) by ensuring that viable projects receive financing and are successfully executed. Verification is based on loan list. Volume of financing reached $76.2 million USD, which exceeded final target.

- GCF financing: $21,391,647.69 USD, n=154 loans,
- Co-financing (GCPF, ADB, EBRD+DWM): $54,831,713.00 USD, n=172 loans.

This indicates that the program surpassed its total financing goal by 27%, suggesting strong performance in mobilizing capital for EE and RE initiatives. It may also suggest high market demand.

Figure 7. Financing by year



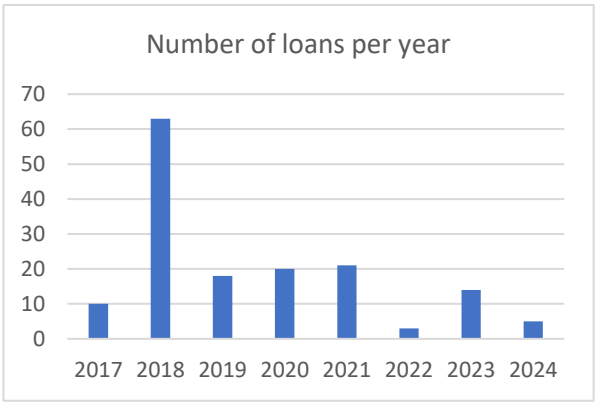


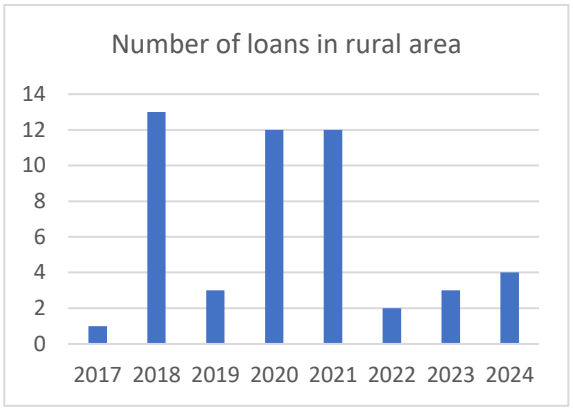
As for GCF financed activities, the year 2018 was the Program's most active period, accounting for:

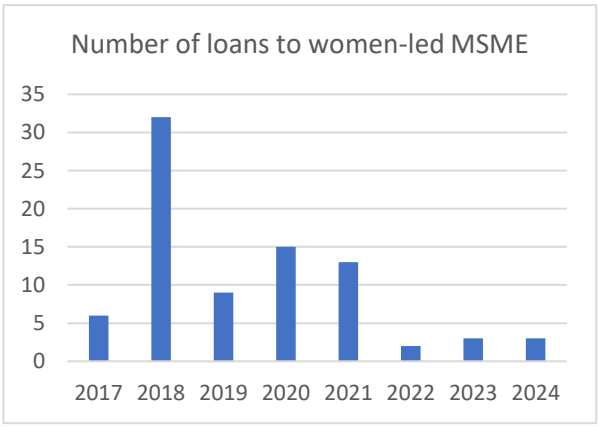
- 63 GCF financed loans (41% of annual total)
- USD 9.67 million of GCF investment disbursed (45% of cumulative disbursement)

This spike reflects strong market readiness for energy-efficient technologies during the early scaling phase of the Program, which is led by low repayment rate; high interest in green loan. Subsequent years saw variable but declining loan numbers, consistent with tightening macroeconomic conditions and impacts of the COVID-19 pandemic. By 2024, lending activity had slowed to 5 loans and USD 168,086, showing signs of portfolio maturity. However, the AE actively blends the Programme with GCPF financing hence lending fluctuation is not seen on overall co-financed loans.

Figure 8. Number of GCF investment loans, disaggregated







Output 2. Sustainable energy project identification awareness capacity increased across local institutions

This result aims to strengthen institutional capacity and awareness to identify and engage with sustainable energy initiatives, as this Output has two indicators:

- Number of loan officers trained to offer Eco Products
- Number of SMEs who reach out to XacBank about participating.

Verification relied on administrative records and training documentation, which are standard and reliable sources for tracking capacity-building activities. Training 2,175 loan officers against a target of 400 reflects a highly successful capacity-building initiative. The scale of training suggests that the program may have expanded beyond initial projections, reaching national and regional levels.

Although SME outreach is mentioned as an indicator, no quantitative target is set, the indicator results were not reported.

Output 3. Increased awareness of benefits of EE and RE projects

This outcome targets enhanced public and institutional understanding of the advantages of EE and RE initiatives, aiming to stimulate engagement and uptake.

- The number of MSMEs contacted through marketing events exceeded expectations by over 100%, indicating highly effective campaign strategies and strong interest from the target audience.
- Website traffic was significantly higher than projected, suggesting strong public interest. However, the lack of verification raises concerns about data reliability. The Bank was informed that, following the 2023 update to Google Analytics, it has not been possible to access this data in the same manner as before. Nevertheless, the cumulative value recorded up to 2023 reached 7,793.
- Tracking inquiries proved challenging due to the use of multiple channels. Accordingly, "970 inquiries" reflects only emails received from branches, eco-loan requests submitted through the internal system, and inquiries collected during events (e.g., handouts). While loan inquiries fell short of the target, the absence of verification data makes it unclear whether this reflects actual underperformance or reporting limitations.
- Publishing all 32 planned case studies demonstrates commitment to transparency and knowledge sharing, which supports long-term awareness and replication. These case studies illustrate the tangible impact of the loans on clients, with several featured multiple times across our annual reports, training materials, and presentations.

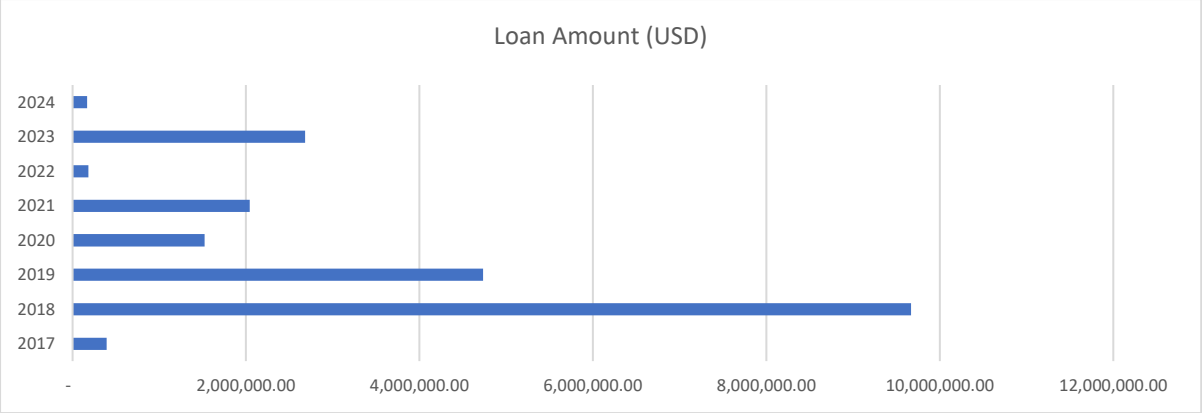
While some indicators show strong performance, the lack of verification for others undermines the robustness of the evaluation. Strengthening data validation protocols is recommended. While, the success in outreach and case study publication positions the program well for scaling and advocacy, especially if digital metrics can be more rigorously tracked.

Efficiency

Guiding questions:

- Were financial and technical resources used efficiently?
- Were resources and time effectively utilized?
- Was the blending of concessional and commercial finance efficient?
- How efficient was the M&E system?

Figure 9. GCF financed loan disbursement, by year



This Programme focuses on promoting energy efficiency (EE) and renewable energy (RE) by ensuring that viable projects receive financing and are successfully executed. As per Output 1, total financing reached $76.2 million USD, engaging co-financers: GCPF, ADB, EBRD+DWM. Efficient use of financial resources supported the Program reaching climate targets.

Review of the Annual Performance Reports (APRs) shows different reporting format: 2017-2020 was easy to follow and verify, however, starting from 2021 the reporting format changed, which created obvious difficulties to clearly report the results, which highly likely continued until end of the Programme, resulting difficulties in verifying reporting during APR 2023-2024.

The APR narratives and the financial spreadsheets indicate some years' spending concentrated in certain budget lines and variance from annual plans. While certain budget lines underspent and others overspent due to procurement delays and reallocation requests. Overall program funds were disbursed by project end but with timing inefficiencies.

Blended finance has been effective in mobilizing wider commercial lending appetite, the concessional component reduced perceived risk for bank and borrowers.

Table 5. Estimated emission cost

Indicators	Final Target	AE's report	Actuals
Lifetime tCO2eq tons	1,194,323.98	1,862,227.64	1,862,227.64
Estimated cost per tCO2eq	50.24	32.26	40.93
Estimated GCF cost per tCO2eq removed	16.75	10.74	11.49

Note: Total financing – $76.2mln; Lifetime emission savings: 1,862,227.64.

Underuse of the TAF Grant funds necessitated a reallocation across grant components, which was requested in 2021 and formally approved in 2022. As part of the approval, the AE was required to provide annual reports on disbursement; which was continuously reported since the start throughout the Programme implementation APR Section 3 Financial Information.

Coherence

Guiding questions:

- To what extent does Programme complement or add value to other climate finance initiatives?
- How well does the Programme align with the GCF paradigm shift objectives?

FP028 not only aligns with GCF paradigm shift objectives but also enhances the impact of other climate finance initiatives through co-financing, knowledge sharing, and capacity-building synergies, reinforcing systemic change and market transformation while promoting gender inclusion. Notably, the Programme leverages co-financing from complementary initiatives such as the EBRD MONSEFF

program and the GCPF GHG Emission Reduction Program, creating synergies that expand the reach and impact of climate finance for Mongolian MSMEs.

By combining concessional resources, reaching $76.2 million USD – 27% exceeding the initial plan, the Programme demonstrates a replicable blended finance model that reduces risk, mobilizes private investment, and strengthens the local green finance ecosystem.

The Programme is implemented through strategic partnerships with local energy auditors, technology producers, and retailers. Energy auditors provide technical assessments, verify energy savings, and ensure that projects meet efficiency standards. Producers and suppliers of EE and RE equipment, as well as retailers, work closely with MSMEs to provide appropriate technologies, installation support, and after-sales services. These partnerships not only ensure the technical quality and reliability of financed projects but also help stimulate local supply chains, create market linkages, and promote broader adoption of green technologies.

Reimbursing clients for product energy efficiency testing with accredited institutions (e.g., BEEC) ensures that financed products meet performance standards, reducing the risk of underperforming projects and loan defaults. Also, engaging certified auditors, reliable technology producers, and trusted retailers ensures quality assurance, proper installation, and ongoing technical support, minimizing operational risks for MSMEs.

Gender equity

Guiding questions:
- How effectively did FP028 integrate gender equality principles?

Gender equity was assessed through multiple lenses—including inclusiveness, equitable access to finance, participation, women-led loans, and differentiated climate benefits.

From an equity perspective, the Programme contributed to reducing gender-differentiated vulnerabilities. Women, particularly in urban households and small businesses, are disproportionately affected by high winter heating costs and indoor air pollution. Investments in insulation, efficient boilers, and clean heating technologies, supported by the Program, helped lower energy expenditure and improved indoor environments, generating direct benefits for women who often spend more time in these spaces or manage household-level heating decisions.

Loan Programme

Women-led MSMEs represent nearly 73% of the total loan portfolio, indicating meaningful gender responsiveness within the program. The proportion of active number of women-led loans (54%) is comparable to that of men-led enterprises, reflecting equitable portfolio sustainability. However, women borrowers tend to concentrate in M3 category loans, indicating smaller loan sizes and potentially lower risk tolerance or collateral availability.

Table 6.GCF-financed Loans, disaggregated by rural, women-led

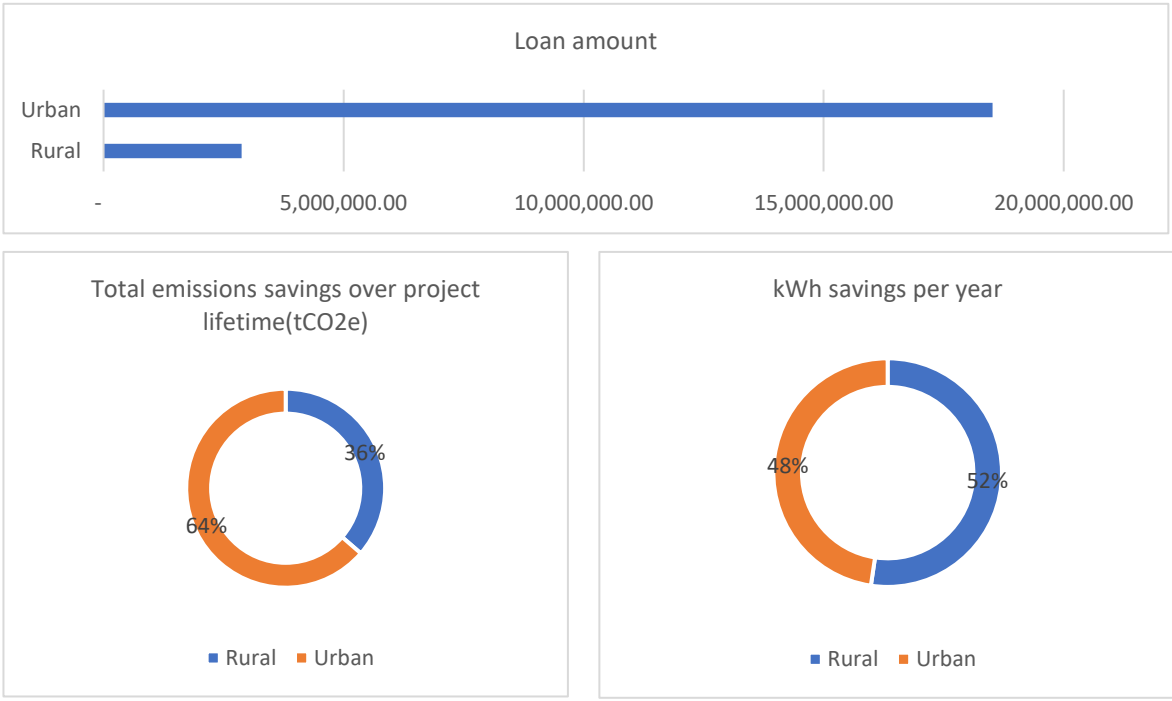
		Women-led	Loan Amount (USD)	CO2 emission savings per year (tCO2e)	Total emissions savings over project lifetime(tCO2e)	kWh savings per year
Rural	50	30	2,874,486.65	22,664.75	375,087.19	52,720,788.78
Urban	104	53	18,517,041.86	47,374.89	656,518.99	47,985,867.47
Total	**154**	**83**	**21,391,528.51**	**70,039.64**	**1,031,606.18**	**100,706,656.25**

Geographic disaggregation shows coverage across multiple aimags, but concentration in Ulaanbaatar persists. Rural branches show smaller portfolios, likely linked to differences in demand density. This

pattern suggests that AE's support mechanisms should continue strengthening rural financial intermediation, possibly through other loan programs. About 42% of loans are rural, demonstrating that the project effectively reached outside urban centers, consistent with FP028's climate change mitigation objectives. Non-rural loans, by contrast, are concentrated in service and manufacturing sectors.

Although only 13% of the total loan amount is disbursed to rural MSMEs, 60% of which are considered women-led MSME. 36% of the total GHG emissions saved by rural loans over the project lifetime, and interestingly, 52% of energy saved annually within the Program, which constitutes that high energy efficient equipment loans are from rural area.

Figure 10. Loan amount disaggregated, by rural, GHG emission and energy savings

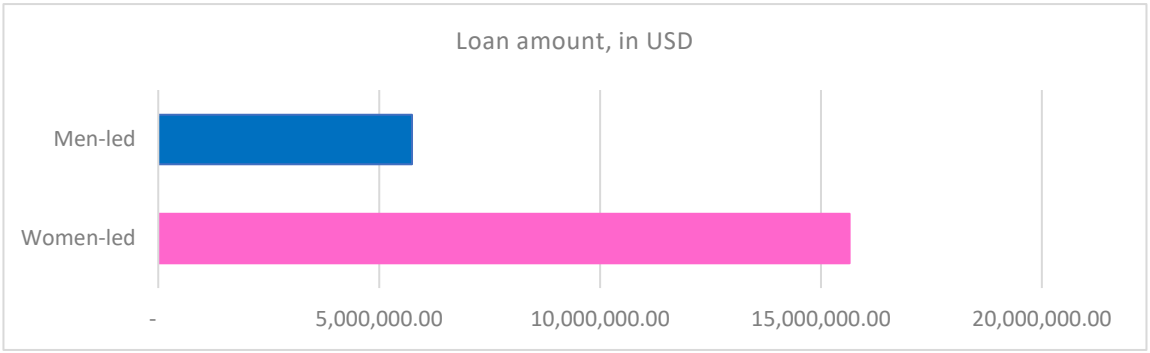


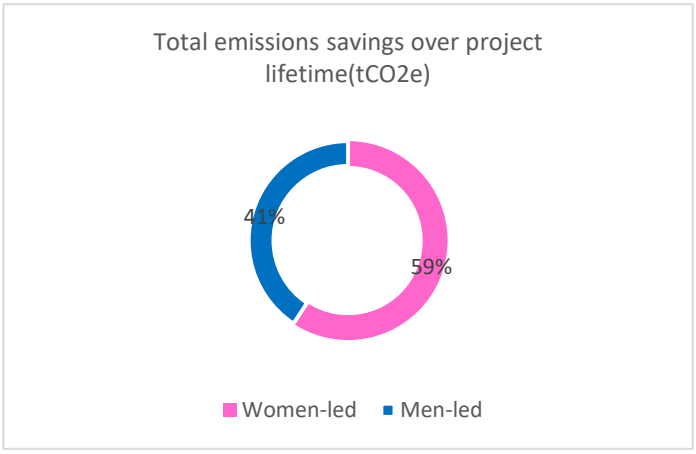
Interview with rural borrowers, revealed that loan officers of AE in rural area are well informed and able to provide decent information about loan, which highly likely supported to reach rural area loans to 32%, regardless of the loan amount. This professional support was instrumental in enabling the household to access the loan and implement efficiency improvements effectively (Programme Output 2).

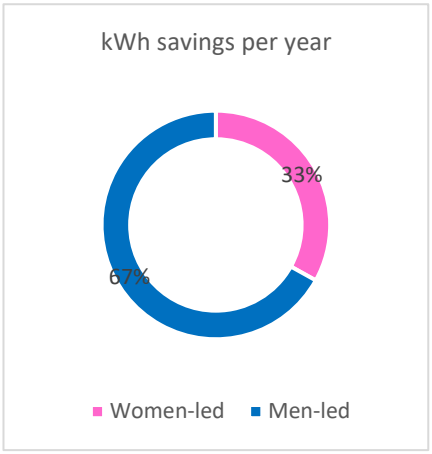
Interview highlights (Khuvsgul loan):

Many rural branches of local banks in the region had a very limited understanding of green finance, energy-efficient buildings, or related loan products. In contrast, the economist from XacBank was well-informed and provided clear, accurate guidance, helping the beneficiary navigate the process and understand the benefits of energy-efficient investments.

Figure 11. Women-led MSME's loans







The Programme demonstrated a strong and measurable contribution to gender equity by significantly expanding women's access to climate finance and enabling their participation in Mongolia's low-carbon transition. Women-led MSMEs not only accessed finance at scale, but also generated disproportionately high climate benefits.

Very interesting fact observed is most of the Program funds disbursed to women-led MSMEs, which accordingly saved almost 60% of the total lifetime GHG emissions, however only 33% of energy saved thru the Program. Women-led enterprises tended to invest in activities that eliminate high-emission fuels, primarily coal-based heating systems, heat-only boilers, and inefficient stoves, which have a high CO_2 reduction impact per unit of energy saved; while men-led enterprises invested more in energy-efficiency measures that reduce consumption, including electrical appliances, insulation retrofits, EE equipment, and energy-efficient lighting.

Gender Action Plan

The Gender Action Plan is well aligned with principles of gender equality in access to finance, capacity building, and knowledge dissemination. It integrates gender considerations throughout the loan cycle, from outreach and participation to capability strengthening and knowledge sharing.

Although the construction and energy-efficiency sectors in Mongolia are traditionally male-dominated, the Programme demonstrated meaningful progress in expanding opportunities for women entrepreneurs and women-led MSMEs. Women-led borrowers gained improved access to affordable green finance, a space where women often face systemic barriers such as limited collateral, lower financial literacy opportunities, and restricted networks for business development.

Table 7. GCF-financed Loan, disaggregated by women-led

	Rural	# of loans	Loan Amount (USD)	CO2 emission savings per year (tCO2e)	Total emissions savings over project	kWh savings per year

					lifetime(tCO2e)	
Women-led	30	83	15,648,054.38	40,238.84	611,317.02	33,295,550.32
men-led		71	5,743,474.13	29,800.80	420,289.16	67,411,105.93
Total		**154**	**21,391,528.51**	**70,039.64**	1,031,606.18	100,706,656.25

Programme showed early signs of strengthening women's agency in green sectors by increasing their participation in climate-aligned business activities, improving their financial standing through loan access, and encouraging their involvement in low-carbon construction value chains.

Output 1. 50% of loan clients fund-wide are women-led MSMEs

This is an ambitious but meaningful target, especially in the context of green finance where women-led businesses often face structural barriers such as limited collateral, smaller enterprise size, and lower access to information. The Program achieved the target by reaching 54% of the total borrowers are considered women-led MSMEs, disbursing 73% of the total GCF funds to women-led MSMEs.

Output 2. Equal interest from men and women-led MSMEs in participating in the program

Output 2 focuses on measuring interest, not just loan approval or disbursement. This implies capturing information on all MSMEs that express a desire or inquiry to participate in the program, whether or not they ultimately take a loan. The GAP Output 2 is directly linked with Programme's Output 3, indicator 3. However, data was not disaggregated by sex, hence equal participation of men and women could not be verified. Besides, capturing true "interest" has limitations.

Output 3: Ensure local businesses' capacity building on climate finance competencies is equally shared between genders

Output tends to ensure that training, workshops, and technical assistance benefit both men and women. However, indicator "Outsourcing employment statistics to be disaggregated by gender; Aim for 50% of all external advisors to be women" is counting outsourced contracts with female advisors or trainers. A total of 10 external advisors were engaged across multiple technical areas within the program. Of these, 8 were women, representing 80% of all advisors. This reflects a strong gender-inclusive approach in consultant selection, particularly noteworthy given that technical fields such as finance, ISO standards, and energy efficiency often see lower female representation.

Output 4: Knowledge management products highlighting equal gender access to climate finance programs to be prepared and disseminated

This output promotes visibility of gender results and lessons learned, helping replicate gender-responsive approaches across other programs and institutions. This GAP output 4 is linked with Programme's Output 3, indicator 4. A total of 32 case studies developed and showcased, 5 of which are about women-led MSME.



Overall, the GAP is largely focused on achieving specific number of women rather than driving deeper into gender transformation, and as a result, it does not fully address the structural barriers that women entrepreneurs may still face, such as limited collateral, lower financial literacy, time poverty, mobility constraints in rural areas, and the dominance of men in sectors like renewable energy and technology. Its implementation is further constrained by the absence of clear monitoring arrangements specifying who will collect sex-disaggregated data, how frequently, and through what reporting mechanisms.

Additionally, the plan does not allocate a dedicated budget for gender activities, which limits the feasibility of delivering targeted support.

Country ownership

Guiding questions:
- To what extent is the Programme aligned with Mongolia's national policies and priorities?

The Programme closely aligned with Mongolia's climate and development priorities, demonstrating institutional commitment to national goals.

Nationally Determined Contribution (NDC): The programme financed energy-efficient and renewable energy technologies that directly contribute to Mongolia's NDC targets on reducing GHG emissions 1,031,606.18 tCO_2eq from the building, industry, and energy use sectors. XacBank's website suggests to calculate carbon footprint, by placing simplified carbon calculator[3].

Mongolia's Green Taxonomy: The Programme complemented Mongolia's Green Taxonomy, and the Government Green Finance Strategy led by the Ministry of Finance and Bank of Mongolia. XacBank posted green technology list for heating, building insulation, housing and renewable energy solutions as per Green Taxonomy.

Capacity building: GCF finance (specifically TAF) played a pivotal role as a national financial intermediary, strengthening domestic competency in delivering climate finance. The green MSME loan products developed under the GCF Programme remain in use after Programme closure, contributing to long-term domestic financial market transformation. Mongolian Sustainable Finance Association (MSFA) has developed "Integration of gender-responsive (GR) financing practices in the Mongolia's financial sector", where XacBank's gender GR approach is exampled as best practice[4].

Green finance lead: Local MSMEs became more familiar with energy efficiency measures, renewables, insulation, and clean technologies through advisory services and training.

Interview highlights (UB loan):
Although it was the first time, I took a loan from XacBank as a customer and businessperson, to me, the bank's Green Loan offered very good interest, which is the main advantage for us to move

[3] https://xacbank.mn/en/eco-bank
[4] Integration of gender-responsive (GR) financing practices in the Mongolia's financial sector, MSFA, 2021

towards the next level. Being able to choose the reliable manufacturers of LED lights in China literally helped our reputation not only as a buyer, but also as a seller, back in the country.

The AE fulfilled and even exceeded many elements of country ownership through this Programme. It aligned fully with national strategies, strengthened domestic financial and technical capacity, engaged local MSMEs, including women entrepreneurs, and institutionalized green finance practices that will continue beyond GCF support. This positions AE as a key national actor in finance sector and in Mongolia's transition to a low-carbon and climate-resilient economy.

Innovation

Guiding questions:
- What innovative financial or technical mechanisms were introduced by the Programme?
- Did the Programme unlock additional private sector investment?

FP028 Programme introduced several first-of-its-kind mechanisms for Mongolia's SME green finance market, positioning XacBank as a leading national entity in climate finance.

Concessional GCF loan blended with commercial finance allowed XacBank to offer longer tenors, lower interest rates, and reduced collateral requirements for green MSMEs. This was one of the first structured blended finance products in Mongolia specifically targeting energy efficiency (EE) and renewable energy (RE).

Creation and institutionalization of a Green Eligibility Criteria and technical appraisal system for EE/RE MSME investments. Introduction of GHG emission calculation tools, energy saving estimation, and project viability screening, capabilities that did not exist within MSME lending previously. Introduction of baseline methodologies, MRV templates, GHG accounting software, and reporting requirements aligned with GCF standards. XacBank developed an internal Carbon Tool (TAF Grant Component 3) for measuring GHG impacts, an important institutional innovation.

FP028 provided tailored training for MSMEs on EE technologies, ISO standards (TAF Grant Component 1), financial literacy, and climate finance, an innovation in outreach to small enterprises. The program embedded gender-sensitive training approaches, strengthening women-led MSME participation through improved technical readiness.

A key innovation of the Programme is the Test Support Program, under which the AE reimburses MSME clients for the costs of conducting energy efficiency assessments on their products. These tests are carried out in partnership with technical institutions such as the Building Energy Efficiency Center (BEEC) (TAF Grant Component 2 Output 4). Reimbursement is contingent on loan application approval, incentivizing clients to validate the energy performance of their products. Importantly, the product information and test results are uploaded to the EE/RE technology website, making verified efficiency data publicly available.

Replication & scalability

Guiding questions:
- Are the Programme results replicable and scalable within Mongolia or elsewhere?
- Are the results sustainable beyond GCF funding?

Although the Programme has formally concluded, the model it introduced has proven both replicable and highly scalable within Mongolia's financial sector. The Programme demonstrated a successful blended-finance approach, combining concessional GCF capital with commercial bank resources to offer longer tenors and lower interest rates for energy-efficient and renewable energy investments. These elements now serve as a blueprint for other Mongolian banks. With the rollout of the national Green Taxonomy[5], and policy support from the Bank of Mongolia, several commercial banks have

[5] Mongolian Green Taxonomy

begun adapting similar green loan products—extending financing for energy efficiency, EVs, insulation, and clean technologies.

Mongolia's commercial banking sector has become an important driver of green finance, with several local banks offering dedicated loan products that support environmentally sustainable investments. XacBank plays a particularly prominent role as the country's only Accredited Entity to the Green Climate Fund (GCF). Through this accreditation, the bank channels concessional financing into a range of green loan products, including energy-efficient housing loans, renewable energy investments, and MSME-focused green loans that help small businesses adopt cleaner and more efficient technologies.

Other major banks, such as Khan Bank[6], Trade and Development Bank (TDB)[7], and Golomt Bank[8], have also introduced sustainable lending products as part of Mongolia's broader shift toward green banking. Their offerings typically include energy efficiency loans, electric vehicle (EV) financing, insulation and building improvement loans, and other clean technology financing solutions. Together, these banks are gradually expanding access to green finance across households, urban consumers, and small and medium enterprises, helping accelerate Mongolia's transition toward a more energy-efficient and climate-resilient economy.

Green loan reporting under Mongolia's green taxonomy began in early 2020, when green loans accounted for 428.1 billion MNT, or 2.5% of total lending. By the first quarter of 2024, the portfolio had expanded to 875.3 billion MNT, reaching 3.0% of total loans. Projections indicate that green loans may reach 6% of total lending by 2026 and 10% by 2030[9].

Interview highlights (XacBank):
XacBank continues to provide green MSME loans beyond the GCF-funded Programme, maintaining gender considerations, requiring a minimum 20% energy-efficiency improvement, and offering loans without collateral. However, because these products are now financed entirely through the bank's own commercial resources, interest rates are higher than those available under the GCF Programme. While the Programme's concessional rate was 15% or less, current interest rates for similar loans range from 16.2% to 18%. In addition, GHG emission reductions are still calculated for loans for EE. As of 2025 Q3 the average loan size for the year is MNT 370 million (equivalent to $104,120.35USD)[10]

Scalability potential remains strong. The Programme helped establish market awareness, supplier networks, and borrower confidence, all of which reduce barriers for future expansion. Banks can now scale green lending using their own capital or international climate finance sources.

However, continued international green finance support is critical for sustaining Mongolia's green financial products and strengthening the overall enabling environment for green lending. External climate finance, through concessional loans, guarantees, technical assistance, and capacity-building, helps local financial institutions offer more affordable green loan products, extend longer tenors, and reduce risks associated with new or unfamiliar green technologies. Without such support, banks are forced to rely solely on commercial capital, which typically results in higher interest rates, smaller loan sizes, and limited monitoring of climate impacts.

Beyond improving access to finance, international support also plays a key role in maintaining robust systems for measuring and reporting GHG reductions, aligning banks with global taxonomies and standards, and contribute to establishing MRV system.

[6] Khaan Bank, Ногоон зээл
[7] Trade and Development Bank, Electric Car Loan
[8] Golomt bank, Green consumer loan
[9] The Central Bank of Mongolia
[10] BoM rate 1USD=3,553.58MNT

Unexpected results

Guiding questions:
- Were there any unintended or emerging outcomes during implementation?
- Any positive or negative results?

One of the most notable emerging outcomes of the Programme was the creation of a new and sustained demand for ISO 50001 services, energy audits, and climate-finance-related training among MSMEs and local service providers. Although the Programme originally aimed to improve MSME energy performance, it unintentionally stimulated the development of an entirely new skills and services market in Mongolia. During implementation, demand from loan applicants led to more institutions and consultants entering the market. Several women-led consulting firms also strengthened or expanded their service offerings as a direct result of the Programme engagement (GAP Output 3).

As interest grew, banks began requesting internal staff capacity-building on climate risk and green lending approaches, while business associations invited trainers to deliver sector-wide workshops on energy efficiency and climate finance (Programme Output 2). Loan officers training exceeded by more than 500% vs its final target. At the same time, consulting firms expanded their service offerings to meet rising expectations from new clients who had learned about the Programme's technical requirements. As a result, demand for these services spread well beyond the Programme's direct beneficiaries.

Green loans targeting MSMEs often aim not only to improve energy efficiency but also to strengthen business sustainability and growth.

Interview highlights (Khovd loan):
The beneficiary noted that the loan created a solid foundation for business expansion and job creation. By improving operational efficiency and reducing key expenditures, the enterprise was able to stabilize its finances and establish the necessary conditions to hire additional employees and scale up its activities.

The Programme demonstrates the tangible, real-world impact on household energy costs. It provides concrete evidence that energy-efficient investments can generate substantial financial savings, complementing quantitative metrics such as energy use reduction or projected GHG emission reductions.

Interview highlights (Khuvsgul loan):
Borrower reported a significant reduction in monthly heating expenses after receiving the loan. According to the interview, the local company's heating cost dropped dramatically—from 30 million MNT per month to only 3 million MNT—demonstrating a substantial efficiency gain and clear financial savings resulting from the energy-efficient upgrade. They reported that the loan triggered the local business to apply energy efficiency for their next building that had been planned, meantime it was one of the important lessons learned – not to make the buildings wide and big – but to be in a good enough of size to maintain the operation efficiently.

Impact, Sustainability and Evidence Traceability

Sustainability is assessed both under replication and scalability and as a distinct post-Programme consideration.

The Programme's direct impact is demonstrated through GHG emission reductions, energy savings, MSME access to green finance and women-led MSME participation. Its institutional impact is demonstrated through strengthened green lending capacity, loan officer training, technical appraisal processes, GHG accounting practices and continued use of green finance products after Programme completion.

Sustainability is supported by XacBank's continued green lending, wider financial-sector interest in green finance and Mongolia's policy direction. However, sustainability remains partly dependent on affordable capital, technical assistance, MRV capacity, borrower demand, technology quality and policy support. Future programmes should be explicit regarding post-programme financing strategies, MRV continuation plans and technical assistance exit strategies.

Evidence basis for key findings

Key finding	Main evidence used	Conclusion / recommendation linkage
Programme relevance to Mongolia's climate finance and MSME needs.	Funding Proposal, FAA, national policy documents, NDC context, Programme design, stakeholder interviews.	Maintain alignment with NDC, Green Taxonomy and sustainable finance priorities.
Strong mitigation results and achievement of several targets.	Loan portfolio data, RMF, APRs, GHG and energy-savings calculations.	Strengthen MRV and data systems for future reporting quality.
Women-led MSMEs were meaningfully reached.	GAP, gender-disaggregated loan data, RMF/GAP indicators, interviews and case studies.	Move from participation targets toward gender-transformative support.
TA supported capacity, awareness and monitoring.	TAF records, training data, case studies, technology assessment records and interviews.	Treat TA as a core element of future green lending programmes.
Some indicators were not fully verifiable.	RMF review, APR review, GAP review and limitations analysis.	Define indicator ownership, data collection and verification procedures at design stage.
Replication and scalability potential is strong, but affordability remains important.	Continued XacBank green lending, market information, interviews and policy context.	Combine concessional capital, TA, MRV and policy alignment for scale-up.

Conclusion

The evaluation demonstrates that the program has delivered substantial achievements across financial mobilization, institutional capacity building, awareness-raising, and emissions reduction outcomes.

Relevance

The program's objectives, mobilizing financing for EE and RE projects, building institutional capacity, raising awareness, and reducing emissions are highly aligned with national climate priorities and the Green Climate Fund's mandate. The strong demand for eco-loans and extensive training of loan officers demonstrate that the interventions addressed genuine market and institutional needs.

Effectiveness

Targets were largely met or exceeded across financial mobilization (127%), capacity building (544%), and awareness-raising (208% MSME outreach; 100% case studies published).
Certain indicators (i. Number of SMEs who reach out to XacBank about participating; ii. Number of loan inquiries (regardless of ultimate acceptance); iii. Aim for 50% of company inquiries from women-led SMEs, adjust gender- targeted marketing based on if these goals are achieved) could not be verified.

Efficiency

As per APR and final report, the volume of total financing reached $76.2 million USD. On RMF the Programme surpassed its total financing goal by 27%. However, GCF financing of $21,391,647.69 USD used for funding 154 loans, Co-financing (GCPF, ADB, EBRD+DWM) of $54,831,713.00 USD used for 172 loans. Accordingly, financing of 172 loans may be considered as parallel financing[11].

The program leveraged resources effectively, achieving significant overperformance in training and outreach relative to planned inputs. However, gaps in data verification (e.g., website analytics, loan inquiries) highlight inefficiencies in monitoring systems. Strengthening data management would improve cost-effectiveness and reduce reporting risks.

Gender Equity

The evaluation confirmed that gender-sensitive approaches were embedded in training and outreach, ensuring inclusive participation. Women entrepreneurs and female loan officers were actively engaged, contributing to equitable access to eco-finance opportunities and strengthening gender mainstreaming in climate action.

Country Ownership

The program demonstrated strong national ownership, with local institutions—particularly XacBank—taking leadership in financing, training, and outreach. The alignment with Mongolia's climate priorities and integration into institutional systems underscores the program's embeddedness and sustainability within the country context.

Innovation

---

[11] *Parallel financing according to the GCF policy on co-financing refers to the financial resources that flow alongside GCF funds to a project, but which are not required for the implementation of the GCF-funded activity, and which are earmarked for other outcomes and may be consistent with general mitigation and adaptation measures. IRMF RESULTS HANDBOOK, Dec 2022. Annex 2: Indicator reference sheets – mitigation and adaptation. Core Indicator 1, footnote 6, Page 40*

The introduction of eco-loan products, coupled with the use of a GHG emissions calculation platform and standardized emission factors, reflects innovative practice in climate finance. These tools enhanced transparency, credibility, and methodological rigor, setting a precedent for future green lending initiatives.

Replication and Scalability

The significant overachievement in training loan officers (544%) and broad MSME outreach (208%) demonstrate strong potential for replication and scale-up. The program's design and results provide a model that can be extended to other financial institutions and sectors, amplifying impact beyond the initial scope. The Programme's blended-finance model, combining concessional GCF capital with commercial bank resources, proved replicable and scalable across Mongolia's financial sector. It established a blueprint for green lending that other banks have since adopted, supported by the national Green Taxonomy and Bank of Mongolia policies.

Unexpected Results:

While initially focused on MSME energy performance, the Programme unintentionally stimulated an entirely new market for energy audits, ISO 50001 services, and climate-finance training. This systemic change extended well beyond the original scope, amplifying impact and creating new opportunities for service providers.

Lessons Learned

The Programme generated lessons for future GCF-supported MSME green finance interventions, especially those involving financial intermediation, blended finance, technical assistance, gender-responsive finance and climate impact monitoring.

Blended finance can work for MSME green lending when it directly addresses affordability barriers and is delivered through an institution with an existing lending platform.

Technical assistance is essential for green lending because borrowers and loan officers need practical support on technology options, energy savings, GHG accounting and eligibility requirements.

Loan officer capacity is critical for scaling green finance, especially outside Ulaanbaatar and among MSMEs that require guidance to access climate finance.

Gender targets can improve women-led MSME access to climate finance, but future programmes should also address collateral, technical readiness, business scale and access to larger investments.

Energy efficiency was easier to scale than renewable energy. Renewable energy lending may require targeted instruments, longer tenors, guarantees, grants or aggregation models.

MRV systems and indicator ownership must be designed from the beginning. Data on inquiries, outreach, gender-disaggregated demand and digital engagement should be consistently collected and verifiable.

Sustainability requires more than continuation of loan products; it also requires affordability, technical capacity, MRV continuation, borrower demand and policy support.

Green Climate Fund
Department of Monitoring,
Evaluation and Learning (DMEL)
OCSIO.DMEL@gcfund.org