

Corporate Unit Evaluation

Central Project Evaluation

KNOWING WHAT WORKS

Central project evaluation

Energy-Efficient Building Refurbishment, Mongolia

Project number 2018.2119.8

Evaluation Report

On behalf of GIZ by Hamid Mehinovic (Danish Energy Management A/S) and Batsugar Tsedendamba (independent consultant)

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The Evaluation Unit commissioned external independent evaluators to conduct the evaluation. This evaluation report was written by these external evaluators. All opinions and assessments expressed in the report are those of the authors.

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Abbreviations

BMZ	German Federal Ministry for Economic Cooperation and Development
CD	capacity development
DAC	Development Assistance Committee
EE	energy efficiency
EEP	Energy-Efficient Building Refurbishment in Mongolia Project
ERC	Energy Regulatory Commission
FGD	focus group discussion
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GRB	gender-responsive budgeting
HCD	human capacity development
LEEAP	Local Energy Efficiency Action Plan
M&E	monitoring and evaluation
MCUD	Ministry of Construction and Urban Development
MNT	Mongolian tögrög (local currency)
MoE	Ministry of Energy
MoF	Ministry of Finance
MUB	Municipality of Ulaanbaatar
NAOG	National Academy of Governance
NEEAP	National Energy Efficiency Action Plan
OECD	Organisation for Economic Co-operation and Development
PIM	Public Investment Management
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal
TC	technical cooperation
ToC	theory of change
TRC	Training and Research Centre



The project at a glance

Mongolia: Energy-Efficient Building Refurbishment

Project number	2018.2119.8
Creditor reporting system code(s)	23183 – Energy saving and energy efficiency (100%)
Project objective	The governance capacity of the Municipality of Ulaanbaatar for the integration of energy efficiency into the construction sector is strengthened.
Project term	January 2019 - December 2021
Project value	€8,149,928 (of which €3,649,928 is co-financed by the Swiss Agency for Development and Cooperation, SDC) ¹
Commissioning party	German Federal Ministry for Economic Cooperation and Development (BMZ), Swiss Agency for Development and Cooperation (SDC) as co-financier
Lead executing agency	Ministry of Energy, Municipality of Ulaanbaatar (MUB)
Implementing partner organisations (in the partner country)	Ministry of Energy, Municipality of Ulaanbaatar (MUB)
Other development organisations involved	Swiss Agency for Development and Cooperation (SDC)
Target group(s)	(i) Technical and management staff of the Municipality of Ulaanbaatar and the Energy Regulatory Commission and downstream institutions, (ii) private sector professionals and executives, (iii) socially vulnerable population of the ger district in Ulaanbaatar
Development cooperation (DC) programme	Energy Efficiency in Mongolia
Implementing organisations of the DC programme	Kreditanstalt für Wiederaufbau (KfW), Physikalisch-Technische Bundesanstalt (PTB), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Organisation responsible for implementing and coordinating the DC programme	Kreditanstalt für Wiederaufbau (KfW)

¹ On top of the BMZ and SDC funding, partner organisations committed to contribute a total of 30 expert months, meeting facilities, office space for GIZ personnel. Municipality of Ulaanbaatar's investment contribution for the renovation of the building, all together initially estimated at EUR 705,000 (GIZ, 2018).

1 Evaluation objectives and questions

This chapter aims to describe the purpose of the evaluation, the standard evaluation criteria and additional stakeholders' knowledge interests and evaluation questions.

1.1 Evaluation objectives

Central project evaluations of projects commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) fulfil three basic functions: they support evidence-based decisions, promote transparency and accountability, and foster organisational learning within the scope of contributing to effective knowledge management. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH structures the planning, implementation and use of evaluations, so that the contribution of it is optimised to the evaluation process and the evaluation findings (GIZ, 2018a).

1.2 Evaluation questions

The project is assessed on the basis of standardised evaluation criteria and questions to ensure comparability by GIZ. This is based on the [Organisation for Economic Co-operation and Development \(OECD\)/Development Assistance Committee \(DAC\)](#) evaluation criteria (updated 2020) for international cooperation and the [evaluation criteria for German bilateral cooperation \(in German\)](#): **relevance, coherence, efficiency, effectiveness, impact and sustainability**.

Specific assessment dimensions and analytical questions have been derived from this framework. These form the basis for all central project evaluations in GIZ and can be found in the **evaluation matrix** (Annex). In addition, contributions to the 2030 Agenda for Sustainable Development and its principles are taken into account as well as cross-cutting issues such as gender, the environment, conflict sensitivity and human rights. Also, aspects regarding the quality of implementation are included in all OECD/DAC criteria.

Table 1: Knowledge interests by main evaluation stakeholder groups

Evaluation stakeholder group	Knowledge interests in evaluation/additional evaluation questions	Relevant section in this report
GIZ Evaluation Unit	As BMZ is phasing out its activities in Mongolia by 2023, the following questions arise: Does a concrete follow-on project proposal need to be developed? Does the evaluation team still see this recommendation as a general/high-level recommendation?	Follow-on project
Partners and beneficiaries	How were unintended results/changes identified, measured, documented and reported?	Included in impact criterion
SDC, co-financier	As SDC is phasing out of its activities in Mongolia, the following questions arise: Does a concrete follow-on project proposal need to be developed?	Follow-on project
Key partners	Was the project transparent in terms of financial efficiency? Please explain the transfer of ownership of activities, processes, tools, etc. from the project to the key partners?	Included in sustainability criterion
FMB	To what extent could the project be continued/integrated into German and/or regional programmes and how?	Included in impact criterion, follow-on project

2 Object of the evaluation

This chapter aims to define the evaluation object, including the theory of change and results hypotheses.

2.1 Definition of the evaluation object

Mongolia is characterised by extreme climatic conditions with short summers and long, extremely cold winters. Of the country's 3.2 million inhabitants (2019), 1.5 million live in the capital, Ulaanbaatar. At present, the population in the ger districts² is estimated to be around 800,000, 52% of whom are female³.

Mongolia's increasing demand for energy and its hazardous air pollution, which affects the health of its population, is putting pressure on the government to take energy conservation seriously. Energy efficiency features prominently in Mongolia's National Green Development Plan, which was approved by Parliament in June 2014. The government's National Green Development Plan states that the government will increase investment in energy efficiency and green development by 2% of GDP annually for an unspecified number of years.

The Municipality of Ulaanbaatar (MUB) gives special priority to the topic of energy efficiency due to the link between a more efficient use of energy in buildings and its effect on health, comfort and air quality. Increasing energy efficiency is a key objective of the Green Development Strategic Action Plan for Ulaanbaatar 2020. The city can also draw on existing national policy documents and regulations such as the Energy Efficiency Act passed by parliament in November 2015 or the National Energy Efficiency Plan passed in September 2017.

Derivation of the module objective: As it is responsible for managing municipal investment in public buildings, MUB can create favourable conditions for improving energy efficiency in public and private buildings by improving its public investment management through the promotion of good governance and transparency, thereby enabling citizens, especially children in the ger districts of Ulaanbaatar, to access better education and health facilities, leading to better air quality and health as well as reduced heating needs and costs. However, it needs support to cope with its role in integrating energy efficiency into the construction sector and to introduce governance-related procedures and innovative technical knowledge (core problem).

As part of the development cooperation programme Energy Efficiency in Mongolia and on behalf of BMZ, GIZ has been implementing in close collaboration with MUB the project Energy-Efficient Building Refurbishment in Mongolia (EEP, PN 2018.2119.8). The project ran from January 2019 to December 2021. It had a budget of €8.149.928, of which €3,649,928 was provided by the Swiss Agency for Development and Cooperation (SDC). This project is the focus of this evaluation.

The project objective is: 'The governance capacity of the Municipality of Ulaanbaatar for the integration of energy efficiency into the construction sector is strengthened'. EEP consisted of the following four components:

- Component 1: Public Investment Management (PIM)
- Component 2: Local Energy Efficiency Action Plan (LEEAP)
- Component 3: Private Sector Involvement in Energy Efficiency (EE)
- Component 4: Thermo-Technical Refurbishment of Public Buildings (TTR)

² Ger districts are underdeveloped urban areas; 60% of the population of Ulaanbaatar lives in traditional gers.

³ National Statistics Office of Mongolia, 2021

EEP was a follow-on from the predecessor project, the Energy Efficiency in Grid-connected Energy Supply project (ENEV 3), which ran from 2014 to 2017. Like the current project, it was co-funded by BMZ and SDC and implemented by GIZ. The first phase of the Public Investment in Energy Efficiency project (PIE1), which was an integral part of ENEV 3, was designed to demonstrate how decentralised public funds can be utilised for investment to improve energy efficiency in public buildings. PIE1 was implemented in the provinces Zavkhan and Khovd. ENEV 3 had the following component objectives:

- Outcome 1: Compliance with budget and procurement laws relating to capital investments at local level has improved.
- Outcome 2: Improved energy efficiency of public buildings in Khovd and Zavkhan aimags
- Outcome 3: Public institutions, companies and households have intensified efforts and increased investments in energy efficiency and energy conservation.

2.2 Results model including hypotheses

The project's theory of change (ToC) was well formulated and outlined problems requiring intervention, target groups and institutions, key actions, its expected results, outputs and long-term changes, and key assumptions. The ToC was also well reflected in the results model, which mapped out in detail the links between key activities, their results and partner inputs and where the project delivered its results and achieved its objectives and overarching goals.

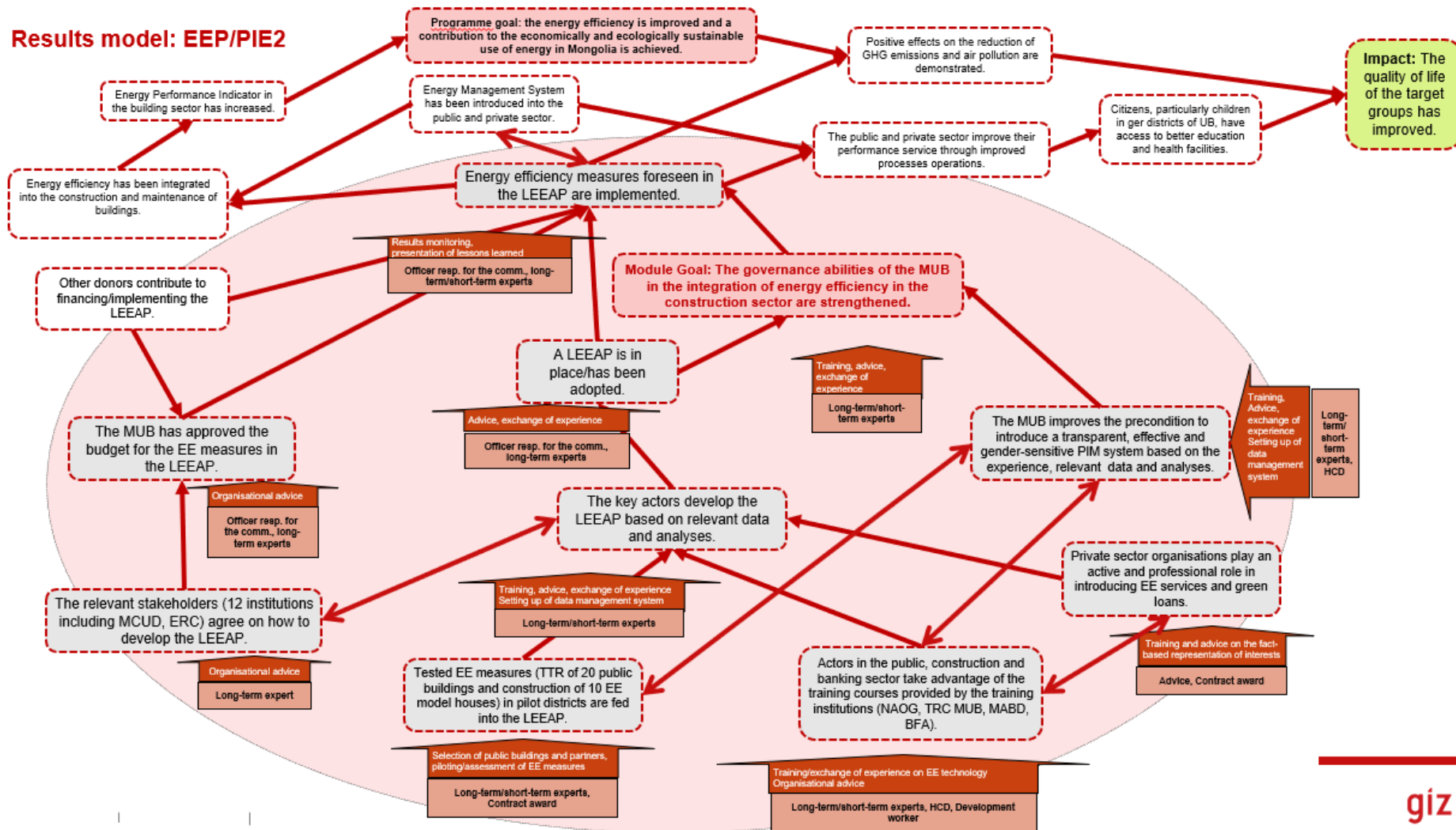
The ToC and the results model, including its results hypotheses (one per output), are relevant and accurate, which is why the results model and hypotheses were used for the evaluation.

- **Component 1: Public Investment Management (PIM) – Output 1.** The skills needed to manage public investment efficiently are not yet sufficiently developed in the Municipality of Ulaanbaatar (MUB). As a result, the preparation, planning, execution, acceptance and maintenance of construction projects and the associated budgeting are inadequate. For example, the evaluation mission revealed that due to the lack of proper guidelines for PIM and lack of capacity in districts' refurbishment budgets, public funds were allocated unevenly (more centrally located schools with strong leadership from the principal received more funding, sometimes several years in a row, while some remotely located schools failed to receive funding for refurbishment at all) and were not based on needs. **In particular, there is a lack of guidelines for the transparent and effective management of public investments. This also includes gender aspects. In addition, there is a considerable need to integrate the issue of energy efficiency into the municipality's administration process documents (e.g. guidelines for the preparation of construction plans).** Therefore, the main activities of the project were: a) the development of guidelines for transparent, effective and gender-sensitive public investment management within the municipality and the use of these guidelines as a pilot in the retrofitting of buildings in the education sector, b) the provision of advice to MUB on the integration of EE into the process of selecting, planning, tendering, financing, constructing and accepting construction work for public buildings, c) the increase of the capacity of MUB and downstream agencies by providing training and consultation on these new guidelines. **Hypothesis 1** (with elaboration from the evaluation team) is that by integrating the PIM guidelines into MUB's public investment process by adopting and revising regulations at respective authorities and by increasing the capacity of MUB staff to apply these guidelines by institutionalising training at the NAOG and Training and Research Centre (TRC), the municipality will make investment decisions on the basis of guidelines for transparent, effective and gender-sensitive management and will integrate EE.
- **Component 2: Local Energy Efficiency Action Plan (LEEAP) – Output 2.** Mongolia approved its Law on Energy Saving in 2015 and its National Program on Energy Saving 2018–2022 in 2017. The law requires the office of the local governor to develop and plan a policy on energy saving to be

implemented in cooperation with the respective organisations. A Local Energy Efficiency Action Plan (LEEAP) was required for the targeted planning of EE measures in the construction sector, which includes measures at institutional, organisational, technical and financial level. As an organisation responsible for planning and implementing the EE action plan, the ERC aims to strengthen its capacity to develop a Local Energy Efficiency Action Plan (LEEAP). The main activities of the project were a) building the capacity of the ERC and the municipality by providing technical, process and organisational advice and b) conducting a study on financing options for LEEAP to ensure its sustainability and secure the financial viability of the measures. Based on the progress made by the working group, capacity building and study outputs, **hypothesis 2** is that the city administration will be able to better plan its EE measures, adopt LEEAP and establish a dedicated unit for its implementation to mainstream EE in the construction sector in Ulaanbaatar.

- **Component 3: Public Sector Investment in Energy Efficiency (EE) – Output 3.** For the introduction of EE measures in public and private buildings, MUB must be in a position to draw on know-how and EE technologies provided by the private sector. However, relevant actors in the private sector still do not have enough capacity to introduce EE measures. In particular, actors in the construction industry (such as architects, technicians, workers and companies involved in the construction work and the production of building materials) lack specific know-how on EE. For its part, the Mongolian financial sector cannot adequately assess the eligibility of loan applications for EE construction measures because there are no specific criteria for EE. This is why the project aims to improve the expertise of relevant actors in the private sector. The main activities in this respect were: a) the development by EEP of training activities dedicated to actors in the construction sector by stakeholders, b) the development of criteria for energy-efficient houses in loan applications and the training of financial sector workers by professional associations, c) the development and piloting of an energy-efficient housing loan scheme by EEP.
- **Hypothesis 3** is that the capacity of private sector actors regarding energy efficiency measures will be improved and the integration of energy efficiency measures into financial products through training (institutionalised in the relevant stakeholder organisations to ensure greater sustainability) and pilot loan projects will allow MUB to draw on an improved range of services for energy efficiency technologies and to have access to an adequate range of financial instruments, which will enforce the implementation of LEEAP and mainstream the energy efficiency in the construction sector in Ulaanbaatar.
- **Component 4: Thermo-Technical Refurbishment of Public Buildings (TTR) – Output 4.** As energy efficiency is an emerging topic, there is a lack of practices relating to the energy-efficient renovation of existing public buildings (such as schools and playschools) and for the realisation of energy-efficient model houses. For this reason, energy efficiency technologies should be introduced and applied in ger districts through pilot schemes. The main activities in this respect were: a) the energy-efficient retrofitting of 20 public buildings and b) the construction of new energy-efficient model houses in ger districts. **Hypothesis 4** is that energy-efficient technologies will be introduced by retrofitting 20 public buildings, developing standardised renovation plans – both of which will be used by MUB to replicate and integrate energy-efficient refurbishment in public buildings – and constructing energy-efficient model houses, which will be used for piloting the energy-efficient housing loan scheme developed and delivered by the financial institutions. During these piloting processes, the capacity of actors was improved, the experience gained from piloting was applied to the integration of energy efficiency into PIM guidelines and the development of LEEAP, and relevant construction standards and guidelines were communicated by the experience gained in these piloting activities and updated accordingly.

Figure 1: Current results model (May 2021)



According to the project staff interviewed and SDC, the identified risks in the module proposal (Nov. 2018) were managed effectively. However, the COVID-19 pandemic and the frequent elections in the country were unexpected risks. The pandemic caused certain project activities to be delayed or restructured (for example, travel restrictions and fewer study tours than originally planned hampered the implementation of activities by international tenders/consultants, which forced the project team to hire local (limited) expertise). For the implementation of pilot activities (Output 4), the MUB had to allocate financial resources to the energy-efficient refurbishment of buildings. Due to COVID-19, these funds were not allocated as expected. The risk of transparency and corruption was mitigated by the project by introducing and developing Public Investment Management criteria (Output 1). The project communicated regularly with the partner organisation, conducted awareness-raising campaigns, developed capacity, actively monitored implementation risks, and improved the cooperation culture with partners.

Unintentional effects were not expected at the project planning stage, which is why there was no systemic approach to monitoring these effects. Once an unintended effect occurred, it was then monitored and documented. In order to avoid or mitigate unexpected emerging effects, the different interests of the stakeholder groups within the scope of the project activities were analysed and do-no-harm analyses carried out at the beginning of the project. The TC measure actively worked to reconcile interests and transparent decision processes.

3 Evaluability and evaluation process

This chapter aims to clarify the availability and quality of data and the process of the evaluation.

3.1 Evaluability: data availability and quality

This section covers the following aspects:

- availability of essential documents,
- monitoring and baseline data including partner data, and
- secondary data.

Availability of essential documents

All central documents were available to the evaluation team. The project modification offer was in German, but the EEP project team supported the evaluation team by providing a translation and clarification of specific parts of the document.

Monitoring and baseline data including partner data

The project's results-based monitoring system and partner data

The project uses the Results Monitor, GIZ's web-based monitoring tool. This tool monitors outcome indicators, output indicators, a comparison of planned and achieved values, key risks and assumptions, results hypotheses, activities and the need for action for each indicator. The online tool is regularly updated and verified.

The data sources for the measurement of indicators are:

- partners' reports,
- administrative documents,
- administrative data and
- case study reports provided by stakeholders.

The project rarely collected data for the specific purpose of monitoring and evaluation, relying instead on administrative reports and data from public partners and activity reports from implementing partners. However, interviewees from MUB did not mention specific datasets that were used for evaluation purposes.

The evaluation team verified that all other relevant data sources from partners, such as the National Academy of Governance, the Mongolian Banking Association, the Energy Regulatory Commission, the Training and Research Centre of Ulaanbaatar, the Construction Development Centre, the Education Agency of MUB, the Air Pollution Control Agency, etc. were documented. These partner organisations provided data during the evaluation mission, such as training and other capacity-building activities, attendance disaggregated by gender, changes in attendees' knowledge disaggregated by gender, changes in energy consumption, air quality of refurbished schools and kindergartens, data and qualitative analysis that can explain the impact, effectiveness and sustainability of the project and demonstrate unintended results and outcomes of the project in order to provide a comparative stakeholder perspective.

Baseline data

According to the Project Module Proposal and the Module Impact Matrix attached to it, only the project goal indicators' baseline value was measured on the basis of reports and statistics from partners, such as the Energy Regulatory Commission, the Ministry of Energy. No other baseline data was identified during the evaluation mission.

Secondary data

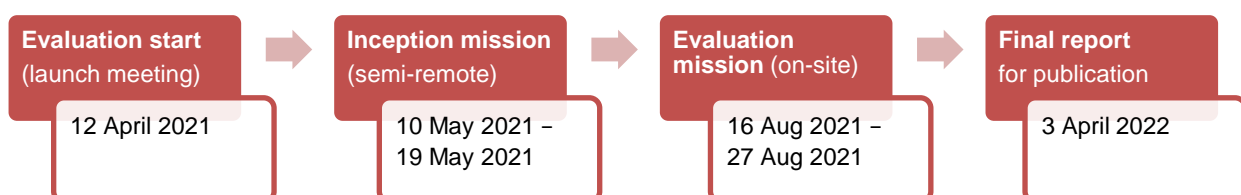
The evaluation relied on administrative data from implementing partners (ERC, MUB, etc.) and other studies that were carried out within the project activities or by other stakeholders.

3.2 Evaluation process

This section covers the following aspects:

- milestones of the evaluation process,
- involvement of stakeholders,
- selection of interviewees,
- data analysis process,
- roles of international and local evaluators and
- (semi-)remote evaluation.

Figure 2: Milestones of the evaluation process



Involvement of stakeholders

The EEP project had an enormous number of stakeholders at various levels of engagement. For this reason, the identified stakeholders were involved in the evaluation mission so that their perspective on the project's achievements and the lessons learned could be noted to ensure the quality of evaluation results. The partners and stakeholders relevant to the effectiveness, efficiency, impact, sustainability and ownership of the project outcomes were actively involved throughout the evaluation process.

Selection of interviewees

The evaluation team identified the most relevant stakeholders for interview to ensure the scope of the evaluation mission was feasible in terms of the allocated timeframe and resources.

In addition to the triangulation of data from internal and external sources, data was triangulated across experts. While the project staff proposed and provided contact details for relevant internal stakeholders, the evaluation team mainly selected interview partners from the external stakeholders' category. This compensated for any possible bias on the part of project staff members and made the selection as objective as possible, as the selection of interviewees strongly influences statements about the project.

Interviewees from partner organisations and stakeholders were selected on the basis of the following criteria:

Table 2: List of evaluation stakeholders and selected participants

Organisation/company/ target group	Overall number of persons involved in the evaluation (including gender disaggregation)	Number of interview participants	Number of focus group participants	Number of workshop participants	Number of survey participants
Donors	Total: 3 (F=1, M=2)	3	0	0	0
BMZ SDC					
GIZ	Total: 7 (F=4; M=3)	7	0	0	0
EEP project team					
Partner organisations (direct target group)	Total: 14 (F=3, M=11)	14	0	0	0
Ministry of Energy, MUB, Governor's Office, Municipality of UB - Mayor's Office, Energy Regulatory Commission, Construction Development Centre, Education Agency of MUB, Investment Department of Capital City, Procurement Agency of Capital City, Songinokhairkhan District Governor's Office, Bayanzurkh District Governor's Office					
Other stakeholders (e.g. public actors, other development projects)	Total: 7 (F=6, M=1)	7			
UNDP, NAMA project, GERES, SWITCH project, WB, MASAM project, TAF, Urban Governance project, GGGI, National Committee on Gender Equality, Ministry of Finance					
Civil society and private sector actors	Total: 6 (F=5, M=1)	6			
Mongolian Banking Associations Banks participating in EE housing loan pilot programme					

Organisation/company/ target group	Overall number of persons involved in the evaluation (including gender disaggregation)	Number of interview participants	Number of focus group participants	Number of workshop participants	Number of survey participants
Mongolian Sustainable Finance Association Mongolian Association of Construction Designers Mongolian Green Finance Corporation					
Universities and think tanks	Total: 3	3			
National Academy of Governance, Training and Research Centre of Ulaanbaatar, Mongolian Banking Finance Academy					
Final beneficiaries/ indirect target groups (sum)					
Parents of students at target schools and kindergartens	Total: 4 (F=3, M=1)	0	4	0	0
Teachers and staff at the target schools	Total: 10 (F=7; M=3)	0	10	0	0
District officers who attended PIM training	Total: 2 (F=2; M=0)	0	2	0	0
Construction sector workers who attended EE training	Total: 10 (F=5; M=5)	0	10	0	0
Households that participated in the EE housing loan pilot programme	Total: 4 (F=2; M=2)	4	0	0	0
Note: F = female; M = male					

Data analysis process

All respondents (interviews, focus group discussions (FGDs)) were interviewed. During the interview process, notes were taken and, where permission was given, interviews were recorded. Thorough desk analyses of the documents and data provided by the partners and stakeholders were carried out to validate or enforce the interview findings. No software was used for the qualitative data analysis.

Collected data and documents were analysed on the basis of the framework in the evaluation matrix, which itself derives from the theory of change and Results Model.

Roles of international and local evaluators

The evaluation team consists of two members – one international and one local evaluator. The GIZ project team assisted at various points in the individual process steps: in identifying relevant stakeholders and interviewees, in contacting and recruiting respondents (stakeholders, beneficiaries, target groups) for interviews, FGDs, logistical arrangements, etc. and in obtaining relevant data from partner organisations for project evaluation.

The principal task of the local evaluator was to support the on-site preparation of the mission, on-site data collection (including making data from the partner system available for the evaluation) and reporting. The local

evaluator delivers his/her work results to the international evaluator, who is responsible for the process and the products.

(Semi-)Remote evaluation (if applicable)

Due to COVID-19 travel restrictions, the evaluation team conducted a semi-remote evaluation. Both evaluators conducted online interviews. The local evaluator also conducted a number of physical interviews. At the end of each day, the information was shared, discussed and triangulated by the two evaluators and a strategy was drawn up for the interviews to be held on the following day.

4 Assessment according to OECD/DAC criteria

This chapter focuses on the findings and assessment of the OECD/DAC criteria.

4.1 Impact and sustainability of predecessor projects

There was one predecessor project co-funded by BMZ and SDC. Like this project, the predecessor project consisted of two interconnected sub-projects from both funders.

Firstly, as indicated in the ToR, this evaluation focuses on the EEP project. Inclusion in the evaluation of PIE1, which was an integral part of the predecessor project, would have increased the volume of work, which would have limited the team's ability to focus on the EEP evaluation and the resources it could devote to it. The predecessor project was implemented in rural Mongolia, where circumstances may vary. Moreover, its sustainability and impact are not directly linked to this project at the public partners' level. For this reason, no predecessor project is part of the evaluation of this project, which ended in late 2021 but was extended until the end of March 2022.

4.2 Relevance

This section analyses and assesses the relevance of the EEP.

Summarising assessment and rating of relevance

Table 3. Rating of OECD/DAC criterion: relevance

Criterion	Assessment dimension	Score and rating
Relevance	Alignment with policies and priorities	30 out of 30 points
	Alignment with the needs and capacities of the beneficiaries and stakeholders	30 out of 30 points
	Appropriateness of the design*	18 out of 20 points
	Adaptability – response to change	20 out of 20 points
Relevance total score and rating		Score: 98 out of 100 points Rating: Level 1: highly successful

The project objectives were well aligned with national and local development policies. Most importantly, they were well aligned with the National Energy Efficiency Action Program of Mongolia 2018–2022, which was praised by the key partners and acknowledged as a good basis and practice for scaling up the project’s outcomes to the provinces (Int 1, 2 with partner organisations). Essentially, every key partner organisation agreed that the project responded well to their practical needs and provided the policy support they needed. As for the beneficiaries, all 26 participants in the FGDs, who represented teachers and staff at schools and kindergartens and parents, gave the project the rating ‘5 – Most relevant’ in terms of its importance and relevance to actual needs (Foc Dis 1–4). The representatives of the households that received energy-efficient housing loans (4 households in total) also acknowledged that the project’s objective responded well to their actual needs, regardless of the fact that some of them faced and are still facing problems relating to the performance of the construction company (Foc Dis 7). In general, the relevance of the project was well demonstrated at all levels.

In total, the relevance of the project is rated as Level 1: highly successful, with 98 out of 100 points.

Analysis and assessment of relevance

Relevance – Dimension 1: Alignment with policies and priorities

This dimension is assessed on the basis of the relevance of the EEP’s objective to the national development policy framework and priorities, partner policies at local and sectoral (energy and construction sectors) levels and the donors’ strategies.

The objective of EEP corresponds to the development challenges, specific objectives and principles of implementation of the national development policies set out in the Mongolia Sustainable Development Vision 2030 and Vision 2050, a long-term development policy for Mongolia.

- The EEP objectives aim to help overcome the following development challenges identified in Vision 2050: Long-Term Development Policy of Mongolia, namely poor governance and inconsistent policies, rapid urbanisation, poor and incompetent infrastructure development and environmental challenges (Vision 2050, 2019). Based on the analysis of developmental challenges and opportunities, Vision 2050 sets out nine priority area for the long-term development of Mongolia. The EEP objectives are directly and indirectly relevant to the areas ‘human development’ (through its contribution to the education sector), ‘quality of life and middle class’ (through its contribution to the living conditions of those living in ger districts), ‘governance’ (through its contribution to the promotion of better public investment management) and ‘green development’ (through its contribution to introducing EE policy and planning practices, EE technologies and practices in the construction sector in Ulaanbaatar and its contribution to standards and policies in the construction sector).
- Although the EEP’s objectives are relevant to the objectives set out in the development policy frameworks, however, it has direct relevance to the following objectives:
 - With objective 2.1 of Vision 2050 (to provide equal opportunity to receive a quality education, to establish education as a basis for personal development, family security and the country’s development and to strengthen the life-long education system), the government aims to perfect funding for education organisations and to create an equitable and accessible environment for quality education services by improving the infrastructure of educational organisations at all levels to the standard and quality required.
 - Objective 2.5 of Vision 2050 (to create a healthy, comfortable, and favourable living environment and ensure safe food provision) sets out activities that will help the city to meet standards for housing and city greenery and create a healthy and safe environment, to reduce air, water and soil pollution and noise levels and to create a clean and green environment.

- Objective 3.2 of Vision 2050 (to create conditions for providing affordable housing fit to the needs and purchasing power of households) describes the development of a sustainable policy and financial support system for introducing green housing and the affordable housing finance system.
- Moreover, EEP's objectives are also in line with Objective 6.4 of Vision 2050 (to contribute to international efforts to mitigate climate change by developing a low-emission, productive and inclusive green economy). In addition to the relevance of EEP to the specific objectives of Vision 2050, the project was also aligned with the Mongolia Sustainable Development Vision 2030. This relevance was described in the project's module proposal.

Furthermore, the project objectives also showed high relevance to the local development policies of the city including the Green Development Strategic Action Plan for Ulaanbaatar 2020, the Long-Term Development Objectives of the Capital City and the Ulaanbaatar Governor and Mayor's Action Plan for 2021–2024. All the relevant authorities confirmed the relevance and importance of the project's objectives and activities in implementing the above-mentioned development policies (Int 4, 5, 7, 8 with partner organisations).

From a sectoral perspective, the project's objectives are well aligned with the current policies in the energy and construction sector. For example, all the stakeholders noted the importance of the project in relation to achieving the objectives set out in the National Energy Efficiency Action Program of Mongolia 2018–2022, which was approved in 2017, and to implementing the Law on Energy Conservation, which was approved in 2015, because Ulaanbaatar is the biggest administrative unit in Mongolia (Int 1, 2 with the partner organisations).

It was evident that the alignment of the project's objectives with the policies in the energy and construction sectors were the result of over 20 years of cooperation between GIZ and the relative ministries in these sectors, and GIZ's consistent and continuous technical assistance (promoting the legal and policy environment and providing technical support in promoting the implementation of those policies (Int 1, 2, 3 with the partner organisations). Moreover, one of the priority objectives of the energy sector policy is to reduce energy demand by promoting energy efficiency, thereby ensuring that the energy supply meets the growing demand (Int 2 with the partner organisations). This in turn also contributes to achieving the energy sector goals of Vision 2050 (Vision 2050: Long-Term Development Policy of Mongolia, 2019).

Moreover, the Ministry of Finance (MoF) also acknowledged the importance of the project's contribution to more effective public investment management and pointed out that the MoF is working to improve its PIM guidelines for more efficiency, transparency and gender responsiveness (Int 7 with other stakeholders).

Finally, energy efficiency is one of three stand-out priority areas of German development cooperation (Country Strategy for Mongolia, 2012). Also, because EEP is the latest in a series of GIZ projects in the energy sector in general and in energy efficiency in particular, it is safe to say that the EEP is of high relevance to the priority areas and objectives of the BMZ's strategy for Mongolia.

As co-funder of the project, SDC aims to contribute to the empowerment of Mongolian citizens and institutions towards an equitable, green and prosperous society, leaving no one behind (Cooperation Strategy Mongolia 2018–2021, 2017). The EEP project fits completely into the domain of governance in the cooperation strategy, responding to both the expected outcomes of 'decentralisation' and 'democratisation'. Moreover, it also corresponds to the mainstream theme of gender and governance through its focus on gender-responsive budgeting (GRB) and promotion of gender responsive policies.

Relevance dimension 1 – Alignment with policies and priorities – scores **30 out of 30 points**.

Relevance – Dimension 2: Alignment with the needs and capacities of the beneficiaries and stakeholders

The EEP was also assessed in terms of its relevance to the needs of partners (need for policy promotions, technical assistance in EE, PIM and capacity development), stakeholders (need for technical assistance and capacity development) and beneficiaries.

The project's political and implementing partners (MUB, MoE, Ministry of Construction and Urban Development (MCUD)) need to introduce EE into the construction sector in Ulaanbaatar. They also have to implement the policy demand for better standards and regulations for EE and improved regulations on public finance management to meet the demand for investment in EE.

Most public buildings in Ulaanbaatar, especially schools and kindergartens, were constructed during the Soviet times. They were poorly constructed and are characterised by high heat loss. Partner organisations all agreed that these buildings need to be refurbished to meet energy efficiency criteria (Int 4, 5, 7–10 with partner organisations). During the project implementation, partners identified 172 more school and kindergarten buildings that need to be refurbished (Int 4, 8 with partner organisations).

To meet all these practical needs, government agencies are expected to streamline policies, regulations and standards, which in turn require additional knowledge and practices to be accessible and institutional and human resource capacity development, since energy efficiency is a comparatively new field in Mongolia. For this reason, government agencies expressed the need to learn from international practices in order to ensure better regulation and policies in the field of EE (Int 1–4, 11 with partner organisations).

Capacity development (CD) of actors and experts in the sector was considered equally important. It is also important for the broader stakeholder environment, including private sector actors, professional associations and NGOs (Int 1–5 with civil society and private sector).

The project identified inhabitants of Ulaanbaatar, in particular citizens in ger districts, as a primary target group. Children in the schools and kindergartens targeted for refurbishment, their parents, teachers and households receiving loans for energy-efficient housing are direct beneficiaries of the project's activities. The primary need of children and teachers/staff in the target schools in ger districts was a healthy school environment. Due to poor building quality, the age of the buildings, high heat loss and the buildings' location in the ger district – which has the highest level of air pollution in Ulaanbaatar – there was an accumulation of risk factors for health and well-being in the buildings. Such risk factors include poor indoor air quality, mould, low indoor temperature during winter, etc. (Int 8–10 with partner organisations, Foc Dis 1, 2). Due to the lack of proper assessment and the system of allocating money from state and local budgets for school refurbishments, most schools failed to receive substantial funds to fully refurbish the buildings. This illustrated the need for a participatory, accessible and needs-oriented system for public investment in the education sector (Int 8–10 with partner organisations).

Relevance dimension 2 – Alignment with the needs and capacities of the beneficiaries and stakeholders – scores **30 out of 30 points**.

Relevance – Dimension 3: Appropriateness of the design

The theory of change (ToC), Results Model and results hypothesis were well developed and included details of activities, input from partners, intended results and a careful representation of assumptions and risks as indicated in the inception report. The assessment of the dimension focused on the way components, partners' responsibility, leadership and mutual ownership of project activities and results were interlinked.

The project design was complex because it involved a number of sectors: energy, construction, education, PIM and governance capacity at both MUB and local levels. This explains the large number of stakeholders. One of the key challenges regarding project design was to make sure that partners and stakeholders received substantial and consistent information on the overall design of the project, the activities undertaken and the

results achieved. The project also faced general communication challenges (Int 2, 8 with GIZ). Frequent elections and a high turnover in leaders and staff at partner organisations made communication even more challenging.

Some organisations were involved in the project activities under their mandate but lacked any substantial understanding of the project (Int 6 with partner organisations), whereas other partner organisations were only focused on the activities in which they were involved and were not aware of the overall policy interventions and objectives or even of activities in other outputs (Int 7–10 with partner organisations).

As the project encompasses several sectors, the leadership and ownership of the outputs and activities are distributed among key partner organisations. However, few partner organisations expressed their willingness and interest for a higher involvement in the project implementation (Int 2, 4 with partner organisations). It seems this specific design trait did not have a major effect on the implementation, as there was no evidence of it found during interviews. However, several interviewees reported that there had been a lack of communication at a certain level, especially between the components with different implementing partners. (see Section 4.4 for details).

Relevance dimension 3 – Appropriateness of the design – scores **18 out of 20 points**.

Relevance – Dimension 4: Adaptability – response to change

This dimension is assessed on the basis of the responsiveness of the project to the needs of partners and stakeholders and adaptation to the changing situation, especially COVID-19-related limitations. Any modification offers submitted during the project will also be considered. At the time of the evaluation, one modification offer had been made. It related to the increase of the overall funding of the project by 500,000 euros.

Most of the respondents praised the responsiveness of the EEP project team in planning and implementing the project activities. At the request of stakeholders, certain software and databases were developed (Int 3, 8 with partner organisations), which were not initially foreseen in the module proposal.

In cooperation with the Mongolian Banking Association and the Mongolian Sustainable Finance Association, the project modified its activity to build 26 energy-efficient homes in the ger district into a pilot project for the energy-efficient housing loan scheme.

The project made significant efforts to adapt to the COVID-19 situation in early 2020. To begin with, it developed training modules that were put into a digital, online format. In some cases, it included input from professional organisations to make sure that capacity-building activities will be continued. Secondly, online co-working software was used with stakeholders and working groups to facilitate ongoing cooperation among stakeholders (Int 1, 2 with training providers).

Relevance dimension 4 – Adaptability – response to change – scores **20 out of 20 points**.

Methodology for assessing relevance

Table 4. Methodology for assessing OECD/DAC criterion: relevance

Relevance assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Alignment with policies and priorities	<ul style="list-style-type: none"> • BMZ and SDC country strategies • alignment of the project objectives with the overarching national development vision • alignment of the project objectives with the development policy agenda of Ulaanbaatar • a degree of coherence with existing frameworks (the Energy Saving Law and the National Energy Efficiency Action Plan (NEEAP)). 	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> • interviews with political and implementing partners, stakeholders • comparative document review of relevant policy documents 	<ul style="list-style-type: none"> • As energy efficiency is new to Mongolia (the law was only adopted in 2015), understanding among stakeholders, the volume of available documents and report data can be limited. • Due to changes in government and possible upcoming political events, the response rate from government stakeholders can be low.
Alignment with the needs and capacities of the beneficiaries and stakeholders	<p>As EE is a new topic in Mongolia and because there was no prior integration of EE into PIM and the construction sector, institutional and professional capacity is weak. For this reason, there is a strong need to develop stakeholder capacity and to strengthen, support, plan and institutionalise policy development. The following aspect was assessed with regards to alignment:</p> <ul style="list-style-type: none"> • the need to integrate EE into PIM, development priorities and the policy environment • the need for public investment and EE in public education buildings • the needs of partners and stakeholders in capacity-building activities • the need to institutionalise EE in the public and private sector 	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> • interviews with political and implementing partners, stakeholders, • comparative document review of relevant documents 	<ul style="list-style-type: none"> • Potential lack of data on sectoral capacity in implementing and integrating EE into the construction sector
Appropriateness of the design	ToC and Results Model and their responsiveness to the risks and assumptions, and results hypothesis	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p>	No major limitations

Relevance assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
		<ul style="list-style-type: none"> interviews with political and implementing partners, stakeholders comparative document review of relevant project documents. 	
Adaptability – response to change	<p>One official modification offer exists from 2019. Few activities were modified during the project implementation process:</p> <ul style="list-style-type: none"> evidence-base of modification offer results orientation of modification offer needs responsiveness of the modification offer 	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews with political and implementing partners, stakeholders comparative document review of relevant documents (steering committee meeting minutes and modification offers). 	No major limitations

4.3 Coherence

This section analyses and assesses the coherence of the project. It is structured according to the assessment dimensions in the GIZ project **evaluation matrix** (see Annex).

Summarising assessment and rating of coherence

Table 5. Rating of OECD/DAC criterion: coherence

Criterion	Assessment dimension	Score and rating
Coherence	Internal coherence	45 out of 50 points
	External coherence	50 out of 50 points
Overall score and rating		<p>Score: 95 out of 100 points</p> <p>Rating: Level 1: highly successful</p>

In total, the coherence of the project is rated as **Level 1: highly successful, with 95 out of 100 points.**

Analysis and assessment of coherence

Coherence – Dimension 1: Internal coherence

Energy efficiency is one of three stand-out priority areas of BMZ's development cooperation activities (Country Strategy for Mongolia, 2012). Swiss Development Cooperation (SDC) aims to contribute to the empowerment of Mongolian citizens and institutions towards an equitable, green and prosperous society, leaving no one behind (Cooperation Strategy Mongolia 2018–2021, 2017). This evaluation report concludes that the project is

coherent with both German and Swiss development cooperation in Mongolia. Furthermore, the EEP project fits completely into the domain of governance in the cooperation strategy, responding to both expected outcomes of 'decentralisation' and 'democratisation'. Moreover, it also corresponds to the mainstream theme of gender and governance through its focus on GRB and the promotion of gender-responsive policies.

Coherence dimension 1 – Internal coherence – scores **45 out of 50 points**.

Coherence – Dimension 2: External coherence

A donor coordination group including all major donors in Mongolia was set up. The aim of this group was to meet regularly and share updates and discuss potential cooperation and coordination at project implementation level.

The project also coordinated with the following projects implemented by other donors:

- the Citizens' Budget Manual for 2020 was developed with the World Bank's Mainstreaming Social Accountability in Mongolia (MASAM) project,
- the Urban Governance Project (UGP), implemented by the Asia Foundation (TAF), was supported in its project's capacity development framework by converting offline training modules into online training modules, preparing trainers and providing training at the MUB Training and Research Centre (TRC),
- the renovation of kindergarten No. 147 with UNICEF's project Impacts of Air Pollution on Maternal and Child Health to improve children and mothers' health in Ulaanbaatar (Int_2 with Donor).

Coherence dimension 2 – External coherence – scores **50 out of 50 points**.

Methodology for assessing coherence

Table 6: Methodology for assessing OECD/DAC criterion: coherence

Coherence: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Internal coherence	<p>Assessment of the extent to which German/Swiss development cooperation is implemented</p> <p>Assessment of the extent to which the instruments of German development cooperation (technical and financial cooperation) are meaningfully interlinked within the intervention (in terms of both design and implementation)?</p> <p>Assessment of the extent to which the intervention is consistent with international and national norms and standards to which German development cooperation is committed.</p>	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> • interviews with political and implementing partners, stakeholders • comparative document review 	No major limitations were identified.

Coherence: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
External coherence	<p>The level of coherence and synergies between the objectives of German development strategies and other policies related to the cooperation:</p> <ul style="list-style-type: none"> • ownership and leadership of the action • support/contribution of the project to those actions <p>Level of cooperation with other donors' activities:</p> <ul style="list-style-type: none"> • mutual/co-financed activities • shared resources <p>Level of coordination with other donors' activities:</p> <ul style="list-style-type: none"> • information sharing/knowledge exchange through meetings, workshops • existing roles and functions of partners • other donors' projects (especially with other SDC projects) 	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> • Interviews and FGDs with political and implementing partners, stakeholders • analysis of secondary sources (country strategies, policies, development cooperation providers, etc.) 	No major limitations identified.

4.4 Effectiveness

This section analyses and assesses the effectiveness of the project. It is structured according to the assessment dimensions in the GLZ project evaluation matrix (see Annex).

Summarising assessment and rating of effectiveness

Table 7. Rating of OECD/DAC criterion: effectiveness

Criterion	Assessment dimension	Score and rating
Effectiveness	Achievement of the (intended) objectives	28 out of 30 points
	Contribution to achievement of objectives	27 out of 30 points
	Quality of implementation	20 out of 20 points
	Unintended results	17 out of 20 points
Overall score and rating		<p>Score: 92 out of 100 points</p> <p>Rating: Level 1: highly successful</p>

In total, the effectiveness of the project is rated Level 1: highly successful, with 92 out of 100 points.

Effectiveness – Dimension 1: Achievement of the (intended) objectives

Table 8: Assessed and adapted objective indicators for specific modules (outcome level)

Project's objective indicator according to the (last change) offer	Assessment according to SMART* criteria	Specified objective indicator (only if necessary for measurement or understanding)
<p>On three occasions when investing in energy efficiency measures in the construction sector, MUB applied the newly developed guidelines for transparent, effective, gender-sensitive public investment management (PIM). Base value (2018): 0 Target value (2021): 3 Current value (2021): 4 Achievement in % (2021): 133% Source: Int 4, 8 with project partners</p> <p>In cooperation with the Energy Regulatory Commission (ERC), MUB passed a Local Energy Efficiency Action Plan (LEEAP) for the construction sector in Ulaanbaatar. Base value (2018): 0 Target value (2021): 1 Current value (2021): 1 Achievement in % (2021): 100% Source: Progress report</p> <p>MUB made affirmative decisions for three energy efficiency measures foreseen in the Local Energy Efficiency Action Plan (LEEAP) for the construction sector in ger districts (city districts in the suburban as well as the outer zones of the city territory). Base value (2018): 0 Target value (2021): 3 Current value (2021): 3 Achievement in % (2021): 100% Source: Progress report</p> <p>In five cases, MUB conveyed the lessons learned from pilot measures on the integration of energy efficiency in the construction sector to other ger districts. Base value (2018): 0 Target value (2021): 5 Current value (2021): ongoing Achievement in % (2021): 0% Source: Progress report</p>	<p>All indicators pass the SMART criteria. They are specific (who, what, detail), measurable (how many – i.e. base value, documented, and accountable to specified stakeholder, partner, beneficiary), achievable (justified: number of measures, action plans, PIM, etc., have the required staff to implement and resources to meet the objective), relevant (rationale: adoption of LEEAP) and time-bound (when: not specified in the indicator directly, however, specified in the outputs – impact matrix).</p>	
<p>* SMART: specific, measurable, achievable, relevant and time-bound</p>		

The evaluation team concludes that the project objective indicators 1, 2, 3 were fully achieved by the end of the project, whereas the specified objective indicators – the newly developed guidelines for transparent, effective and gender-sensitive public investment management (PIM) – were used to select the four schools for refurbishment in 2021. As the investment decision was made and the refurbishment work is in progress – refurbishment of one school has started and three were in the procurement process during the evaluation mission – indicator 1 is considered achieved.

Indicator 4 regarding the implementation of EE measures based on the lessons learned in other ger districts is not yet considered achieved as the lessons learned in other ger districts have yet to be transferred. As the project is ongoing until the end of March 2022 (as per cost-neutral prolongation), the evaluation mission shall have concrete measures of the indicators. However, according to the interviews, schools for refurbishment for the fiscal year 2022 have been rated and selected. If there are schools in other ger districts, then they can be recorded for this indicator. If the school and kindergarten refurbishment proposals are approved by the relevant authorities, details of the selected schools must be reviewed and replication of the practices in non-target ger districts should be identified. Indicator 4 could then be evaluated and added to the assessment. Currently, the achievement of indicator 4 is 0%.

Effectiveness dimension 1 – Achievement of the (intended) objectives – scores **28 out of 30 points**.

Effectiveness – Dimension 2: Contribution to achievement of objectives

The contribution analysis intended to examine the project contribution to the achievement of outcome level objectives. In doing so, the evaluation team started with an assessment of the results achieved not only based on the indicators but also on the opinion and assessment of partners as to the extent to which changes have happened. The team then examined the extent of EEP's contribution to the achieved results. This was based on the activities performed and partners' assessment of EEP's contribution and its importance in achieving the results.

The contribution analysis is presented in the form of a contribution narrative for each of the results hypotheses presented below.

Table 9: Selected results hypotheses for effectiveness

Results hypothesis 1 (activity – output – outcome)	Hypothesis 1. The project will develop guidelines for a transparent, effective and gender sensitive public investment management of the municipality and pilot it in the retrofitting of buildings in the education sector (activity1). After discussions between relevant stakeholders and a review and approval by MoF, this guideline will establish a regulatory framework for a transparent, effective and gender-sensitive PIM (output1). The module training on GRB and newly developed guidelines will be developed and training will be organised (activity 2) to ensure that city officials (including planning and investment officers) have sufficient knowledge of PIM and the necessary skills to apply it in practice (output2). As PIM guidelines are integrated into MUB's public investment process through the adoption and revision of regulations at respective authorities and as the capacity of MUB staff to apply these guidelines increases, the preconditions for the introduction of a transparent, effective and gender-sensitive Public Investment Management (PIM) in Ulaanbaatar will improve (Outcome1).
Main assumption	The skills needed to manage public investment efficiently are not yet sufficiently developed in MUB. As a result, the preparation, planning, execution, acceptance and maintenance of construction projects and the associated budgeting are inadequate. There is, therefore, a need for effective PIM tools at MUB and local levels and an interest in improving their capacity.
Risks/unintended results	Motivation from MoF to approve and adopt developed guidelines is modest. Moreover, due to the weak institutionalisation of the capacity development activities, the results of the capacity development activities do not last long because of the high turnover of staff at MUB.
Alternative explanation	Gender-sensitive public investment management, based on EU best practices, introduced by the public authorities guided by other donors.
Confirmed/partly confirmed/not confirmed	Confirmed

Results hypothesis 2 (activity – output – outcome)	Hypothesis 2. Based on the capacity-building of the ERC and the municipality through the provision of technical, process and organisational advice (activity 1) and study outputs (activity 2), LEEAP will be developed and finalised, integrating funding opportunities for energy saving and energy efficiency improvement measures, and establishing an energy-saving unit and fund at MUB (output1). As a result, the planning expertise of the key actors involved in the implementation of energy efficiency measures in the construction sector of Ulaanbaatar will improve. (outcome2).
Main assumption	The Energy Regulatory Commission is proactive in translating the National Energy Efficiency Action Plan (NEEAP) into the Local Energy Efficiency Action Plans (LEEAP).
Risks/unintended results	No political will and ownership to further pursue the implementation of LEEAP, as well as PIM guidelines
Alternative explanation	Other donors or by own capacities, strategic framework is adopted based on principles and EU standards.
Confirmed/partly confirmed/not confirmed	Partially confirmed: LEEAP yet to be officially adopted, planned for the first quarter of 2022

Results hypothesis 3 (activity – output – outcome)	Hypothesis 3. The training modules on energy efficiency in the construction sector are developed and delivered by stakeholders (activity1), enabling trained experts and companies to offer and deliver their energy-efficient services and solutions to the market (output 1). Meanwhile, training courses for the actors in the banking sector on EE criteria for assessing loan applications for construction projects (activity2) will enable banks to introduce energy efficiency criteria for evaluating loan applications for construction projects (output 2) and introduce low-interest loans for energy efficient model homes (output 3) through pilot housing loans (activity 3). As a result, private sector actors in the construction sector will improve their expertise in introducing energy efficiency measures (outcome 3).
Main assumption	The energy efficiency topic is new to Mongolia. The capacities of relevant actors in the private sector to introduce energy efficiency measures are still inadequate. In particular, actors in the construction industry (e.g. architects, technicians, workers, companies involved in construction work and the production of building materials) lack specific know-how on energy efficiency. In addition, the Mongolian financial sector cannot adequately assess the eligibility of loan applications for energy-efficient construction measures because there are no specific criteria for energy efficiency. There is, therefore, a need to improve the expertise of experts in the construction sector to introduce energy-efficient services and solutions and an interest in doing so.
Risks/unintended results	If the training is not fully institutionalised, it may stop without the project's support. Moreover, if there is only low market demand for energy efficiency, the need for training and capacity development could decrease.
Alternative explanation	Other donor interventions contribute to or are mainly responsible for strengthening capacities of the construction, financial sector, and associations and enhance a higher degree of EU standards in the construction and financial sectors.
Confirmed/partly confirmed/not confirmed	Confirmed

Results hypothesis 4 (activity – output – outcome)	Hypotheses 4. Energy-efficient technologies will be introduced and available (outcome 4) through pilot actions and practices – such as the retrofitting of 20 public buildings (activity 1) and the development of standardised renovation plans (activity 2) and the construction of energy-efficient model houses (activity 3). This will improve the capacity of the actors and enable a knowledge base (output 1).
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Main assumption	As energy efficiency is an emerging topic, practices for the energy-efficient renovation of existing public buildings (such as schools and kindergartens) and for the realisation of energy-efficient model houses are lacking. Therefore, energy efficiency technologies and their application should be introduced through pilot measures in ger districts.
Risks/unintended results	A demand for energy-efficient housing and energy-saving technology in public buildings is low, thus leading to the loss of knowledge of the introduced energy efficiency technologies.
Alternative explanation	EU standards in EE technologies are initiated by the bilateral interventions of other donors.
Confirmed/partly confirmed/not confirmed	Confirmed

Evidence of the improvement of transparency, effectiveness and gender sensitiveness in PIM (**results hypothesis 1**) in Ulaanbaatar has been observed. Firstly, MUB was the first local authority to develop and disseminate the citizen budget in 2018. This was an important step towards promoting fiscal transparency at city level. In developing the citizen budget, stakeholders realised that crucial mechanisms – tools to collect, integrate and analyse fiscal data – were not in place. Therefore, relevant MUB agencies adopted, developed and learned to use the tools and mechanisms required to develop and compile citizen budgets (Int 3 with other stakeholders).

Secondly, the Gender Inequality Sub-program of Ulaanbaatar was adopted in 2020, with the aim of ensuring the development of policies, programmes and regulatory frameworks in Ulaanbaatar that reflect the gender equity concept and introduce gender-responsive policy planning, budgeting and M&E at all levels in MUB (PIE 2 Annual Report 2020, 2021; Sub-Program for Gender Equity 2020–2025, 2020). However, there is not much information and evidence on improvements and changes made through this programme. MUB seemed to attach comparatively little importance to gender equality and GRB due to a change in leadership.

Another highly important output, ensuring the efficiency of PIM, was the adoption of Governor’s Order No. A/859, Methodology to Plan Refurbishment Projects in the Education Sector of Ulaanbaatar City. The methodology is now being used to plan state budget investment in the education sector in the city of Ulaanbaatar, complemented by the software system for receiving investment requests from schools and kindergartens and for ranking them according to the criteria set out in the guideline. The effectiveness and importance of this guideline was underlined by several partner organisations and the beneficiaries. Most importantly, MoF recognised the importance of this practice and lessons learned in updating the current PIM guideline – MoF’s regulation No. 295. However, active advocacy is needed at MUB and government level to integrate the lessons learned from the project into an update of the PIM practice (Int 4, 8–10 with partner organisations; Foc Dis 1, 2; Int 5 with stakeholders).

EEP provided CD activities and technical assistance to promote transparency, gender sensitiveness and effectiveness of PIM. However, the results achieved are restricted to the education sector in Ulaanbaatar only and improvements in GRB are not evident. In other words, lessons learned and best practices obtained during the project have not been mainstreamed at MUB and have not been well communicated and advocated over a wider spectrum, including within the government and respective ministries.

The International Monetary Fund and World Bank assessed PIM capacities in Mongolia and came to the conclusion that there is a lack in knowledge and application. Together with MUB, the project selected two (out of eight) PIM elements on which to focus the capacity development. They are ‘project selection and budgeting’ and ‘project monitoring and evaluation’.

In terms of **results hypothesis 2**, the development of LEEAP was the first ever attempt to plan energy efficiency actions at local level under the Law on Energy conservation and the NEEAP 2018–2022. There was, therefore, a certain lack of experience, knowledge and partnership practices among the key actors. This gap was even more evident in rural areas and provinces. All the relevant actors acknowledged that planning expertise improved and practices were established (Int 1–4, 7 with the partner organisations). MoE and ERC said that there is a need to further replicate the practice in provinces, where planning expertise is expected to be lower than in Ulaanbaatar. The data was analysed and triangulated (on the levels of evaluators and type of interviewee). The contribution story was derived from the analysis and indicated if and to what extent a causal relationship was plausible. Additional interviews were conducted with external stakeholders to assess in greater depth external contributing factors, in particular on defined alternative explanations.

The project made several contributions:

- CD activities for working group members. This included training and study tours. Although some of the CD activities were cancelled due to COVID-19 prevention measures, participants highlighted the importance of these activities for improving their knowledge and for promoting ownership and cooperation (Int 7, 11 with partner organisations). Some partners mentioned the provision of support for enhancing the technical capacity of the partners by providing equipment for EE measurement and monitoring (Int 1, 2, 4 with partner organisations).
- Technical assistance was provided for conducting the study, analysis of the current situation and the development of LEEAP. As previously mentioned, the LEEAP development practice is new, which is why the working group and key partners needed to rely on international practices and knowledge.
- Another important contribution was to support communication and partnership among key actors. Working group meetings and processes were mainly facilitated by the support of the EEP.

LEEAP – the main output of component 2, accompanied by the study on financing options for LEEAP – includes institutional, organisational, technical and financial measures. Building on a comprehensive LEAAP, the municipality will be able to better plan its energy efficiency measures in the building sector (Int 11 with partner organisations). One key factor for the effectiveness of the measure was the proactiveness of ERC, mainly based on its mandates under the Law on Energy conservation and NEEAP 2018–2022, MUB, and main stakeholders, as well as the high level of ownership among key actors. In fact, LEEAP seems to be considered one of the benchmark achievements of the project at MUB.

However, it needs to be noted that **LEEAP is still expected to be adopted** by the local citizen representatives' council. Moreover, the issue of establishing a dedicated unit for the implementation of the LEEAP is somewhat uncertain, which could undermine the future effectiveness of the achieved results. However, this is beyond the intervention of EEP.

As for **results hypothesis 3**, the expertise and capacity of private sector actors on EE services are hard to measure as there are no databases and records at the interviewed partner organisations on how many of the construction companies, construction material manufacturers and other private actors are providing EE solutions in the construction sector (Int 3, 6, 7 with partner organisations).

We know that at least 17 companies are providing EE private house construction services to the EE housing loan product piloted by the banks. Because the pilot project is scheduled to conclude in October 2021 and the reports and results compiled, more information on the expertise of companies will emerge. However, it was evident from the interviews that the expertise and service quality of the companies varied. Some companies provided higher quality, thereby generating greater satisfaction. Other companies failed to deliver quality services, causing disputes and challenges for the banks (Foc Dis 7, Int 1–3 with civil society and private sector). This is why stakeholders suggested that the measurement and certification mechanism for EE in private houses (private house construction involves much less inspection and oversight from government

authorities than larger construction projects) need to be established or improved (Int 1–3 with civil society and private sector).

Most of the respondents agreed that private sector providers in the construction sector have a limited capacity to provide and introduce EE solutions. This is largely due to a limited domestic production, innovation and technology capacity, market potential and demand for energy efficiency in the construction sector, as the integration of energy efficiency in buildings results in higher construction costs (Int 3, 7 with partner organisations, Int 5 with civil society and private sector, Foc Dis 6).

Feedback from stakeholders and beneficiaries – in this case those who attended training – indicates that knowledge of how to integrate EE into the construction sector improved (Int 1–3, 5 with civil society and private sector, Int 3 with partner organisations and Foc Dis 6).

Training attendees expressed the need for advanced training on innovative building technologies, especially in green and passive building technologies, as awareness of and demand for such buildings will increase in the future. For this reason, the response to EE training for construction designers and construction material manufacturers was well received: 82.5% of attendees said that the content of the training was good, while 95% of attendees said that they learned new things. (Multi-Criteria Decision Analysis, Training report, 2021).

The competence and awareness of EE services in the banking sector has improved. Two banks have actively released loans for EE private houses using EE rating criteria. The final number of loans released is expected to be published in the report from the MBA and MSFA in late 2021. As the product and concept are new to the banking sector, other banks are somewhat less active and very careful about the potential risks. Moreover, the two previously mentioned banks are providing EE housing loans using EE rating criteria for non-target groups, separately from the pilot project, confirming the potential continuation of these loans beyond the pilot project intervention, as the market potential for such financial products is growing (Int 1–3 with civil society and private sector).

EEP contributed to the development of the concept and criteria for energy efficiency rating and provided support for the training of banking sector staff. Moreover, EEP provided continuous support during the pilot project and advice on dealing with the unforeseen challenges that arose. This is why some of the partner banks praised the responsiveness of the EEP team and its contribution to the pilot for the EE housing loan scheme (Int 1–3 with civil society and private sector).

It can be concluded that the project achieved the intended results, namely to improve the expertise of private actors for integrating EE into the construction sector. However, further interventions need to be undertaken to ensure the private sector actors' capacity to provide reliable and efficient EE solutions on a wider scale.

Finally, for **results hypothesis 4**, energy efficiency was effectively introduced to 22 public buildings as part of a retrofitting scheme. The refurbishment of 18 schools and kindergartens has been completed; the refurbishment of four others is ongoing with the sole funding of MUB. The refurbishment of schools and kindergartens introduced an EE practice and knowledge base for actors at all levels, including teachers and the parents of children at target schools. This meant that partners were interested not only in continuing the practice of energy-efficient retrofitting of schools, but also in replicating the practice in the health and culture sectors (Int 4, 8–11 with partner organisations, Foc Dis 1–4). If the plan for the energy-efficient retrofitting of schools is approved in 2022, it would directly result in the replication of the practice and lessons learned (Int 4 with partner organisations).

The finalisation of the ongoing typology study of school and kindergarten buildings and the database of EE retrofitting blueprints will also facilitate the actors' knowledge base (Int 8 with partner organisations).

One main success factor was the project's high level of professional quality and the international expertise provided by short-term consultants. The general orientation of local construction companies towards modern EU and Western countries' construction trends played a role, motivating them to become engaged in energy-efficient retrofitting. According to interviewees, other donors were not involved in the activities described above. Therefore, the rival hypothesis regarding these fields of EE retrofitting could not be confirmed.

Effectiveness dimension 2 – Contribution to achievement of objectives – scores **27 out of 30 points**.

Effectiveness– Dimension 3: Quality of implementation

The quality of the implementation was assessed on the basis of communication and stakeholder engagement and evidence-based decision-making (steering). The assessment looked into the factors undermining the quality of implementation, complemented by feedback from key partners and stakeholders on the quality of implementation.

The project has maintained a formal communication process – two steering committee meetings per year – and direct communication between component managers and key partners. One partner organisation identified certain flaws in communication for component 1 (Int 2 with training providers). However, continuous communication was maintained with other development projects, especially with those funded by SDC (Int 3, 4 with other stakeholders).

On top of these communication efforts, the project engaged and cooperated with other development projects on several occasions, for example with UNICEF on the refurbishment of selected schools and kindergartens, a partnership with GERES on sharing experience with LEEAP development, cooperation with the Urban Governance Project (UGP) on embedding the policy planning and PIM training on the TRC online platform, partnered with the World Bank's MASAM project on the Ulaanbaatar citizen budget 2018 and 2019.

Families and school committees have applied the lessons learned in the monitoring of construction work to other buildings, such as private houses that were refurbished and at least one kindergarten, which acquired a neighbouring building and did the retrofitting on its own. The budget for the material was acquired by the district and all the manpower came from school staff and parents.

Evidence-based decision-making was assessed against Results Monitor system inputs. Both progress reports and the Results Monitor system outlined challenges and risks as well as further needs for steering or action. The intention is, therefore, to base reporting and steering practices on the results orientation, risks mitigation and evidence base. However, both in reports and the Results Monitor, there is not always sufficient evidence, data, and references on risks and the need for steering or action.

As the interviews show, all key partners were satisfied with project implementation, responsiveness and the flexibility of the project team. Some of the partners said that the team members were the most experienced professionals in the integration of EE in the construction sector, adding that partners had confidence in the project quality because of the team's expertise (Int 1–4, 7, 8 with partner organisations, Int 1–3, 5 with civil society and private sector, Foc Dis 3).

The main factors undermining the quality of the implementation were COVID-19 prevention measures, which limited the ability to organise certain activities, delayed certain milestones and activities and undermined the efficiency of communication. Due to COVID-19, training was shifted from physical in-person activities to an online format. Due to the pandemic, human resources and time allocation shifted heavily towards prevention measures. Moreover, because a limited portion of staff in the partner organisations were actively working during the lockdowns, several activities were delayed, such as the discussion and approval of LEEAP (Int 4, 11 with partner organisations).

Effectiveness dimension 3 – Quality of implementation – scores **20 out of 20 points**.

Effectiveness– Dimension 4: Unintended results

In this dimension, the evaluation team sought to identify all observable unintended results and their benefits and risks, and to assess how the project responded to them.

On two occasions, the project results were recognised as a good practice and were transferred to the provinces (such as LEEAP development). As LEEAP was the first attempt to develop such a plan at local level, in accordance with the legal framework and NEEAP, there is a need for such practice to be introduced and capacities developed in the provinces. In cooperation with the GERES project, the EEP team introduced the experience and practice gained with LEEAP in the provinces (Int 2 with GIZ, Int 3 with partner organisations). Another example of where results were replicated is the use of the blueprints developed for school refurbishment for similar buildings in other locations (Annual Report 2020, 2021). Because most school buildings are of a similar type and design, this replication highlighted the possibility of developing standard blueprints for most common types of buildings and for further replication. For this reason, during its final months, the project conducted a typology study of school and kindergarten buildings with a view to selecting the most common building types and developing a database of standard blueprints for them (Int 8 with partner organisations).

Secondly, the refurbishment of buildings resulted in reduced absenteeism due to illness among students and children and increased the participation and proactiveness of parents and PTAs. The project conducted a study on the social and health impact of school refurbishments in 2019. This study concluded that at three schools and kindergartens, student illness dropped 51–100% after refurbishment (Socio economic benefits of refurbishment projects, 2019). However, the number of selected cases (schools and kindergartens), the reliability of the data and methodology are questionable. For this reason, the evaluation team cross-checked these findings with the partners and beneficiaries. None of the partners and beneficiaries could confirm or deny the findings. Moreover, schools and education departments declared that they do not have reliable data to verify the change in health and absenteeism due to illness. But teachers and partner organisations explained that during the coldest period of winter, parents refuse to send their children to kindergarten for fear that they could catch the flu or because of other health issues. This is especially true for children in kindergartens or primary schools. As a result of the refurbishment, the school environment became comfortable even during winter, which means that parents are now less likely to keep their children at home during the winter (Int 9, 10 with partner organisations, Foc Dis 3, 4). As a result of the refurbishments, the parents participated in monitoring activities. There are several cases of increased parent participation and initiatives to support the school and to improve the school environment (such as furnishing the classrooms, landscaping outdoor playgrounds, establishing waste management, etc.) (Foc Dis 1–4). This could be linked with the high rate of satisfaction with the refurbishment process among parents.

According to the above-mentioned study, 83–95% of the parents surveyed knew about the refurbishment work. Moreover, 49–98% of parents think that the refurbishment work undertaken was of a high quality. The variation of the results between the three schools selected shows that the level of satisfaction and corresponding changes in attitude differ. There was no further account of the response of the project to these changes or the collection of data and analysis to verify these initial findings of social and health benefits. However, due to COVID, there were no students in schools from January 2019 until August 2021. A revision of the study data in the form of a new study was scheduled for winter 2021/22.

Finally, the piloting of the EE housing loan scheme showed that citizens are very interested in such financial products. Banks reported that a high number of loan requests were submitted. Although the reports have not yet been compiled, Xac Bank indicated that it received more than 600 applications through online submission in 2021 alone (Int 1–3 with civil society and private sector). Most of these initial applications were not from the

target group, but from the provinces and from non-ger district locations, etc. However, the high number of initial applications showed that there is a potential demand for EE housing loans. As a result, some banks introduced a similar loan product (with no grant from the project) and issued loans to these non-target group applicants from their resources. These loans are not recorded in the monitoring system. The negative unintended result of the EE housing loan scheme was a number of shortcomings in the performance of the selected construction companies, which led to a dispute between the relevant banks, borrowers, and companies. This significantly reduced the satisfaction of borrowers involved in disputes, potentially leading to growing concern and hesitation towards the loan scheme among banks and lenders alike. Every stakeholder in the pilot EE housing loan scheme has expressed the importance of ensuring the quality of construction company performance to ensure the continued success of this financial product. Although the project team visited the disputed construction sites several times and reached an agreement with the construction company that the construction company would repair the damage and finish the construction work in accordance with the blueprints and the agreed technological requirements, the company has neither finished the house nor fixed the damage (Int 1–3 with civil society and private sector, Foc Dis 7).

Parents got involved in the monitoring and evaluation of activities. Apart from EE refurbishments, the following additional activities were implemented by project schools as a direct result of the project:

- educative school gardening,
- the implementation of recycling strategies,
- the building of paved access roads,
- the erection of fences to ensure safe playgrounds,
- the renovation of classrooms,
- the creation of new spaces,
- organised training and advocacy activities for students, parents and other communities and
- implemented knowledge in insulation for private houses.

Effectiveness dimension 4 – Unintended results – scores **17 out of 20 points**.

Photo 1: Parental participation (Source/©: GIZ EEP/2021)



Methodology for assessing effectiveness

Table 10: Methodology for assessing OECD/DAC criterion: effectiveness

Effectiveness: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
<p>Achievement of the (intended) objectives</p>	<p>The assessment will measure the extent to which the projects outcome indicators were achieved.</p> <p>The project's objective: the governance capacity of the Municipality of Ulaanbaatar for the integration of energy efficiency into the construction sector is strengthened.</p> <p>The project indicators to be assessed:</p> <ul style="list-style-type: none"> • On three occasions during investment on energy efficiency measures in the construction sector, MUB applied the newly developed guidelines for transparent, effective and gender-sensitive public investment management (PIM). • MUB in cooperation with the Energy Regulatory Commission (ERC) passed a Local Energy Efficiency Action Plan (LEEAP) for the construction sector in Ulaanbaatar. • MUB made affirmative decisions for three energy efficiency measures foreseen in the Local Energy Efficiency Action Plan (LEEAP) for the construction sector in ger districts (city districts in the suburban as well as the outer zones of the city territory). • In five cases, MUB conveyed the lessons learned from pilot measures on the integration of energy efficiency into the construction sector to other ger districts. <p>By the end of a preliminary assessment, not all indicators had been met. However, project implementation is ongoing until end of March 2022.</p>	<p>Evaluation design: The analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> • interviews with political and implementing partners, stakeholders • comparative document review, Results Monitor, etc. 	<ul style="list-style-type: none"> • lack of appropriate, informative or disaggregated data • collection of additional data • lack of representation of specific stakeholders/groups • possibility of data/method triangulation • evidence strength

<p>Contribution to achievement of objectives</p>	<ul style="list-style-type: none"> • H1: After the introduction of PIM guidelines, integrated into the public investment process of MUB through the adoption and revision of regulations at the respective authorities, and the increased capacity of MUB staff to apply these guidelines – through training institutionalised at the NAOG and TRC, the municipality will make investment decisions based on guidelines for transparent, effective and gender-sensitive management and will integrate energy efficiency. • H2: based on working group progress, capacity-building and study outputs, the city administration will better plan its energy efficiency measures and adopt LEEAP and establish a dedicated unit for its implementation to mainstream energy efficiency in the construction sector in Ulaanbaatar. • H3: the capacity of private sector actors regarding energy efficiency measures will be improved and the integration of EE in financial products will be improved through training (institutionalised at the relevant stakeholder organisations for further sustainability) and pilot loan projects, thus allowing MUB to draw on an improved range of services for energy efficiency technologies and to have access to an adequate range of financial instruments that will enforce the implementation of the LEEAP and mainstream the energy efficiency in the construction sector in Ulaanbaatar. • H4: energy-efficient technologies will be introduced by retrofitting 20 public buildings and developing standardised renovation plans. Both will be used by MUB to replicate and integrate energy-efficient refurbishment into public buildings and to construct energy-efficient model houses, which will be used for piloting the energy-efficient housing loan scheme developed and 	<p>Evaluation design: This assessment dimension will analyse the contributions of project activities to outputs and outcomes achieved.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> • interviews/FGDs with political and implementing partners, stakeholders, construction companies, • analysis of project documents (data on realised projects), analysis of surveys conducted at the kindergartens, schools, evaluation visit on site (location of refurbishments). 	<ul style="list-style-type: none"> • lack of appropriate, informative or disaggregated data • collection of additional data • lack of representation of specific stakeholders/groups • possibility of data/method triangulation and • evidence strength
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	delivered by the financial institutions.		
Quality of implementation	The Results Monitor will be consulted and assessed for the purposes of the triangulation and validation of data that is available, use of capacity works and construction of a contribution story.	<p>Evaluation design: the analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners, stakeholders, beneficiaries analysis of project documents (data on completed projects, analysis of surveys, analysis of the Monitoring System, LEEAP and its implementation, construction companies, teacher reports, students review questionnaire, etc.) 	<ul style="list-style-type: none"> lack of appropriate, informative, or disaggregated data collection of additional data lack of representation of specific stakeholders/groups possibility of data/method triangulation evidence strength
Unintended results	<p>Appraisal mission documents; safeguard and gender documents.</p> <p>During the inception mission interviews, two unintended changes were identified: 1) absenteeism of teachers and students decreased and 2) mental health improved, thus improving teachers'/students' ability to concentrate on learning/teaching.</p> <p>The contribution of the project to gender equality and environmental protection will be conducted/verified.</p> <p>The evaluation mission will focus on identifying other unintended positive or negative results/changes in the project.</p>	<p>Evaluation design: The methodological approach was to use explorative evaluation designs, for example, 'Most Significant Change', 'Outcome Harvesting' or 'Outcome Mapping', which have proven useful in assessing unintended results.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> semi-structured interviews with relevant stakeholders and analysis of project documents (data on realised projects, analysis of surveys, analysis of the Monitoring System, LEEAP and its implementation, construction companies, teacher reports, students review questionnaire, etc.). 	<ul style="list-style-type: none"> lack of appropriate, informative, or disaggregated data collection of additional data lack of representation of specific stakeholders/groups
* SMART: specific, measurable, achievable, relevant and time-bound			

4.5 Impact

This section analyses and assesses the impact of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex).

Summarising assessment and rating of impact

Table 11. Rating of OECD/DAC criterion: impact

Criterion	Assessment dimension	Score and rating
Impact	Higher-level (intended) development changes/results	30 out of 30 points
	Contribution to higher-level (intended) development results/changes	36 out of 40 points
	Contribution to higher-level (unintended) development results/changes	27 out of 30 points
Impact score and rating		Score: 93 out of 100 points Rating: Level 1: highly successful

In total, the impact of the project is rated Level 1: highly successful, with 93 out of 100 points.

Impact – Dimension 1: Higher-level (intended) development changes/results

In the field of energy efficiency, the project strengthened the capacities of the construction and financing sector, which in turn resulted in policy adoption, integration of gender-sensitive public investments and the scaling up of energy-efficient refurbishments throughout the country (outside the focus regions of the project).

During its term, the project achieved several important development results:

- LEEAP is a first step taken by MUB to deliver renovation programmes. MUB will introduce an energy management system for public buildings and will set up a database of building energy consumption,
- blueprints for 125 buildings in Ulaanbaatar (and more in other regions),
- implemented EE measures accounted for up to 57% of energy savings,
- employment creation (mobilisation of the construction sector),
- the project has not yet conducted continuous monitoring of its employment effect although it has helped create jobs in the construction sector and the employment of EE auditors,
- climate action and environmental protection,
- by using models and tools developed within the framework of the project, the partners have independently planned and, in some cases, implemented measures in public and private buildings,
- improving sector governance and
- in addition to helping create enabling conditions, the project helped increase transparency, gender equality and participation in the sector. The interviewed partners repeatedly stressed that this project promoted communication between all partners.

Apart from the socio-economic and energy efficiency benefits of retrofitting public buildings and the work on good governance, the project contributed to the advancement of various other aspects, such as gender mainstreaming, gender-responsive budgeting, local budget and investment project information transparency, public investment project planning & monitoring (with the involvement of citizens/parents) and asset management in Ulaanbaatar. Moreover, the public investment management (PIM) capacity of civil servants in Ulaanbaatar at district and city administration level as well as parents' involvement in schools/kindergarten operations improved thanks to the project's capacity-building and coaching programmes.

Another initiative of the project, the Citizens' Budget Manual for 2020, which aims to enhance the transparency of MUB's budget and investment programmes, was developed (in English and Mongolian) and disseminated among leaders of MUB's Policy Planning and Treasure Departments. Moreover, a project booklet containing information about projects implemented in the education sector was developed. The launch event in September 2020 was attended by SDC, MUB and GIZ management. To improve understanding and

responsiveness among MUB residents and civil society, the project ran a systematic communication campaign on local budget and investment transparency in early 2021.

Throughout the term of the project, the topic of energy efficiency gained considerably in importance at national level too. The LEEAP and PIM developed will lay the foundation at city level (and at regional level in other parts of the country) to strategically approach and implement measures aimed at improving EE. However, PIM has yet to be implemented in practice.

The TC measure contributed directly to the achievement of the objectives for sustainable development SDG 7 (ensuring access to affordable, reliable, sustainable and modern energy for all), in particular sub-objectives 7.3 and 7.b, SDG 11 (rendering the cities and settlements inclusive, safe, resilient and sustainable), in particular sub-objectives 11.1, 11.6 and 11.c, and SDG 1 (end poverty in all its forms and everywhere), in particular sub-objective 1.5.

Despite the positive steps in the project's intervention areas, essential challenges remain. One of the main challenges is that the investment programmes and projects continue to be poorly managed and are overambitious, inefficient and unrealistic due to political interference (for example, politicians in both national and local parliaments allocate investments that have not been properly evaluated/appraised to their constituencies in order to get re-elected) and a lack of human resources. To resolve this, the project needs to continue to provide policy-development and capacity-building support. Also, the weak capacity and lack of financial and human resources within construction companies are affecting the quality of the refurbishments.

Impact dimension 1 – Higher-level (intended) development changes/results – scores **30 out of 30 points**.

Impact – Dimension 2: Contribution to higher-level (intended) development results/changes

There is an evident need for the integration of EE into the construction sector at MUB level in policy planning. PIM (need for technical assistance, capacity building, financial cooperation, etc.) needs to be officially adopted to enable such planning (Int_5 with partner organisation). The project directly contributed to the capacity development of the construction and financial sectors in Mongolia (Int_1 with partner organisation).

The project promoted political dialogue in the energy sector at national and city level. It contributed to improved energy policy conditions and the transparency of energy-relevant decision-making at municipal level. It is true that women are underrepresented in many areas of the energy sector in Mongolia. The project also ensured that men and women participate in project activities and decisions on project design to an equal degree wherever possible. However, the development of MUB energy management systems, the practical implementation of EE measures (such as the energy-efficient refurbishment of buildings) and energy data management are areas that have no direct gender relevance.

Hypothesis 1 can be partly confirmed. The PIM guidelines have been developed but have yet to be implemented by adopting Regulation No. 295.

Hypothesis 2 can be confirmed. The pilot project was undertaken.

Table 12: Selected results hypotheses for impact

Hypothesis 1 (outcome – impact)	H1: With the introduction of transparent, effective and gender-sensitive public investment management, MUB will make investment decisions that are both policy-based and integrate energy efficiency.
Main assumption	The PIM criteria are used by the city’s officials in all future energy efficiency investments.
Risks	Frequent elections and changes of officials result in a lack of political will to introduce PIM criteria.
Alternative explanation	Other donor interventions also lead to or are the main factors for gender-sensitive public investment management.
Confirmed/partly confirmed/not confirmed	Partly confirmed

Hypothesis 2 (outcome – impact)	H4: The municipality uses the learning experiences from the pilot measures to integrate energy efficiency into the building sector to transfer energy efficiency in buildings to other parts of the city.
Main assumption	The energy-efficient rehabilitation of buildings in the educational sector is part of the investment programme of the city.
Risks	The rehabilitation of buildings in the educational sector is not part of the investment programme of the city.
Alternative explanation	Other donor interventions provide learning experiences from EU best practices to integrate energy efficiency measures into buildings.
Confirmed/partly confirmed/not confirmed	Confirmed

Impact dimension 2 – Contribution to higher-level (intended) development results/changes – scores **36 out of 40 points**.

Impact – Dimension 3: Contribution to higher-level (unintended) development results/changes

The Ministry of Finance will amend the Regulation No. 295 by February 2022 with the aim of integrating gender equality and energy efficiency aspects (Int_5 with other stakeholders). The project contributed to more systematic and transparent decisions on renovation and to the development of a Building and Investment Data Management System. Today, this database includes a total of 262 schools and 145 kindergartens. In 2020, 29 proposals worth a combined MNT 3.1 billion were approved and funded by the State and Municipal budgets, whereas in 2021, 48 proposals amounting to MNT 4.4 billion were approved and included in the budget. The project directly contributed to this (Int_1 with GIZ, Int_2 with Donor, Int_4 with partner organisation). The project also contributed to evidence-based policy dialogue for replication, upscaling and dissemination of PIM and EE, and the integration of the gender and pro-poor dimension into project selection criteria by developing guidance based on clear criteria for a transparent PIM cycle.

Due to the adoption of a new regulation on PIM by MoF in 2019, the project was asked to improve the effectiveness of rehabilitation projects in the education sector at municipality level by MoF and MUB, which is a crucial area in PIM. Mongolia often neglects giving priority to maintenance/renovation projects and allocates only 0.15% of its total capital expenditure to it (IMF recommends that 0.3–1% of capital expenditure should go to maintenance/renovation). This results in inefficiencies in public investment projects because of a reduced lifespan of assets, such as buildings. Also, due to the absence of a clear procedure on the planning of

rehabilitation projects at municipality level, elected officials tend to influence both the planning and selection of projects during local budget planning and approval processes.

The recently endorsed procedure, which was implemented in 2020, helps resolve these problems.

Moreover, to support the implementation of MoF's Regulation No. 295 at municipal level, the project worked on developing a detailed PIM guideline/manual (looking at aspects from planning, implementing, M&E and maintenance) using the EE project examples in 2020. The guideline will provide methodological support to MUB officials to administer and manage public investment projects.

Impact dimension 3 – Contribution to higher-level (unintended) development results/changes – scores **27 out of 30 points**.

Methodology for assessing impact

Table 13: Methodology for assessing OECD/DAC criterion: impact

Impact: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Higher-level (intended) development changes/results	The assessment will be conducted on the basis of progress that was made in making higher-level development changes – overall impact indicated in the module proposal.	<p>Evaluation design: the analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners, stakeholders, construction companies analysis of project documents (data on realised projects), analysis of surveys conducted at the kindergartens, schools, on-site visits 	<ul style="list-style-type: none"> availability of data collection of additional data lack of representation of specific stakeholders/groups, possibility of data/method triangulation evidence strength
Contribution to higher-level (intended) development results/changes	<p>Hypothesis 1: With the introduction of transparent, effective and gender-sensitive public investment management, MUB will make investment decisions that are both policy-based and integrate energy efficiency.</p> <p>Hypothesis 4: The municipality uses the learning experiences from the pilot measures to integrate energy efficiency into the building sector to transfer energy efficiency in buildings to other parts of the city.</p>	<p>Evaluation design: conduct an analysis of the contributions of project activities to outputs and outcomes achieved using contribution analysis approaches.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners, stakeholders, construction companies analysis of project documents (data on realised projects), analysis of surveys conducted at the kindergartens, schools 	<ul style="list-style-type: none"> availability of data collection of additional data lack of representation of specific stakeholders/ groups possibility of data/method triangulation evidence strength

Contribution to higher-level (unintended) development results/changes	Appraisal mission documents, safeguards and gender documents.	Evaluation design: explorative evaluation design approach to be used: Most Significant Change.	<ul style="list-style-type: none"> • availability of data • collection of additional data • lack of representation of specific stakeholders/ groups • possibility of data/method triangulation • evidence strength 	
	The contribution of the project to gender equality and environmental protection will be conducted/verified.			Empirical methods: <ul style="list-style-type: none"> • interviews/FGDs with political and implementing partners, stakeholders, construction companies • analysis of project documents (realised projects, appraisal mission document, gender documents)
	The evaluation mission will focus on identifying other unintended positive or negative higher-level development results/changes.			

4.6 Efficiency

This section analyses and assesses the efficiency of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex).

Summarising assessment and rating of efficiency

Table 14. Rating of OECD/DAC criterion: efficiency

Criterion	Assessment dimension	Score and rating
Efficiency	Production efficiency (resources/outputs)	60 out of 70 points
	Allocation efficiency (resources/outcome)	25 out of 30 points
Efficiency score and rating		Score: 85 out of 100 points Rating: Level 2: successful

In total, the efficiency of the project is rated Level 2: successful, with 85 out of 100 points.

Analysis and assessment of efficiency

Efficiency – Dimension 1: Production efficiency

The GIZ efficiency tool was used to assess costs that are retrospectively assigned to outputs. Interviews conducted on the basis of cost-obligo reports (allocation of resources to outputs) were also used.

Figure 3: GIZ Efficiency Tool (Screenshot)

Module objective	The governance capacity of the Ulaanbaatar Municipality for the integration of energy efficiency in the building / construction sector is strengthened.				
BMZ costs (Sum of individual costs)	5.994.788,74 €				
Co-financing	0,00 €				
Partner inputs	0,00 €				
Total costs	5.994.788,74 €				
Residual funds (BMZ costs and co-financing)	1.190.766,39 €				
Module objective Indicators	On three occasions during investment on energy efficiency measures in the construction sector the municipality of Ulaanbaatar applied the newly developed guidelines for a transparent, effective and	the municipality of Ulaanbaatar in cooperation with the Energy Regulatory Commission (ERC) passed a Local Energy Efficiency Action Plan (LEEAP) for the construction sector in Ulaanbaatar	the municipality of Ulaanbaatar made affirmative decisions for three energy efficiency measures foreseen in the Local Energy Efficiency Action Plan (LEEAP) for the construction sector in Ger areas	In 3 cases, the municipality of Ulaanbaatar conveyed the lessons learned from pilot measures on the integration of energy efficiency in the construction sector to other Ger districts	0
Achievement	100%	100%	100%	0%	#DIV/0!
	Output A	Output B	Output C	Output D	
Outputs	The preconditions for the introduction of a transparent, effective and gender sensitive public investment management in Ulaanbaatar are	The planning competencies of key actors involved in the implementation of energy efficiency measures in the construction	In Ulaanbaatar, private sector actors in the construction sector, have improved their competences in introducing	Energy efficient technologies introduced to Ulaanbaatar through pilot activities.	
Costs incl. commitment (Obligo)	1.114.633,56 €	919.463,30 €	952.636,53 €	3.008.055,35 €	
Co-financing	0,00 €	0,00 €	0,00 €	0,00 €	
Partner inputs	0,00 €	0,00 €	0,00 €	0,00 €	
Total costs	1.114.633,56 €	919.463,30 €	952.636,53 €	3.008.055,35 €	
Total costs in %	19%	15%	16%	50%	
BMZ total costs in % without co-financing	19%	15%	16%	50%	
Plan for residual funds (residual value)	226.245,61 €	166.707,29 €	142.891,97 €	654.921,51 €	

The use of project resources and the modes of delivery were reasonable. Given that the project is ongoing, the evaluation concluded that the project's overall expenses were in line with the cost plan as reflected in the table of the efficiency tool on the planned budget against expenditure. The budget analysis revealed that the overarching costs of the project were moderate. The project makes intensive use of local expertise. International experts were deployed prior to the pandemic and in areas where local experts are not available. This approach helped lower costs while ensuring that knowledge remains available and continues to evolve at local level. The project made use of numerous instruments and experiences already developed in other TC projects. It mobilised reasonable amounts of financial resources (such as co-financing) from partners for EE refurbishments, thus enhancing ownership among partners.

As local knowledge and expertise in the field of energy efficiency is limited, international expertise was necessary for the development of LEEAP and for the development of local actor capacity. This implied relatively high costs. However, due to the pandemic, the project's budget allocation and distribution to local experience and expertise was unburdened. As local expertise in this area is limited, no public tendering procedures were carried out. Instead, the implementation partners/contractors were selected on an individual basis from the partner network.

The project's activities complemented those of other projects involving SDC and international development partners. The project supported a policy dialogue platform at municipal and state level and collaboration in promoting networks on data management. Additionally, the project not only cooperated with most of the other donors active in the country but also actively encouraged better coordination of donor contributions (Int_1 with Donor).

Efficiency dimension 1 – Production efficiency – scores **60 out of 70 points**.

Efficiency – Dimension 2: Allocation efficiency

As for Output 1, there are several public investment management capacity development projects, especially those fully or partially funded by SDC. For this reason, the efficiency of allocated instruments was compared with those projects. The project made an efficient contribution by developing guidelines for transparent, effective and gender-sensitive PIM for the municipality to be developed and used as a pilot in the retrofitting of buildings in the education sector. MUB contributed financially to these activities. The project's own human and technical resources were deployed.

Energy efficiency is a comparatively new topic in Mongolia. For this reason, national capacity is limited, which in turn limits alternative project instruments for capacity development – especially for Output 2. However, the project used international expertise to develop capacities and enhance the knowledge of local experts by conducting extensive training (both physical and in online format). 100 participants, of which 48% were female, from three different groups of the construction sector (such as architects, technicians, construction workers, construction companies and building material companies) have successfully participated in training courses about energy efficiency and passed the final exam.

Output 4 changed the design of the energy-efficient housing pilot activity and the pilot energy-efficient housing loan scheme. The efficiency of this activity was analysed by comparing it with other alternative designs from international practice. EE for private homes costs 5,455 euros per home and allows for savings of 3 tonnes of coal (equivalent to 8 tonnes of CO₂ per annum). This is in contrast to the energy-related CO₂ emissions of 8 tonnes per person per annum in Germany. If 3,458 buildings are newly built or thermos-technically retrofitted in accordance with GIZ's specifications, 830,000 tonnes of CO₂ will be saved over a 30-year lifetime directly resulting in the reduction of air pollution. The targeted number of buildings to be constructed will be lower due to substantial increases in the cost of construction material (a negative effect of COVID-19). Scaling-up was considered with regards to Output E, by conducting more energy efficiency refurbishments of public building and housing in other ger districts, as well as other regions of the country. The financing institutions and association have announced that, based on the experiences of the project, they will continue to scale up refurbishments across the country.

Efficiency dimension 2 – Allocation efficiency – **scores 25 out of 30 points.**

Methodology for assessing efficiency

Table 15: Methodology for assessing OECD/DAC criterion: efficiency

Efficiency: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Production efficiency (Input/outputs)	The GIZ efficiency tool will be used to assess costs that are retrospectively assigned to outputs (production efficiency).	Evaluation design: the analysis followed the analytical questions from the evaluation matrix (see Annex); the follow-the-money approach was used. Empirical methods:	No major limitations were identified.

Efficiency: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
		<ul style="list-style-type: none"> interview based on cost-obligo reports, allocation of resources to outputs and progress reports analysis of project documents (data on realised projects, appraisal mission document, financial/budget documents) 	
<p>Allocation efficiency (Input/outcome)</p>	<p>The GIZ efficiency tool will be used to assess deployed instruments and its costs that are retrospectively assigned to outcomes. The following basis of assessment will be applied:</p> <ul style="list-style-type: none"> As for Output 1, there are several public investment management capacity development projects, especially those fully or partially funded by SDC. Therefore, the efficiency of allocated instruments can be compared with them. Energy efficiency is a comparatively new topic in Mongolia. For this reason, national capacity is limited, which in turn limits alternative project instruments for capacity development – especially for Output 2. Output 4 changed the design of the energy-efficient housing pilot activity and the pilot energy-efficient housing loan scheme. The efficiency of this activity can be compared with other alternative designs from international practice. 	<p>Evaluation design: the analysis followed the analytical questions from the evaluation matrix (see Annex); the follow-the-money approach was used.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners analysis of project documents (data on realised projects, appraisal mission document, financial/budget documents) 	<p>No major limitations were identified.</p>

4.7 Sustainability

This section analyses and assesses the sustainability of the project. It is structured according to the assessment dimensions in the GIZ project evaluation matrix (see Annex).

Summarising assessment and rating of sustainability

Table 16. Rating of OECD/DAC criterion: sustainability

Criterion	Assessment dimension	Score and rating
Sustainability	Capacities of the beneficiaries and stakeholders	20 out of 20 points
	Contribution to supporting sustainable capacities	30 out of 30 points
	Durability of results over time	47 out of 50 points
Sustainability score and rating		Score: 97 out of 100 points Rating: Level 1: highly successful

Partners and stakeholders confirmed that thanks to the contribution of the project, they have witnessed a significant improvement in capacity in terms of training and awareness-raising, adoption of new guidelines, tools and systems, creation of knowledge and practices, enhanced cooperation and partnership, and the updating of relevant standards.

However, each of the key partners pointed out that further capacity-building for professional staff and experts at a more advanced level and an introduction to international practices and technologies are needed to further promote EE.

Other factors that are important for the promotion of sustainability include a sustainable cooperation and communication mechanism for stakeholders and the promotion and advocacy of project results, achievements and lessons learned to the government, public and stakeholders at various levels.

In general, in the legal and policy context, government commitment is stable and both the public and social demand for the integration of EE into construction and the interest of private and financial actors in it are growing. This creates a positive enabling environment.

In total, the sustainability of the project is rated Level 1: highly successful, with 97 out of 100 points.

Analysis and assessment of sustainability

Sustainability – Dimension 1: Capacities of the beneficiaries and stakeholders

The capacity development matrix foresaw three levels of capacity development: the individual level (which aimed to build personal expertise), the organisational level (which aimed to develop capacity at organisational level) and the society level (which aimed to develop cooperation and enabling frameworks) (Capacity Development Matrix, 2019).

Capacity-building exercises at individual level can be summed up as follows: over 1,558 people attended various training sessions and learning exercises, including training on policy planning, PIM, gender and GRB; parents participated in results-based monitoring at schools and kindergartens; EE training was provided for construction designers and construction material manufacturers, energy experts and staff in the banking sector.

Most of the training was institutionalised at the host organisations. Online policy planning and PIM training sessions (3 modules in total) have been integrated into the training system of the Training and Research Centre (TRC) of MUB. However, the participants have indicated that the quality of the digital format needs to be improved and the content needs to be updated to reflect recent legal reforms of development policy planning laws and other laws concerning the legal status of the capital city (Int 1, 2 with training providers). The

EE training for construction designers and construction material manufacturers is also institutionalised at the MCDA and embedded into the professional training credit system. It is also available in digital format on an online training platform. The training providers were certain that these training sessions will be sustained beyond the project intervention (Int 4 with civil society and private sector).

In terms of organisational capacity development, the evaluation team looked into the following three dimensions: guidelines adopted, systems introduced and ownership. At MUB, the LEEAP has been developed and the evaluation team assumes that it will be approved and adopted soon.

In terms of capacity development at society level, cooperation and partnership developed well. EEP contributed and participated in several working groups, transferring the knowledge and best practice acquired by the project. The most prominent partnership was the working group established to develop the LEEAP. There were also working groups to update the web-based database to calculate greenhouse gas emissions, which had previously been developed by the UNDP's NAMA project and a working group set up to identify ways to integrate the EE criteria into government mortgage guidelines (Int 3 with partner organisations).

Sustainability dimension 1 – Capacities of the beneficiaries and stakeholders – scores **20 out of 20 points**.

Sustainability – Dimension 2: Contribution to supporting sustainable capacities

The project has contributed to all the above-mentioned capacity developments at an individual and organisational level.

Moreover, EEP evidently contributed to the updates of the regulation, standards and policies. Besides the most obvious contribution to the development of the LEEAP, EEP contributed to the update of the building thermal norm standard and to the development of the Green Building Council. The Ministry of Finance expressed its interest in EEP's contribution to the update of the PIM procedure, which will further ensure the EE integration into PIM.

Overall, key stakeholders greatly valued GIZ's contribution to building capacity in energy and EE (Int 1, 2 with partner organisations).

In order to ensure sustainability in the future, EEP's contribution to establishing sustainable partnership mechanisms in implementing the LEEAP and further scaling up the project achievements are crucial. In this respect, partners specifically requested capacity-building on EE for local staff and institutions in the provinces (Int 2, 4, 11 with the partner organisations).

The Methodology to Plan Refurbishment Projects in the Education Sector of Ulaanbaatar City was adopted by Governor's Order in 2020 and was used to rank and select the schools and kindergartens for refurbishment in 2021 and 2022. This guideline was accompanied by the Building and Investment Data Management System. In addition, MUB's gender sub-programme can contribute to the sustainability of GRB promotion. Moreover, EE rating criteria for banks have been developed and piloted. The main challenge to organisational capacity development is still the high rate of staff turnover in the public sector. Many key partners expressed the need to continue building personnel capacity and professionalising the current staff in EE (Int 1–4 with partner organisations). Furthermore, the resilience of the developed EE policy will also depend on whether a dedicated unit for implementation of LEEAP, coordination and stakeholder engagement will be established.

The main challenge relating to sustainability was the partners' financial capacity. Representatives of the educational sector in particular were somewhat doubtful that the refurbishments would continue in a similar manner after the project ended due to the lack of budget resources (Int 9, 10 with partner organisations). MUB, on the other hand, was very optimistic about continuing public investment practices in the education sector. Its

optimism is based on the recent reform of the Law on Legal Status of the Capital City (Int 4 with partner organisations). Here too, ownership of the changes depends heavily on the sustainability of the leadership. When leaders change, priorities often shift.

As far as raising awareness of energy efficiency among students and the general public is concerned, the project continuously disseminated information on the benefits of energy efficiency, passive houses, energy-efficient technologies, etc.

Sustainability dimension 2 – Contribution to supporting sustainable capacities – scores **30 out of 30 points**.

Sustainability – Dimension 3: Durability of results over time

The general prospects for the integration of EE into construction and its promotion are good. Major partners and other stakeholders indicated the growing importance of the government's commitment to reducing CO₂ emissions and ensuring green and sustainable development. This explains why the legal and regulatory framework is growing more favourably for the achievement of the project's objective (Int 1–4 with partner organisations).

In addition, other stakeholders, private actors and the financial sector are recognising the growing social and public demand for EE services and products. The growing number of green and eco loans and financial services reflect this trend (Int 1–3 with civil society and private actors).

In terms of public demand, the policy and regulatory framework is generally favourable and stable. The main risk factor in this respect is the high turnover of people in political office and leaders, which could result in a change of priorities or the disruption of current policies and mechanisms.

The durability of the project's results will also depend largely on the advocacy and communication of the project results and achievements. The results of the project are not only limited with the current stakeholders, but also with the others relevant ministries and GoM in general, provinces, private actors and financial stakeholders. One of the cornerstones of future sustainability and continued integration of EE into the construction sector mentioned by the stakeholders was a financial mechanism involving investors, public private partnership platforms, etc. (Int 3, 7 with partner organisations).

As for the durability of the results of pilot projects, all the stakeholders and beneficiaries of the refurbishment of schools and kindergartens were confident about the durability and quality of the work. They indicated that the expected lifespan of the refurbished buildings had been significantly improved (Int 7–10 with partner organisations, Foc Dis 3, 4).

As for the pilot project in the EE housing loan scheme, both banks and beneficiaries said that without concrete control and a quality assurance mechanism for the construction companies and the certification system of EE houses, this scheme will face challenges regarding the quality of construction and disputes between banks, borrowers, and construction companies (Int 1–3 with civil society and private sector, Foc Dis 7). In other words, the EE housing loan scheme is a new financial product with considerable market potential. However, to ensure that this product meets the needs and capacities of the target group and is well organised and risk free for all parties involved, further developments and certain reforms to relevant regulations need to be made.

Sustainability dimension 3 – Durability of results over time – scores **47 out of 50 points**.

Methodology for assessing sustainability

Table 17: Methodology for assessing OECD/DAC criterion: sustainability

Sustainability: assessment dimensions	Basis for assessment	Evaluation design and empirical methods	Data quality and limitations
Capacities of the beneficiaries and stakeholders	The assessment will be based on the concrete outputs and its indicators mentioning the capacity development. The HCD matrix will be evaluated and assessed with regards to sustainability.	<p>Evaluation design: the analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners, receivers of HCD analysis and assessment of the certificates of the final examination for the training with respect to their successful completion 	No major limitations were identified.
Contribution to supporting sustainable capacities	Gathering the opinion of stakeholders regarding the added value of the project's impact and outputs	<p>Evaluation design: the analysis followed the analytical questions from the evaluation matrix (see Annex); no specific evaluation design was applied.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners analysis and assessment of the service providers 	No major limitations were identified.
Durability of results over time	<p>Analysis of the existence and effectiveness of tools to ensure sustainability (such as pilot projects), financing mechanisms created with the existence of factors strengthening or inhibiting sustainability</p> <p>The share of the project providers that received feedback on sustainable aspects from target groups or final beneficiaries after the completion of pilot projects (that is energy efficiency refurbishments). The share of interviewees assessing that the programme and GIZ development cooperation projects in Mongolia continue to yield positive effects after the termination of external support</p>	<p>Evaluation design: assess the possible factors that enhance or inhibit sustainability, including ownership/commitment, economic/financial, institutional, technical, socio-cultural and environmental sustainability aspects.</p> <p>Empirical methods:</p> <ul style="list-style-type: none"> interviews/FGDs with political and implementing partners, receivers of HCD analysis and assessment of the certificates of the final examination for the training with respect to their successful completion 	No major limitations were identified.

4.8 Key results and overall rating

The project's most obvious strength was definitely its technical national staff. All interviewees praised the project staff's knowledge of energy efficiency. The partners also considered GIZ a trustworthy partner. Despite the low prices consumers pay for energy and their lack of knowledge and motivation to invest in energy efficiency measures, the project found a way to overcome these barriers and enable investments in EE refurbishments and the construction of new energy-efficient houses by developing blueprints and increasing the capacities of construction companies, public institutions, financial institutions and citizens.

Apart from energy savings and emission reductions, the project contributed to the improvement of indoor air quality, increased the longevity of buildings, energy conservation norms (introduced energy labelling) and the introduction of energy audits. EE refurbishments also had a direct impact on teachers and students alike, reducing absenteeism and improving mental and physical health, which improved levels of concentration and learning.

The Energy Regulatory Commission accepted that it will be responsible for upscaling the results of the project to other municipalities in Mongolia. In conclusion, the project was a success.

Table 18: Rating and score scales

100-point scale (score)	6-level scale (rating)
92–100	Level 1: highly successful
81–91	Level 2: successful
67–80	Level 3: moderately successful
50–66	Level 4: moderately unsuccessful
30–49	Level 5: unsuccessful
0–29	Level 6: highly unsuccessful

Overall rating: The criteria of effectiveness, impact and sustainability are knock-out criteria: If one of the criteria is rated at level 4 or lower, the overall rating cannot go beyond level 4 although the mean score may be higher.

Table 19. Overall rating of OECD/DAC criteria and assessment dimensions

Evaluation criteria	Dimension	Max	Score	Total (max.100)	Rating
Relevance	Alignment with policies and priorities	30	30	98	Level 1: highly successful
	Alignment with the needs and capacities of the beneficiaries and stakeholders	30	30		
	Appropriateness of the design*	20	18		
	Adaptability – response to change	20	20		
Coherence	Internal Coherence	50	45	95	Level 1: highly successful
	External Coherence	50	50		
Effectiveness	Achievement of the (intended) objectives	30	28	92	Level 1: highly successful
	Contribution to achievement of objectives	30	27		
	Quality of implementation	20	20		
	Unintended results	20	17		
Impact	Higher-level (intended) development changes/results	30	30	93	Level 1: highly successful
	Contribution to higher-level (intended) development results/changes	40	36		
	Contribution to higher-level (unintended) development results/changes	30	27		
Efficiency	Production efficiency	70	60	85	Level 2: successful
	Allocation efficiency	30	25		
Sustainability	Capacities of the beneficiaries and stakeholders	20	20	97	Level 1: highly successful
	Contribution to supporting sustainable capacities	30	30		
	Durability of results over time	50	47		
Mean score and overall rating		100		93	Level 1: highly successful

5 Conclusions and recommendations

5.1 Key findings and factors of success/failure

The project's objectives were well aligned with the actual needs and policy directions of the partners, stakeholders, beneficiaries and government in general, which can be considered a key success factor. The project design and ToC were well developed and practical, and stakeholders acknowledged the experience and competence of the project team. Many interventions benefited from GIZ's presence on the ground, which generated opportunities for activities where needed and desired – at the right time and in the right place. Notwithstanding major challenges in terms of time constraints and external factors, the project proved to be sufficiently flexible and adaptable and was therefore able to influence and contribute to policymaking and institution-building in the country.

The project showed a high degree of relevance in terms of alignment of thematic areas, goals and objectives with BMZ's mandates and the priorities set by Mongolia. The project had a clear approach to integrating gender issues into energy-efficiency planning, investments and a multisectoral approach. An important advantage of the cooperation was the promotion of multi-stakeholder and intersectoral work, which resulted in more inclusive and participatory processes, as well as enhanced ownership in advocacy processes.

Overall, the project's contribution to the intended outcomes by enhancing the capacities of all partners, stakeholders and beneficiaries was effective. The project result frameworks capture progressive changes. This means that achievements are measurable and were reported in accordance with SMART (specific, measurable, achievable, relevant, time-bound) criteria.

The project has reached and maintained considerable levels of efficiency over time, with high standards of quality and utility of the products and services. However, these standards, along with management and technical requirements, have translated into pressure to deliver results within tight time frames and a demanding workload for the project team.

A request for a cost-neutral extension was submitted and approved. The project is ongoing and is due to end at the end of March 2022.

Findings regarding the 2030 Agenda

Universality, shared responsibility and accountability

The project ensured effectiveness and efficiency of public investments and sensitivity to gender issues. Transparent, effective and gender sensitive Public Investment Management (PIM) for social infrastructure has been introduced to the Municipality of Ulaanbaatar by developing an action plan to increase transparency of PIM in MUB, PIM related training programmes, introducing evidence-based policy recommendations and policy events, feedback from parents on ongoing projects, etc.

Interplay of economic, environmental and social development

The intended effects of the TC measure in all three dimensions of sustainability are taken into account in the formulation of the impact hypotheses, the methodological strategy and in the definition of the module's objective and the indicators.

The project has impacted on all three dimensions of sustainability. It covered several objectives of the national strategy for implementing the 2030 Agenda (Mongolia Sustainable Development Vision 2030) and contributes in particular to the reduction of heat loss in buildings (Section 2.1.5. Energy and infrastructure sector, Objective 6), improving housing quality and reducing air pollution (Section 2.2.3. Balance of the ecosystem, Objective 2) and to governance for sustainable development (Section 2.4., Objective 1).

In addition, the TC measure contributed directly to the achievement of the objectives for sustainable development SDG 7 (ensuring access to affordable, reliable, sustainable, and modern energy for all), in particular sub-objectives 7.3, 7.b, to SDG 11 (rendering the cities and settlements inclusive, safe, resilient and sustainable), in particular sub-objectives 11.1, 11.6 and 11.c, as well as to SDG 1 (end poverty in all its forms and everywhere), in particular sub-objective 1.5. Furthermore, thanks to the special position of the Municipality of Ulaanbaatar in local government and national policy, the guidelines developed at local level have an impact on national policy development.

Inclusiveness/leave no one behind

The target group of the TC measure is the 1.5 million inhabitants of the City of Ulaanbaatar who suffer from inadequate thermal insulation and the associated health and environmental risks. The project focused in particular on the socially disadvantaged population of the ger districts of Ulaanbaatar (approximately 800,000 people, 416,000 of whom are female). Although all population groups are equally affected, vulnerable groups such as the elderly, pregnant women and children are at even greater risk. By focusing on these population groups in particular, the project adhered to the LNOB principle (leave no one behind) of the 2030 Agenda.

5.2 Recommendations

The project (GIZ) should invest in and develop a strategy for communication and dissemination to increase the use, benefits and sustainability of the knowledge generated within the project, including not only working tools and methodologies but also products (publications, databases, instruments and methodologies for studies, evaluations, and diagnostic analyses). In view of the need to attract new target groups and the emergence of new channels for dissemination, the project should have a specific communication, dissemination and visibility strategy to make up for the shortcomings of traditional channels. This is expected to increase the potential benefits for interest groups and enhance programme multiplier effects, especially to upscale EE refurbishments to other areas of the country. Furthermore, a sustainability plan, an exit strategy for all interventions and better internal and external communication for future plans should be developed.

Frequent elections result in a high turnover of staff in public institutions. This impacts on the project, which has to engage the newly employed staff in the project implementation. One possible way of mitigating this risk would be to engage more staff in its implementation. Due to limited human resources, the additional staff would be involved on a limited basis (that is in human capacity development, dissemination of useful information, etc.)

MUB should work to strengthen and integrate EE and gender equality into PIM integrate methodologies and indicators into national information systems and enhance political dialogues and peer-to-peer experience.

The banking institutions and associations need advanced training on energy efficiency to be organised by GIZ.

All partners have expressed their gratitude for their participation in the study tour organised by the project. They believe that such activities provide new knowledge and promote best practice that can be replicated in the country's policy planning.

Although the interviewed partners requested further technical assistance with a follow-on project, it is important to point out that BMZ is phasing out its activities in Mongolia by 2023. However, GIZ Mongolia will continue to operate on the basis of contracts via other donors such as BMU, DeveloPPP-Funds, global or regional projects, International Services (IS), EU or other funding sources. For this reason, this section focuses on the preliminary findings of the evaluation phase with regards to a holistic approach to energy efficiency in the country.

Although, there is a NAMA project in the pipeline that will build on the capacities and results of the EEP project, aiming to refurbish panel buildings with the stakeholders ERC, MUB and MCUD, the partners have identified the following activities as potential activities for future projects or project activities:

- the continuation of gender-sensitive trainers and training, disaggregation of data according to gender,
- the sustainable scaling up of LEEAP, in particular for smaller and remote municipalities,
- the sustainable scaling up of financing models/mechanisms for energy efficiency,
- the establishment of energy management systems within municipalities and the establishment of a holistic energy efficiency information system, incorporating different software approaches,
- the strengthening of local experts (i.e. training trainers, strengthening service providers, etc.),
- a focus on energy policy and strategic development (i.e. legal and regulatory framework implementation of energy certification and labelling, energy management information system, switching to actual consumption of district heating systems, etc.),
- support for the improvement of vertical and horizontal cooperation through networks, working groups, seminar, events, etc., and
- tapping into renewable energy and sustainable urban mobility projects.

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NSO: Statistical Microdata. Census and survey, [online] <http://web.nso.mn/nada/index.php/catalog/central/about> [23.06.2021]

Annex: Evaluation matrix

OECD-DAC Criterion Relevance - Is the intervention doing the right things? (max. 100 points) The 'relevance' criterion focuses on the intervention's design. It refers to the extent to which the objectives and design of a development intervention are consistent with the (global, country and institution-specific) requirements, needs, priorities and policies of beneficiaries and stakeholders (individuals, groups, organisations and development partners). It also identifies the ability of the intervention's design to adapt to a change in circumstances. "Relevance" is assessed in relation to 1) the time of the intervention design ¹ and 2) from today's perspective ² .								
Assessment dimensions	Filter - project type	Evaluation questions	Clarifications	Basis for assessment / evaluation indicators (e.g. module objective/programme indicators, selected hypotheses, or more generally a definition of the aspects to be used for evaluation)	Evaluation design and empirical methods (Design: e.g. contribution analysis, Follow-the-Money Approach) (Methods: e.g. interviews, focus group discussions, document analysis, project/partner monitoring system, workshop, online survey, etc.)	Data sources (e.g. list of relevant documents, interviews with stakeholder category XY, specific data, specific monitoring data, specific workshop(s), etc.)	Data quality and limitations (Description of limitations, assessment of data quality: poor, moderate, good, strong)	Data quality assessment (weak, moderate, good, strong)
Alignment with policies and priorities	Standard	To what extent are the intervention objectives aligned with the (global, regional and country specific) policies and priorities of the BMZ and of the beneficiaries and stakeholders and other (development) partners? To what extent do they take account of the relevant political and institutional environment?	<ul style="list-style-type: none"> • Orientation at BMZ country strategies and BMZ sector concepts • Strategic reference framework for the project (e.g. national strategies including the national implementation strategy for Agenda 2030, regional and international strategies, sectoral and cross-sectoral change strategies, in bilateral projects especially partner strategies, internal analytical framework e.g. safeguards and gender⁴) • Orientation of the project design at the (national) objectives of Agenda 2030 • Project contribution to certain Sustainable Development Goals (SDGs) • Explanation of a hierarchy of the different policies, priorities (especially in case of contradictions). 	<i>Degree of relevance of the project objectives to:</i> <ul style="list-style-type: none"> - Donors' country strategy (BMZ and SDC), - National development policy: Vision 2050, SDGs, Sustainable Development Vision 2030, Government action plan for 2020-2024, - Sectoral policy framework: the Energy Saving Law and the National Energy Efficiency Action Program. 	Evaluation design: <ul style="list-style-type: none"> - No specific evaluation design applied Empirical methods: <ul style="list-style-type: none"> - Document review - Interviews 	Documents: <ul style="list-style-type: none"> - Mongolia Sustainable Development Vision 2030 - National Air Pollution Action Plan - National Energy Efficiency Action Plan of Mongolia - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in Mongolia - Agreed Minutes on the Appraisal of the Project "Energy Efficient Building Refurbishment in Mongolia" - Energy Master Plan for Ulaanbaatar - Green Development 	Data quality: <ul style="list-style-type: none"> - Good Limitations: <ul style="list-style-type: none"> - As energy efficiency is new to Mongolia (law was adopted in 2015), understanding among stakeholders and available volume of documents, reports data can be limited. - Moreover, due to government turnover, possible upcoming political events, response rate from government stakeholders can be low. 	good

						Strategic Action Plan for Ulaanbaatar 2020 - BMZ Country Strategy for Mongolia - SDC Country Cooperation Strategy 2018-2021 Interviews with: - Donors - Partner organisations		
Alignment with the needs and capacities of the beneficiaries and stakeholders	Standard	To what extent are the intervention objectives aligned with the development needs and capacities of the beneficiaries and stakeholders involved (individuals, groups and organisations)?	<ul style="list-style-type: none"> • Also: consideration of stakeholders such as civil society and private sector in the design of the measure. 	Degree of alignment of project objectives with: <ul style="list-style-type: none"> - Need of integrating EE in construction sector at MUB level in policy planning, PIM (need for technical assistance, capacity building, financial cooperation, etc.) - Need of institutionalizing EE in public and private sector. 	Evaluation design: <ul style="list-style-type: none"> - No specific evaluation design applied Empirical methods: <ul style="list-style-type: none"> - Document review - Interviews 	Documents: <ul style="list-style-type: none"> - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in Mongolia - Agreed Minutes on the Appraisal of the Project "Energy Efficient Building Refurbishment in Mongolia" - Energy Master Plan for Ulaanbaatar - Green Development Strategic Action Plan for Ulaanbaatar 2020 Interviews with: <ul style="list-style-type: none"> - Donors - GIZ - Partner organisations - Civil society and private sector actors 	Limitations: <ul style="list-style-type: none"> - Potential lack of data on sectoral capacity in implementing and integrating EE in construction sector. 	moderate
	Standard	To what extent are the intervention objectives geared to the needs and capacities of particularly disadvantaged and vulnerable beneficiaries and stakeholders (individuals, groups and organisations)? With respect to groups, a differentiation can be made by	<ul style="list-style-type: none"> • Reaching particularly disadvantaged groups (in terms of Leave No One Behind, LNOB) • Consideration of potential for human rights and gender aspects • Consideration of identified risks. 	Degree of alignment of project objectives with the needs and challenges faced by: <ul style="list-style-type: none"> - Ger district population, among this elderly, pregnant women and children in particular (as indicated in the Module Proposal). 	Evaluation design: <ul style="list-style-type: none"> - No specific evaluation design applied Empirical methods: <ul style="list-style-type: none"> - Document review - Interviews 	Documents: <ul style="list-style-type: none"> - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in Mongolia 	Limitations: <ul style="list-style-type: none"> - Potential lack of data on sectoral capacity in implementing and integrating EE in the construction sector. 	moderate

		age, income, gender, ethnicity, etc.?				<ul style="list-style-type: none"> - Agreed Minutes on the Appraisal of the Project "Energy Efficient Building Refurbishment in Mongolia" - Gender Analysis - Integrated Context and Human Rights Analysis Interviews with: <ul style="list-style-type: none"> - Donors - GIZ - Partner organisations - FGDs with beneficiary groups. 		
Appropriateness of the design³	Standard	To what extent is the intervention's design appropriate and realistic (in terms of technical, organisational and financial aspects)?	<ul style="list-style-type: none"> • Realistic project goal from today's perspective and in view of the available resources (time, finances, partner capacities) • Consideration of potential changes in the framework conditions • Dealing with the complexity of framework conditions and strategic reference frameworks and with possible overloading • Strategic focusing 	<p>ToC and Results model and its responsiveness to the risks and assumptions, and results hypothesis.</p> <p>Potential impact of COVID-19 and political situation to the feasibility of the intervention design</p>	<p>Evaluation design:</p> <ul style="list-style-type: none"> - No specific evaluation design applied <p>Empirical methods:</p> <ul style="list-style-type: none"> - Document review - Interviews 	<p>Documents:</p> <ul style="list-style-type: none"> - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in Mongolia - Agreed Minutes on the Appraisal of the Project "Energy Efficient Building Refurbishment in Mongolia" - Theory of Change - Results Model <p>Data:</p> <ul style="list-style-type: none"> - from Results Monitor, the GIZ web-based monitoring tool <p>Interviews with:</p> <ul style="list-style-type: none"> - Donors - GIZ - Partner organisations 	No major limitations	good

	Standard	To what extent is the intervention's design sufficiently precise and plausible (in terms of the verifiability und traceability of the system of objectives and the underlying assumptions)?	<p>Assessment of the (current) results model and results hypotheses (Theory of Change, ToC) of the actual project logic:</p> <ul style="list-style-type: none"> • Adequacy of activities, instruments and outputs in relation to the project objective to be achieved • Plausibility of the underlying results hypotheses • Clear definition and plausibility of the selected system boundary (sphere of responsibility) • Appropriate consideration of potential influences of other donors/ organisations outside the project's sphere of responsibility • completeness and plausibility of assumptions and risks for the project results • How well is co-financing (if any) integrated into the overall concept of the project and what added value could be generated for the ToC/project design? 	Assessment of ToC and Results model with focus on linkages/coherence among component activities, outputs and outcomes.	<p>Evaluation design:</p> <ul style="list-style-type: none"> - No specific evaluation design applied <p>Empirical methods:</p> <ul style="list-style-type: none"> - Document review - Interviews 	<p>Documents:</p> <ul style="list-style-type: none"> - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in Mongolia - Theory of Change - Results Model Data: - from Results Monitor, the GIZ web-based monitoring tool <p>Interviews with:</p> <ul style="list-style-type: none"> - Donors - GIZ - Partner organisations 	No major limitations	good
	Standard	To what extent is the intervention's design based on a holistic approach to sustainable development (interaction of the social, environmental and economic dimensions of sustainability)?	<ul style="list-style-type: none"> • Presentation of the interactions (synergies/trade-offs) of the intervention with other sectors in the project design - also regarding the sustainability dimensions in terms of Agenda 2030 (economic, ecological and social development). 	Assessment of economic, environmental and social sustainability dimensions in ToC and project design in overall.	<p>Evaluation design:</p> <ul style="list-style-type: none"> - No specific evaluation design applied <p>Empirical methods:</p> <ul style="list-style-type: none"> - Document review - Interviews 	<p>Documents:</p> <ul style="list-style-type: none"> - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in Mongolia - Theory of Change - Results Model <p>Interviews with:</p> <ul style="list-style-type: none"> - Donors - GIZ - Partner organisations 	No major limitations	good
Adaptability – response to change	Standard	To what extent has the intervention responded to changes in the environment over time (risks and potentials)?	<ul style="list-style-type: none"> • Reaction to changes during project including change offers (e.g. local, national, international, sectoral changes, including state-of-the-art sectoral know-how). 	<p>Responsiveness of the project planning and implementation to the:</p> <ul style="list-style-type: none"> - changes in needs of partners and stakeholders, - changes of the situation (COVID-19 measures and impact on implementation, 	<p>Evaluation design:</p> <ul style="list-style-type: none"> - No specific evaluation design applied <p>Empirical methods:</p> <ul style="list-style-type: none"> - Document review - Interviews 	<p>Documents:</p> <ul style="list-style-type: none"> - Project document: Public Investment in Energy Efficiency Phase 2 - Module Proposal: Energy Efficient Building Refurbishment in 	<p>Limitations:</p> <ul style="list-style-type: none"> - Limited documentation of the changes 	good

				political changes, turnover of the ATSS at partner institutions, etc.)		<p>Mongolia</p> <ul style="list-style-type: none"> - Changes in Results Model, - Changes in Plan of operations, - Modification offers, etc. <p>Data:</p> <ul style="list-style-type: none"> - from Results Monitor, the GIZ web-based monitoring tool (need for action, steering action, etc.) <p>Interviews with:</p> <ul style="list-style-type: none"> - Donors - GIZ - Partner organisations - Civil Society and private sector actors 	
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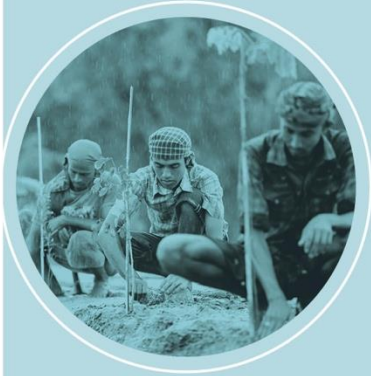
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