Corporate Unit Evaluation Central Project Evaluation

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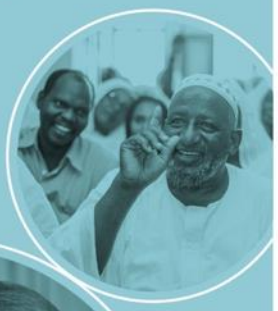

Central Project Evaluation

Modernisation Partnership Energy Efficiency in Hospitals, Ukraine

Project number 2014.2262.5

Evaluation Report

On behalf of GIZ by Josef Seitz (Global21 Consulting) and Stanislav Dubko

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The Evaluation Unit commissioned external independent evaluators to conduct the evaluation. The 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

AEA	Association of Energy Auditors of Ukraine
BMZ	German Federal Ministry for Economic Cooperation and Development
DAC	Development Assistance Committee
DMS	Document Management System
EBRD	European Bank for Reconstruction and Development
EE	Energy efficiency
EEIM	Energy Efficiency in Municipalities
EM	Energy management
EU	European Union
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
HCD	Human capacity development
KfW	Kreditanstalt für Wiederaufbau
LNOB	Leave no one behind
MinRegion	Ministry for Communities and Territories Development of Ukraine (formerly Ministry of Regional Development, Construction, Housing and Communal Services)
MPEE	Modernisation Partnership Energy Efficiency in Hospitals
NEFCO	Nordic Environment Finance Corporation
OECD	Organisation for Economic Co-operation and Development
SAEE	State Agency on Energy Efficiency and Energy Saving of Ukraine
SDG	Sustainable Development Goal
SMART	Specific, measurable, achievable, relevant, time-bound
ToC	Theory of change
UNFCCC	United Nations Framework Convention on Climate Change

The project at a glance

Ukraine: Modernisation Partnership Energy Efficiency in Hospitals

Project number	2014.2262.5
CRS code(s) (Creditor reporting system code)	23183 - Energy conservation and demand-side efficiency
Project objective	Modernisation of energy use in hospitals in Ukraine is implemented in an exemplary way.
Project term	01 August 2016–30 June 2020
Project value	EUR 3,000,000
Commissioning body	German Federal Ministry for Economic Cooperation and Development (BMZ)
Lead executing agency	Ministry for Communities and Territories Development of Ukraine (MinRegion) (former Ministry of Regional Development, Construction, Housing and Communal Services, MinRegion)
Implementing organisations (in the partner country)	Municipalities of Chernihiv and Sumy 17 municipal hospitals, in particular the Maternity Hospital in Chernihiv and St Zinaida's Children's Hospital in Sumy
Other development organisations involved	n.a.
Target group(s)	Staff of national and municipal-level institutions, technical and professional staff from hospitals and energy auditors. The population in Ukraine, in particular in the two partner cities of Sumy and Chernihiv, which benefited from energy-efficient hospitals, were indirect beneficiaries of the project.

1 Evaluation objectives and questions

1.1 Objectives of the evaluation

The Modernisation Partnership Energy Efficiency in Hospitals Ukraine (MPEE) project (hereinafter 'MPEE project' or 'the project') was a joint project between the Federal Republic of Germany and the Ministry for Communities and Territories Development (MinRegion)[1] of Ukraine. It was funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and carried out by MinRegion in cooperation with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The objective of the MPEE project was to implement modernisation of energy use in hospitals in Ukraine in an exemplary way. It was part of the Energy Efficiency Programme in Ukraine and ended on 30 June 2020. The MPEE project was selected as a random sample of GIZ projects within a commission value of over EUR 3,000,000 to be the subject of a final evaluation within GIZ Central Project Evaluations.

The main objective of the evaluation was to assess the success of the project according to the five evaluation criteria agreed by the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD). Moreover, the evaluation examined the quality of implementation of the project. The basis for assessing quality was provided in particular by the success factors of the GIZ Capacity WORKS management model. In this, the evaluation aimed for three objectives: a) to support evidence-based decision-making, b) to promote transparency and accountability and c) to facilitate organisational learning by contributing to effective knowledge management.

The main stakeholders in the evaluation were the project staff and partner organisations, in particular MinRegion, the municipalities of Chernihiv and Sumy, 17 municipal hospitals, in particular the Maternity Hospital in Chernihiv and St Zinaida's Children's Hospital in Sumy, but also other national institutions, such as the State Agency on Energy Efficiency (SAEE). Moreover, the German Embassy, GIZ country office and the GIZ Evaluation Unit were stakeholders in the evaluation.

Although there is no follow-on measure for the project, the results of the MPEE project are expected to be included in an upcoming energy efficiency project. The evaluation will therefore provide useful information for the stakeholders responsible for the planning, design and implementation of the upcoming project and other future projects related to energy efficiency in Ukraine.

The feasibility of the evaluation was very high. No internal or external factors negatively influenced the evaluation. However, due to travel restrictions as a consequence of the COVID-19 pandemic, the evaluation was carried out remotely, leading to slightly restricted direct interaction with stakeholders and impeding site visits. Linguistic challenges were addressed by setting up a multilingual evaluation team able to cover documentation and interviews in Ukrainian, German, English and Russian.

1.2 Evaluation questions

The project was assessed on the basis of standardised evaluation criteria and questions to ensure comparability by GIZ. This was based on the OECD/DAC criteria for the evaluation of development cooperation and the evaluation criteria for German bilateral cooperation: relevance, efficiency, effectiveness, impact and sustainability. Aspects regarding the coherence, complementarity and coordination criterion were included in the other criteria. Specific assessment dimensions and analytical questions were derived from this GIZ framework . These assessment dimensions and analytical questions form the basis for all central project evaluations in GIZ

[1] Former denomination: Ministry of Regional Development, Construction, Housing and Communal Services

and can be found in the evaluation matrix (Annex). In addition, the contributions to Agenda 2030 and its principles (universality, integrative approach, leave no one behind, multi-stakeholder partnerships) were also considered, as were cross-cutting issues such as gender, the environment, conflict sensitivity and human rights. Aspects regarding the quality of implementation are also included in all OECD/DAC criteria. No additional specific questions have been raised by either the partner organisations or the project staff.

2 Object of the evaluation

2.1 Definition of the evaluation object

The object of the evaluation is the Modernisation Partnership Energy Efficiency in Hospitals Ukraine (MPEE) (PN 2014.2262.5) technical cooperation measure, hereinafter referred to as the 'MPEE project' or 'the project'.

Temporal and financial delineation

The originally planned project duration was from May 2015 to April 2018. Due to administrative delays, it actually started on 1 August 2016 and was supposed to run until 31 July 2019. During the course of project implementation there were two changes to the project duration. In November 2018, the project was modified, extending its duration cost-neutrally by six months until 31 January 2020. On 18 November 2019, the project was again extended cost-neutrally by five months until 30 June 2020. The project had a budget of EUR 3,000,000, which was funded by solely BMZ without co-financing partners. Based on the foregoing, the evaluation took account of these modifications and covered the entire project duration and budget.

Geographical delimitation

The project was active in Ukraine, covering the whole country but with a particular focus on the two municipalities of Sumy and Chernihiv. The evaluation focused on the entire project region.

Political and sectoral context and the framework conditions

Ensuring an affordable and reliable supply of energy is a top political priority for Ukraine, a country that is heavily reliant on energy imports from abroad.

Current reforms in the energy sector in Ukraine include implementation of the principles of the 3rd EU Energy Package, formation of modern energy markets, tariff deregulation, privatisation, improvement of corporate governance of state-owned enterprises and progressive reduction of GDP energy intensity. The Government introduced laws on the natural gas and electricity markets to comply with EU standards, began working towards unbundling state-owned enterprises (e.g. the oil and gas company Naftogaz), while increasing the share of renewables in the energy mix. Despite implementing reforms (e.g. introducing a new electricity market that began to function in July 2019), Ukraine has continued to face challenges regarding the policy framework, stability and security of the energy sector. Subsidies and government regulation of markets are still present across all subsectors. Despite some improvement, Ukraine remains one of the most energy-intensive economies in the world.

In the health care sector, around 1,700 hospitals with approximately 300,000 beds[2] are currently among the most energy-intensive public institutions nationwide. Some of these hospitals spend up to 20% of their total budget on energy. The recent sharp increases in energy prices have placed the institutions responsible for running hospitals under significant financial strain and have severely reduced their scope for action. The quality of

[2] As of 01 January 2018, the latest available statistical data according to the State Statistics Service of Ukraine (http://www.ukrstat.gov.ua/). Data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and temporarily occupied territories in the Donetsk and Luhansk regions.

services provided by the hospitals has also suffered, due to constraints on their ability to procure vital medical goods and equipment. Additionally, these hospitals are currently not in a position to carry out energy modernisation measures, even those requiring little or no investment. The goal of the project was therefore to support Ukrainian stakeholders in their efforts to modernise energy use in hospitals in Ukraine.

Cross-cutting issues

The evaluation assessed the extent to which essential cross-cutting issues, such as gender, environment, climate change, conflict sensitivity and human rights, were appropriately addressed during the design and implementation of the project. In particular, this assessment focused on the contribution of the project to the overarching development results, which are defined by the DAC markers of the project proposal. These included reproductive, maternal, newborn and child health (RMNCH-1), environment protection (UR-1) and climate change mitigation (KLM-1).

Levels of intervention

There were and still are several BMZ-funded, energy efficiency-related projects in Ukraine, which focus on different challenges in the country and therefore intervene at different levels. The Energy Efficiency Reforms Ukraine (PN 2015.2069.1) project focuses on the macro level and aims to increase the capacity of national institutions to effectively implement the energy efficiency reform process. The MPEE project focused mainly on the meso and micro levels. Output A, which was intended to enable Ukrainian hospitals to access consulting and/or financial services in the field of energy efficiency, was an intervention at meso level. Through Output B, professional and managerial staff were trained on energy efficiency in hospitals, which also indicates intervention at meso level. The same is true for Output C, which aimed to establish platforms for professional dialogue and exchange of information and experience between relevant actors on the topic of energy efficiency in hospitals. Output D, on the other hand, was an intervention at micro level, as its aim was to implementing pilot projects in specific hospitals. Outputs and results hypotheses are elaborated in more detail in Section 2.2 below.

Position and role within the stakeholder structure

The project was defined as a national project with headquarters in Kyiv, Ukraine. It cooperated with several institutions at national and municipal level as well as with the private sector. The project included implementing partners in government (ministries – with MinRegion as the political partner, SAEE), municipalities (municipal staff, hospitals), civil society (Association of Energy Auditors, EcoClub), universities (National Technical University of Ukraine) and the private sector (energy auditors, engineers, designers). Involvement of private sector actors – local service providers – was key to development of appropriate consulting and financing services for hospitals based on the existing offer of services available and international expertise, conducting training specifically tailored for hospitals in the areas of energy auditing, energy management, financing mechanisms, planning and implementation of energy efficiency (EE) measures. Civil society actors assisted in human capacity development measures, including visits, dialogue events, working groups and networks addressing specialists and managers from hospitals and personnel from the technical departments of municipalities responsible for hospitals.

Other relevant partners of the project were the Nordic Environment Finance Corporation (NEFCO), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Swiss State Secretariat for Economic Affairs (SECO) and the Kreditanstalt für Wiederaufbau (KfW). These financing organisations have also considered investment in energy efficiency (EE) renovation of public buildings in Ukraine. In particular, NEFCO financed investment in EE measures in another building at the MPEE project's pilot partner hospital in Sumy.

Project target group

The target group of the project were staff of national and municipal-level institutions and technical and professional staff from hospitals; energy auditors were a key target within this group. The population of Ukraine, in particular in the two partner cities of Sumy and Chernihiv, which benefited from energy-efficient hospitals, were

indirect beneficiaries of the project.

The partner organisations and associated personnel were as follows.

- **Ministry for Communities and Territories Development (MinRegion) of Ukraine**
  The Ministry of Communities and Territories Development is the Ukrainian government ministry responsible for public housing infrastructure development. As the project's political partner, MinRegion was relevant for steering project activities and multiplying project results.
- **State Agency on Energy Efficiency (SAEE)**
  The State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE) is a central executive authority governed and coordinated by the Ministry of Energy of Ukraine[3] and is responsible for implementing energy efficiency and government renewable energy policy. It is a major stakeholder in the uptake and upscaling of project results.
- **Municipalities of Sumy and Chernihiv**
  Municipalities have an important role to play as multipliers of their experience in implementing energy efficiency measures at municipal level. The cities and municipalities have specific departments which are also responsible for the technical support of hospitals.
- **Hospitals of Sumy and Chernihiv**
  The municipal hospitals are relevant elements of the Ukrainian public health sector. As major energy consumers, hospitals constitute a major target group for energy efficiency measures.
- **Energy auditors**
  Energy auditors carry out inspection surveys and analyse energy flows for energy conservation in buildings. An energy audit is the first step in identifying opportunities to reduce energy costs and carbon footprint. In the project, energy auditors mainly played a role as multipliers.

2.2 Results model including hypotheses

The MPEE project was a contribution from German technical cooperation to implementation of the Energy Efficiency Programme in Ukraine. The project's objective was that modernisation of energy use in hospitals in Ukraine is implemented in an exemplary way. With this, the project was intended to contribute to the objective of the Energy Efficiency Programme in Ukraine (programme objective at impact level) that Ukraine makes progress in improving energy efficiency. Upon close examination, the evaluation found that the project was strategically closely aligned to the United Nations Strategic Development Goals (SDGs), particularly SDG 7 (ensuring access to affordable, reliable, sustainable and modern energy for all) and SDG 13 (taking urgent action to combat climate change and its impacts), but also to SDGs 3, 8, 9 and 17. To achieve its objective, the project was structured into four outputs: Output A – energy efficiency consulting and financial services for hospitals, Output B – training of hospital staff, Output C – platforms for professional dialogue and exchange and Output D – pilot projects. Achievement of the project objective was measured through three indicators (see Section 4.3), which were maintained in the two cost-neutral modification offers. The outputs were measured by output indicators, also described in the following as 'results'. Based on the foregoing context, this section of the evaluation report accordingly recognises the theory of change (ToC) as the central basis for the expected theory-based evaluation approach. It is therefore essential for assessing all five OECD/DAC criteria. In this regard, the subsequent statements provide a description of the ToC and include the central hypotheses, from activities to intended outputs and outcome(s) up to intended impacts. The ToC is explained on the basis of the results model below (Figure 1). Corresponding hypotheses and assumptions are explained in narrative form. A first examination of the project's results matrix and results model during the inception phase showed that it had not been updated, in particular in regard to integration of the project into the newly established Energy Efficiency Programme for Ukraine. For a more coherent analysis of the project's ToC, the results model has been updated,

[3] Until September 2019 the SAEE was subordinate to the Cabinet of Ministers of Ukraine

specifying activity levels and including the programme objective and programme indicators as well as the overarching impacts at the level of the Sustainable Development Goals (SDGs) (see Figure 1).[4]

The system boundary of the project was clearly defined by the project objective, which refers to modernisation of energy use in Ukrainian hospitals. The project thereby contributed to the objective of the Energy Efficiency Programme and to achievement of the SDGs, which were beyond the direct influence of the project. As a national project, MPEE was geographically limited to Ukraine.

[4] Risks and assumptions are not included in the results model but described in the ToC.

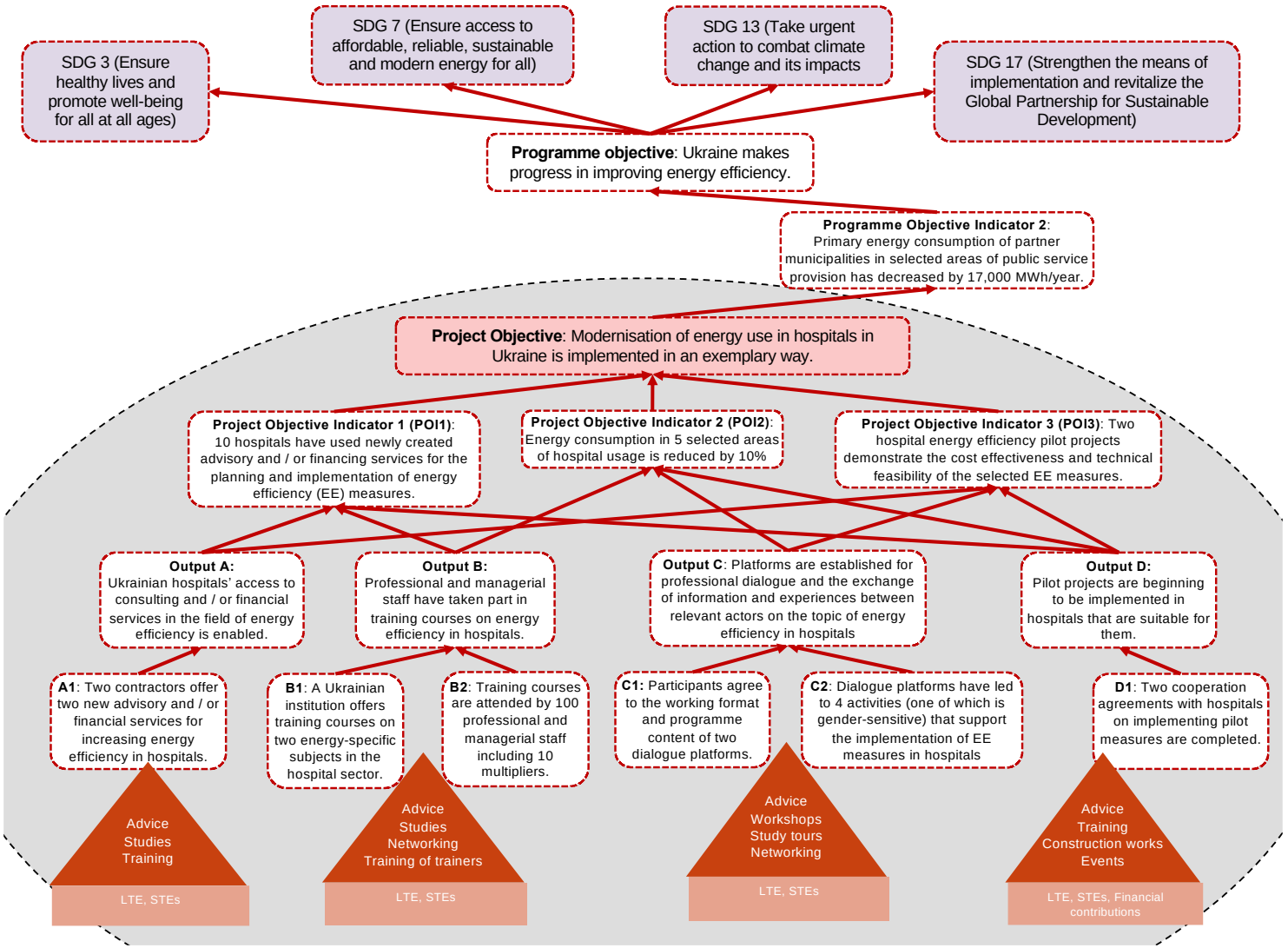

Figure 1: Results model of the MPEE project.

Legend: LTE: long-term expert; STE: short-term expert; POI: project objective indicator; SDG: Sustainable Development Goal

Output A (energy efficiency consulting and financial services for hospitals):

Output A aimed to enable Ukrainian hospitals to access to consulting and/or financial services in the field of energy efficiency. To this end, the project focused on strengthening the range of advisory and/or financial services for increasing energy efficiency in hospitals offered by service providers. At activity level, an analysis of the existing need for advice and support was first carried out. Together with local service providers, the project then developed appropriate consulting services based on the range of consulting and financing services that already existed and provided international expertise. Employees of energy service providers were trained to implement energy efficiency measures in hospitals (including energy audits, technology options such as heating and control technology, economic calculations). In addition, the project made use of both know-how available in Germany and existing experience in Ukraine in financing energy efficiency measures in the hospital sector. These activities were intended to contribute to Result A1: Two contractors offer two new advisory and/or financial services for increasing energy efficiency in hospitals.

The **hypothesis** derived for Output A was as follows:

- The technical support provided to service providers (activities) enabled hospitals to access consulting and financial services in the field of energy efficiency (Output A).
- By using the newly created advisory and/or financing services for energy efficiency (EE), hospitals demonstrated that modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).

The **assumption** regarding this output and its associated results was that service providers offer qualified personnel and the necessary financial resources for the development of new services. Moreover, it was assumed that the hospitals were willing and had the funds to finance the consulting services offered by the service providers. **Instruments** used for Output A included deployment of long-term and short-term experts, human capacity development (HCD) measures as well as procurement of equipment and financial contributions.

Output B (training of hospital staff):

Output B focused on training courses on energy efficiency for professional and managerial staff in hospitals. For this, the project carried out measures for human capacity development, in particular training specifically tailored for hospitals in the areas of energy audits, energy management, financing mechanisms and planning and implementation of energy efficiency measures. Further human capacity development (HCD) measures included visits and dialogue events.

The **hypothesis** derived for Output B was as follows:

- The project's technical support for one or more local training institutions (activities) resulted in a Ukrainian institution offering training courses on two energy-specific subjects in the hospital sector (Result B1) attended by professional and managerial staff in hospitals (Result B2).
- The training of professional and managerial staff in hospitals led to changes in organisational or technical processes or changes in staff behaviour and the use of advisory and/or financing services for the planning and implementation of energy efficiency (EE) measures (Project objective indicator 1 – POI 1).
- This demonstrated that the modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).

The **assumptions** for Output B included that professional and managerial staff in hospitals were available and motivated to participate in training and to implement EE measures. Replacement of political officials (mayors, governors, government ministers), which could lead to changes in the priorities of administrations responsible for hospitals, was identified as a risk. **Instruments** used for Output B included deployment of long-term and short-term experts, HCD measures and procurement of equipment.

Output C (platforms for professional dialogue and exchange):

Output C dealt with the establishment of platforms for professional dialogue and the exchange of information and experience among relevant actors on the topic of energy efficiency in hospitals. For this, the project supported the design of working groups, dialogue events, networks and other communication instruments. It primarily addressed specialists and managers from hospitals, personnel from the technical departments of cities and municipalities responsible for hospitals, service providers and technical institutions.

The **hypothesis** derived for Output C was as follows:

- The project's technical support for stakeholders in hospitals and municipalities (activities) led to the establishment of two dialogue platforms (Output C) and the implementation of energy efficiency measures in hospitals and thereby to reduction of energy consumption (Project objective indicator 2 – POI 2) and to two energy efficiency pilot projects in hospitals (Project objective indicator 3 – POI 3).
- Through this, it was demonstrated that the modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).

The **assumptions** made for Output C included that the participants on the platforms were willing to cooperate and that professional and managerial staff in hospitals were available and motivated to participate in training and to implement EE measures. **Instruments** used for Output C included deployment of long-term and short-term experts as well as procurement of equipment.

Output D (pilot projects):

Output D aimed to implement energy efficiency pilot projects in hospitals. Before the beginning of the project, there were no published studies available that proved the economic and technical feasibility of comprehensive energy efficiency measures – especially low-investment measures – in Ukrainian hospitals. Two pilot hospitals, in which concrete energy efficiency measures, such as low-investment and renovation measures, were implemented, were selected. Selection took place together with the project partners in a transparent selection process. To this end, energy audits, which were also used as training measures (see Output A, were first carried out together with local service providers. These energy audits formed the basis for planning and implementation of specific measures to improve energy efficiency and at the same time provided baseline data. The project also supported the selected hospitals in creating the structures necessary to establish energy management. The experience and results from these pilot projects were presented in material for publication, case studies and in particular in the preparation of a practical guide on energy efficiency for hospitals.

The **hypothesis** derived for Output D was as follows:

- The technical consulting, organisational advice and studies on construction measures (activities) and financial contributions from the project led to implementation of two pilot projects in hospitals (Output D).
- This demonstrated that the modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).

The **assumption** regarding Output D was that hospital managers and the relevant authorities would maintain their currently high levels of interest in energy efficiency. Moreover, it was assumed that hospitals were willing to sign cooperation agreements for implementation of energy efficiency measures. Replacement of political officials (mayors, governors, government ministers), which could lead to changes in the priorities of administrations responsible for hospitals, was identified as a risk. Additionally, there was a possibility that security issues might have impeded or prevented access to individual project sites during project implementation. **Instruments** used for Output D included deployment of long-term and short-term experts, procurement of equipment and financial contributions to pilot projects in the form of grant agreements with Sumy City Council and Chernihiv City Council.

At impact level, it was expected that exemplary implementation of modernisation of energy use in hospitals in

Ukraine (project objective) would contribute to Ukraine making progress in improving energy efficiency (programme objective/impact). Ukraine's progress in improving energy efficiency was expected to contribute to:

- SDG 3 (Ensure healthy lives and promote well-being for all at all ages) through its work in hospitals);
- SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all) by introducing EE measures);
- SDG 13 (Take urgent action to combat climate change and its impacts) by reducing greenhouse gases through EE measures);
- SDG 17 (Strengthen the means of implementation and revitalize the global partnership for sustainable development) by fostering partnerships with municipalities and strengthening domestic resource mobilisation);
- DAC marker 'Reproductive, maternal, newborn and child health' (RMNCH-1) through its work in maternity and children's hospitals);
- DAC marker 'Environmental protection' (UR-1) by indirectly reducing water consumption and air pollution;
- DAC marker 'Climate change mitigation' (KLM-1) by reducing greenhouse gases through EE measures.

For more details, please refer to Section 4.4 under Impact dimension 2.

3 Evaluability and evaluation process

3.1 Evaluability: data availability and quality

Basic documents

The evaluability of the project depended on the availability of several basic documents and monitoring data. These documents are outlined in Table 1 below.

Table 1: Availability and quality of basic documents

Basic document	Is available *(Yes/No)*	Estimation of actuality and quality	Relevant for OECD/ DAC criterion:
Project proposal	Yes	Actuality and quality are okay.	all
Programme proposal	Yes		
Modification offers	Yes	Cost-neutral prolongation Actuality and quality are okay.	all
Contextual analysis	Yes	Actuality and quality are okay.	Relevance, effectiveness, impact, sustainability
Peace and Conflict Assessment (PCA) matrix	Yes	Actuality and quality are okay.	Relevance, effectiveness, impact, sustainability
Gender analysis	Yes		
Environment and climate assessment	Yes		
Assessment of CO2 emissions of hospitals	Yes		
Progress reports available for 2017, 2018 and 2019	Yes	Actuality and quality are okay.	all
Evaluation reports		Not applicable	
Country strategy BMZ	No	No country strategy exists	
National strategies	Yes	Energy Strategy Ukraine National Energy Efficiency Action Plan 2020 Ukrainian national SDG targets	Relevance, impact
Sectoral/ technical documents (please specify)	Yes	Energy Strategy Europe EU Energy Efficiency Directive	Relevance, effectiveness, impact, sustainability
Results matrix	Yes	Actuality and quality are okay.	all
Results model available and updated by the evaluation team.	Yes	The evaluation team updated the model during the inception phase in January 2020	Relevance, effectiveness, impact, sustainability
DMS online monitoring system	Yes	Actuality and quality are okay. The system includes partner data.	all
Stakeholder maps	Yes	Actuality and quality are okay.	all
Capacity development (CD) strategy	Partly	CD strategy document is available, but capacity needs were not assessed	all
Steering structure	Yes	Actuality and quality are okay.	all
Plan of operations	Yes	Actuality and quality are okay.	Effectiveness, efficiency, impact, sustainability
Cost data (at least current cost-commitment report **–** *Kostenträger-Obligo-Bericht*). If available: cost data assigned to outputs	Yes	Actuality and quality are okay.	Efficiency
Excel sheet assigning staff workmonths to outputs	Yes	Actuality and quality are okay.	Efficiency
Documents regarding predecessor project(s) (please specify if applicable)		Not applicable	
Documents regarding follow-on project (please specify if applicable)		Not applicable	

In conclusion, most of the data required for the evaluation were readily available.

Baseline and monitoring data, including partner data

The MPEE project utilised the GIZ Document Management System (DMS) for monitoring, reporting and documenting project information. Project monitoring and reporting were based on the project results matrix, its corresponding indicators and the results matrix of the programme. At outcome level, three indicators were defined for measuring achievement of the project objective. All project objective indicators were SMART (specific, measurable, achievable, relevant, time-bound).

Each of the four outputs were measured by one or two indicators, which corresponded moderately well with the SMART criteria. However, Output B (Professional and managerial staff have taken part in training courses on energy efficiency in hospitals) and Result B2 did not describe a change in the partner system (use of products), but rather a product itself. Nevertheless, at the time the project proposal was written (2014), product-based indicators were commonly used at output level.

Both the outcome and output indicators included clear baseline and target values and sources of verification for the monitoring data. The baseline data used were mostly of low complexity and did not need further assessment, except for the baseline for calculations of POI 2, which was defined by the project as maximum energy consumption for one of the years in the period 2015 to 2018 for each hospital separately. Moreover, there was insufficient evidence, if weather correction[5] was properly applied, to calculate the energy consumption. The monitoring system also used data from partner organisations, including for the CO2 emissions of the Sumy and Chernihiv municipal hospitals for the period 2015–2019, for energy consumption of Sumy and Chernihiv municipal hospitals for the period 2015–2019 and service usage (monitoring hospital patient numbers for 2019).

Data collection methods used included written requests, online monitoring systems, desk research, studies on relevant topics (online energy-monitoring system). The data collection methods were adequate except for the baseline calculations. The project did not apply KOMPASS surveys.

The monitoring system was used and followed up by the project team. At the time of the evaluation, the monitoring system was up to date and the monitoring data was reliable and sufficient for the evaluation.

The evaluation confirmed that there was sufficient alignment between the indicators and the respective outputs and outcome, so there was no need for the evaluators to adapt the outcome indicators.

Other and secondary data

The evaluation used other secondary sources of data. These included documents such as BMZ Strategy Paper 2030, the 2030 Agenda for Sustainable Development and others, as well as information provided on stakeholders' websites and generally accessible on the internet (see Annex 2).

3.2 Evaluation process

Stakeholders in the evaluation

The evaluation of the MPEE project was based on a participatory approach and involved key stakeholders during the inception and implementation phases of the evaluation. The stakeholders were selected based on several criteria:

- involvement in project activities;
- diversity of stakeholder groups (public, private, civil society, donor community);
- knowledge of sectoral and political contexts.

As the project activities did not directly address final beneficiaries and the results of energy efficiency measures

[5] Weather correction (or weather normalisation) of energy consumption enables like-for-like comparison of energy consumption from different periods with different weather conditions using heating degree days (or HDD), which is a measure of how much (in degrees) and for how long (in days) the outside air temperature was lower than a specific 'base temperature'.

in hospitals were not expected to immediately lead to tangible effects for the population, final beneficiaries were not selected for the evaluation.

For the inception phase, the evaluation team conducted a face-to-face briefing and a debriefing meeting with the MPEE project team in Kyiv, Ukraine. Methodological approaches, findings and conclusions of the inception mission were validated by the MPEE project team and GIZ Evaluation Unit through commenting on the inception report. During the evaluation mission itself, interviews were conducted with representatives from the stakeholder group using exclusively virtual meeting technology (MS Teams) due to travel restrictions internationally and locally in Ukraine during the COVID-19 lockdown. The following stakeholders were interviewed during the evaluation phase.

- **Donors:** Nordic Environment Finance Corporation (NEFCO), European Bank for Reconstruction and Development (EBRD), Kreditanstalt für Wiederaufbau (KfW), European Investment Bank (EIB), Swiss State Secretariat for Economic Affairs (SECO);
- **GIZ:** GIZ MPEE project team, GIZ Regional Director, GIZ Cluster Coordinator, GIZ Energy Efficiency in Municipalities (EEIM) project;
- **Partner organisations (direct target group):** Ministry for Communities and Territories Development of Ukraine (MinRegion), State Agency on Energy Efficiency (SAEE), Chernihiv Municipality, Sumy Municipality, Chernihiv Maternity Hospital, St Zinaida's Children's Hospital in Sumy, Chernihiv City Hospital No. 1, Chernihiv City Hospital No. 2, Sumy City Council Primary Health Care Facility No. 2;
- **Other stakeholders (public actors, other development projects etc.):** Covenant of Mayors East (CoM East), Energy Efficient Cities of Ukraine (EECU) Association, German Embassy;
- **Civil society and private actors:** Association of Energy Auditors, Association of Ukrainian Hospitals, NGO EcoClub, DELTA Holding GmbH (energy auditors), e7 Energie Markt Analyse GmbH (energy auditors), iC consulenten (energy auditors), TOP-Inform (energy auditors);
- **Universities and think tanks:** National Technical University of Ukraine.

In total, 26 stakeholders, represented by 51 people (19 women and 32 men), contributed to the evaluation. Additionally, the evaluation team conducted a briefing and a debriefing meeting (all online via MS Teams) with the staff of the MPEE project to discuss mission findings. In accordance with data protection requirements, citation of interviewees was anonymised using an interview coding list.

Participation of stakeholders, partners and target group(s) in the evaluation

The participation and responsiveness of stakeholders and partners in the evaluation was satisfactory. There was a high degree of interest from the majority of the stakeholders in documenting their viewpoints on the project in the evaluation exercise. The project team demonstrated a high degree of commitment to the evaluation exercise and gave significant support to the evaluation's arrangements, in particular, those related to the challenge of organising completely remote evaluation (see below for further details).

Table 2: List of evaluation stakeholders and selected interviewees

Organisation/company/target group	Overall number of persons involved in evaluation (including gender disaggregation)	No. of interview participants	No. of focus group participants	No. of workshop participants	No. of survey participants
Donors	7 (3 women, 4 men)	7			
Nordic Environment Finance Corporation (NEFCO)					
European Bank for Reconstruction and Development (EBRD)					
Swiss Embassy/SECO					
European Investment Bank (EIB)					
Kreditanstalt für Wiederaufbau (KfW)					
GIZ	10 (6 women, 4 men)	10			
GIZ MPEE project team					
GIZ Regional Director for Ukraine and Belarus					
GIZ Cluster Coordinator					
GIZ Energy Efficiency in Municipalities (EEIM) project					
Partner organisations (direct target group)	18 (6 women, 12 men)	15	7		
Ministry for Communities and Territories Development of Ukraine (MinRegion)					
State Agency on Energy Efficiency (SAEE)					
Municipality of Chernihiv					
Municipality of Sumy					
Maternity Hospital, Chernihiv					
St Zinaida's Children's Hospital, Sumy					
Chernihiv City Hospital No. 1					
Chernihiv City Hospital No. 2					
Primary Health Care Facility No. 2 in Sumy					
Other stakeholders (public actors, other development projects, etc.)	6 (2 women, 4 men)				
German Embassy					
Energy Efficient Cities of Ukraine (EECU) Association					
EcoClub (NGO)					
Association of Ukrainian Hospitals					
Covenant of Mayors East (CoM East)					
Civil society and private actors	9 (1 woman, 8 men)		9		
Association of Energy Auditors of Ukraine (AEA)					

DELTA Holding GmbH (energy auditors)					
TOP-Inform (energy auditors)					
iC consulenten (energy auditors)					
e7 Energie Markt Analyse GmbH (energy auditors)					
Universities and think tanks	1 (1 woman)				
National Technical University of Ukraine					

Evaluation design

The evaluation was designed as a fully remote evaluation (except for the inception mission) using virtual meeting technology (MS Teams) due to travel restrictions internationally and locally in Ukraine during the COVID-19 lockdown. The project team made significant efforts to plan, organise and kick-start each of the meetings. As a result, all planned virtual meetings took place according to schedule. The virtual methods used in the evaluation mission generally worked well, with few instances of connectivity challenges. This allowed a proper level of verbal interaction with interviewees, which was also supported in most cases by video transmission. It should be noted that the evaluators considered the remote evaluation format to be generally functional but still hampered by the lack of most of the non-verbal feedback from interviewees and the lack of opportunity to gather additional information from visiting the project sites and to communicate with people on the ground. A particular challenge occurred when conducting focus group discussions – virtual methods of communication do not allow for the potential benefits of a focus group discussion to materialise. Such benefits typically occur when members of the group naturally get involved in a group dynamic with a wide range of direct reactions to and interactions with other group members. The limitations of virtual meetings turn discussions into a succession of individual interviews within one group and do not allow for a vibrant group dynamic to emerge.

Roles of the international and regional evaluators

The evaluation team consisted of an international and a local evaluator; the international evaluator was Mr Josef Seitz and the local evaluator was Mr Stanislav Dubko. Mr Seitz is an international expert in the fields of climate change, the environment, energy and sustainable economic development and has over 20 years of experience in designing, accompanying and evaluating international projects of varying size, scope and complexity. Mr Seitz has also functioned as the Regional Coordinator for the LIFE environment programme of the DG Environment (European Commission), where he was responsible for the evaluation and monitoring of the French LIFE projects. Previously, he was a programme manager and technical advisor in GTZ development projects in Argentina and Morocco. Stanislav Dubko is a local Ukrainian expert in the field of green finance, financial and energy sector development programmes, energy efficiency investment and regional development. He has over five years of experience in designing and assessing financing vehicles and project financing models. Mr Dubko was also involved as an international finance expert in projects in Kazakhstan, Uzbekistan and Mongolia. Previously, he was an executive director for independent credit rating agencies in Ukraine for 15 years.

As the preceding information shows, the evaluators collectively have a comparative advantage based on their areas of interest and experience in project management, project evaluation, energy and climate change. Both evaluators also have an appreciation and understanding of the cultural, political, social and economic environment of Ukraine and the target groups of the project. This level of appreciation and understanding was noted as a critical success factor for an evaluation of this scope. In terms of responsibilities, during the evaluation exercise, Mr Seitz functioned as the team leader and was supported by Mr Dubko. Mr Seitz was ultimately responsible for ensuring proper evaluation preparation, implementation, quality assurance and backstopping. Mr Seitz was also responsible for direct reporting to GIZ. Mr Dubko provided assistance on the evaluation by contributing to the inception report and annexes and corresponding revisions, assisted in data collection and

interpretation, supported the preparation of the evaluation mission, participated in the remote evaluation mission and contributed to the evaluation report, its associated annexes and corresponding revisions.

During the remote evaluation mission, the evaluators jointly carried out collection of the data necessary for the evaluation by conducting interviews, focus groups and by other methods defined in the inception phase with the stakeholders involved. They then conducted analysis, triangulation and validation of the data in a thorough and systematic manner, which resulted in the development of this evaluation report.

4 Assessment according to OECD/DAC criteria

4.1 Long-term results of predecessor project(s)

The MPEE project was a project (module) of a programme and did not have predecessor projects. This section is therefore not applicable.

4.2 Relevance

Evaluation basis and methodology for assessing relevance

Evaluation basis

Evaluation of the relevance criterion was based on analysis of the extent to which the project design is consistent with the following four assessment dimensions and evaluation questions:

- The project design is in line with the relevant strategic reference frameworks. This examines the design's fit with strategic reference frameworks, which can be sectoral or global strategies (e.g. a BMZ sector strategy), international conventions, global initiatives or BMZ's International Cooperation with Regions for Sustainable Development (IZR) measures.
  - Which strategic reference frameworks are relevant for the project? (e.g. national strategies incl. national implementation strategy for Agenda 2030; regional and international strategies; sectoral, cross-sectoral change strategies; if a bilateral project, partner strategies; internal analysis frameworks, including safeguards and gender.)
  - To what extent is the project design in line with the relevant strategic reference frameworks?
  - To what extent are the interactions (synergies/trade-offs) of the project interventions with other sectors reflected in the project design – including in regard to the sustainability dimensions (environmental, economic and social)?
  - To what extent is the project design in line with the BMZ sectoral strategies?
  - To what extend is the project design in line with the objectives of Agenda 2030? To which Sustainable Development Goals (SDGs) is the project intended to contribute?
  - To what extent is the project design complementary to partner efforts or efforts of other relevant organisations (subsidiarity and complementarity)?
- The project design matches the needs of the target group(s). The stakeholder groups include direct target groups who are intermediaries, executives, specialists and executives of partner organisations or employees of BMZ and other organisations of the German development cooperation and disadvantaged groups.
  - To what extent is the chosen project design geared to the core problems and needs of the target group(s)?
  - How are the different perspectives, needs and concerns of women and men represented in the project design?
  - To what extent was the project designed to reach particularly disadvantaged groups (leave no one behind – LNOB – principle)? How were identified risks and potentials for human rights included in the project design?
- The project is adequately designed to achieve the chosen project objective. This area examines the adequacy of the project design for achieving the project objective and fundamentally scrutinises the project's underlying theory of change (ToC).
  - To what extent is the project objective realistic from today's perspective and the given resources (time, financial, partner capacities)?
  - To what extent are the activities, instruments and outputs adequately designed to achieve the project

objective?
    - To what extent are the underlying results hypotheses of the project plausible?
    - To what extent is the chosen system boundary (sphere of responsibility) of the project (including partners) clearly defined and plausible?
    - Are potential influences from other donors/organisations outside the project's sphere of responsibility adequately considered?
    - To what extent are the assumptions and risks for the project complete and plausible?
    - To what extent does the strategic orientation of the project address changes in its framework conditions?
    - How was the complexity of the framework conditions handled? How was any possible overloading dealt with and strategically focused?
- The project design was adapted to changes in line with requirements and re-adapted where applicable. This dimension assesses the responsiveness of the project to changes during project implementation (e.g. local, national, international or sectoral changes, including state-of-the-art sectoral know-how, policy directives, global agreements and new and emerging stakeholder needs).
    - What changes have occurred during project implementation? (e.g. local, national, international, sectoral, including in state-of-the-art sectoral know-how)?
    - How were such changes dealt with in regard to the project design?

The recent reforms in the energy sector in Ukraine, which aimed to establish modern energy markets, introduce tariff deregulation and eliminate energy subsidies, led to sharp increases in energy prices. In parallel, decentralisation reforms shifted responsibility for maintenance of a large number of public buildings to local (municipal) level. This placed the institutions responsible for running hospitals under significant financial strain, as some of these hospitals spend up to 20% of their total budget on energy. The capacity of Ukrainian municipalities to invest in energy modernisation measures is limited, even when such investment provides for a relatively quick payback time (2–3 years for certain simple measures).

The overall objective of the project was to support Ukrainian stakeholders in their efforts to modernise energy use in hospitals in Ukraine. The project was structured to ensure that Ukrainian stakeholders developed the capacity to plan and implement modernisation projects in hospitals. In this regard, the project stakeholders included government ministries, municipalities (municipal staff, hospitals), civil society and private sector actors.

Assessment methodology

For each of the assessment dimensions stated above, a number of questions, as already outlined above under the heading of evaluation basis, and corresponding evaluation indicators were used to cover all relevant evaluation aspects. For further details, see the evaluation matrix (Annex 1).

Empirical methods

The evaluation utilised the evaluation matrix in Annex 1 as a guide for collecting key information on the relevance of the project. The documents used to assess the project’s relevance included the United Nations 2030 Agenda for Sustainable Development, the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. The evaluation also examined the project’s alignment with the German Government’s *Climate Action Plan 2050*, the BMZ strategy paper *Development Policy 2030* (2018) and the BMZ brochure *Sustainable Energy for Development* (2014). Moreover, the evaluation assessed the project’s alignment with the EU Energy Efficiency Directive (EU Directive 2012/27/EU), the Ukrainian Energy Strategy (2017), the National Energy Efficiency Action Plan 2020 and the Ukrainian national SDG targets.

Additionally, the project design was assessed for its consistency with international standards and agreements, in particular the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (see Section 4.4). Through this assessment, the evaluation examined the extent to which the synergies and/or trade-offs of the project regarding the sustainability dimensions (environmental, economic and social) were reflected in the project design.

As a means of gaining further context on the relevance of the project, the active websites of the various stakeholders were also reviewed. These included the project donor, the German Federal Ministry of Economic Cooperation and Development (BMZ); partner organisations – Ministry for Communities and Territories Development of Ukraine (MinRegion), the State Agency on Energy Efficiency (SAEE), the municipalities of Sumy and Chernihiv, the Nordic Environment Finance Corporation (NEFCO); public actors and other development projects, such as the United Nations Development Programme (UNDP), the World Bank, EBRD, EIB, KfW, the Eastern Europe Energy Efficiency and Environment Partnership (E5P), the Covenant of Mayors East (CoM East), the Association of Energy Efficient Cities of Ukraine (AEECU), the Swiss State Secretariat for Economic Affairs (SECO); the online energy efficiency platform (in Ukrainian and Russian) at eeplatform.org.ua; civil society (Association of Energy Auditors, EcoClub); and universities (National Technical University of Ukraine).

In addition to the websites identified above, relevant project documents were used and assessed against the evaluation questions. These project documents included the project proposal, results logic, results matrix, annual project reports, press releases, working papers, policy briefs and operational plans. In addition, other relevant project documents were analysed. These provided further information and data on the concept for training on energy management in hospitals, analysis of financing opportunities, a proposed investment plan based on energy audits conducted in Sumy and Chernihiv hospitals, energy consumption in municipal hospitals in Sumy and Chernihiv for 2015–2019 and CO2 emissions by Sumy and Chernihiv municipal hospitals for 2015–2019 (see Annex 2: Reference list).

In addition to information derived from these key project documents, policies, strategic frameworks and the websites of the various stakeholders, the views of selected project stakeholders were gathered during the evaluation mission (for more information on the selected interview partners, see Section 3.2). These were collected in semi-structured interviews based on the evaluation questions. The stakeholders interviewed were members of the project, representatives of government ministries and municipal authorities, staff members of hospitals, experts and practitioners from international organisations, the private sector, academic institutions and civil society. It should also be noted that, as a means of ensuring validity and reliability of the data collected, triangulation was performed by collecting the views of the project partners and the use of expert judgement by the evaluators.

Analysis and assessment of relevance

Relevance dimension 1: The project concept is in line with the relevant strategic reference frameworks

The evaluation recognised that the project had a high degree of congruence with three strategic development frameworks which have established the global agenda for action on climate change related issues – the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. The evaluation also showed that the project supported the aims of the German Government's Climate Action Plan 2050 and the BMZ strategy paper *Development Policy 2030* (2018). In this regard, the project contributed to the aims of the Climate Action Plan 2050, specifically in relation to the German Government's ambitious climate targets, the BMZ strategy paper *Development Policy 2030* (2018) and the BMZ brochure *Sustainable Energy for Development* (2014). The project was fully aligned with the EU Association Agreement, the EU Energy Efficiency Directive (EU Directive 2012/27/EU), the EU Directive on the energy performance of buildings (EU Directive 2010/31/EU), the National Energy Efficiency Action Plan through 2020, the Ukrainian Energy Strategy until 2035 (2017), the National Implementation of the 2030 SD Agenda. The evaluation also established that the project had a high degree of congruence with local sustainable economic development strategies (municipal energy plans, sustainable development action plans, sustainable energy action plans) and plans for energy efficiency improvement in public buildings adopted at municipal level. Additionally, the project fitted well with the ongoing decentralisation reforms in Ukraine that transferred many responsibilities and functions (including those related to maintenance of public buildings) from national to local level.

(Ref 1, 2, 3, 18, 21, 37; Int 1, 3, 4, 6, 10, 11 with partner organisation; Int 1, 3, 4, 5 with donor; Int 3, 4, 5 with

other stakeholder; Int 4, 8, 10 with GIZ.)

The evaluation also confirmed that the project complemented other bilateral, national, regional and supplementary global projects and donors that have a focus on energy efficiency in public buildings. Among these are NEFCO's Nordic Initiative for Energy Efficiency and Humanitarian Support – Ukraine and its Energy Saving Credits loan programme. These complementary projects have been directly supporting energy efficiency modernisation in public buildings in Ukraine, promoting and supporting use of best practices in energy management.

(Ref 1, 3; Int 4, 10 with partner organisation; Int 1, 3, 4, 5 with donor; Int 3, 5 with other stakeholder; Int 4, 10 with GIZ.)

For project stakeholders in the private sector, the project was able to align itself with energy auditors offering audit services to hospitals (municipalities) and/or energy certification for hospital buildings. In terms of project stakeholders in the fields of universities and other academic institutions, think tanks and training provision, the evaluation highlighted the project's orientation towards organisations such as the Association of Energy Auditors, EcoClub and the National Technical University of Ukraine.

(Ref 1, 3, 8, 16, 18, 21, 31, 39; Int 8, 14, 15 with partner organisation; Int 3, 4 with donor; Int 6 with other stakeholder; Int 4 with GIZ.)

In summary, the evaluation noted that the project design had a high degree of alignment and congruence with relevant strategic reference frameworks and sectoral and global strategies and development agendas as well as with local sustainable economic development strategies and plans for energy efficiency improvement in public buildings. The project also complemented other bilateral, national, regional and supplementary global projects and donors which have a focus on energy efficiency in public buildings. Additionally, the project was aligned to the formal and informal strategic plans of several project partners, specifically in relation to measures designed to improve knowledge on the theme of energy efficiency in public buildings and to increase the capacity of Ukrainian municipalities to plan and implement modernisation projects in public buildings (30 out of 30 points).

Relevance dimension 2: The project design matches the needs of the target group(s).

The direct target groups included intermediaries, executives, specialists and executives of partner organisations, such as MinRegion, SAEE, municipalities and hospitals. Moreover, energy auditors and their organisations were intermediaries of the project. The evaluation assessed the extent to which the project ensured that the target groups received support for designing, planning and implementing energy efficiency improvements in hospitals. The evaluation also examined the extent to which decision-making stakeholders received access to knowledge, expertise and services and had the opportunity to contribute toward shaping future policy, practice and investments. In this regard, it was found that the project had been able to empower energy auditors to provide high-quality services to hospitals in order to define the opportunities for energy-saving investments and to design energy efficiency measures. It also focused the attention of many municipal authorities and potential investors and donors on hospitals as a specific sector of public buildings where successful modernisation projects are possible (prior to the project, municipalities and financing organisations focused mainly on schools and kindergartens, but not hospitals, when considering modernisation).

(Ref 1, 3, 8, 10, 11, 12, 17, 21, 33, 37, 38, 39; Int 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 with partner organisation; Int 2, 3, 4 with donor; Int 1, 3, 5, 6 with other stakeholder; Int 4, 10 with GIZ.)

The indirect target group was the population of Ukraine, a total population of about 42 million people. In particular, the population in the partner cities, Chernihiv and Sumy, which benefited from newly renovated energy-efficient hospitals, were indirect target groups. Based on information received during interviews with hospital staff and representatives of municipal authorities, the evaluation established that inhabitants of Chernihiv and Sumy who were patients of the two renovated hospitals assessed the modernisation projects favourably – in particular, patients at St Zinaida's Children's Hospital in Sumy (where renovation was completed by the end of 2019)

had already praised the comfortable conditions in the facility during the previous heating season, while patients at the Maternity Hospital in Chernihiv (where construction was still ongoing during the previous heating season) did not object to certain limitations in the use of the building during the construction phase (the facility continued to operate during the project), as they supported the modernisation project in the expectation of a better overall level of medical services in the facility in the future.

(Ref 1, 3, 8, 11, 21, 38; Int 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13 with partner organisation; Int 3, 4 with donor; Int 4, 10 with GIZ.)

The evaluation also assessed the extent to which disadvantaged groups, in particular poor and vulnerable people, were directly targeted by specific interventions in order to address the Agenda 2030 principles of leave no one behind (LNOB) and inclusiveness. The evaluation addressed questions that related to the degree to which gender-specific needs were considered in the project's planning and implementation activities. The evaluation recognised that the project had a focus on the specific health care needs of vulnerable groups, in particular children, by implementing one of the two pilot projects at St Zinaida's Children's Hospital, Sumy. Notably, the overall quality of the facility and the medical services provided by this hospital led to a decision by the Ukrainian health care authorities to designate it as a regional hub for young COVID-19 patients. The evaluation also established that the project specifically considered the needs of women due to gender-specific differences in their health care needs, particularly regarding maternity issues, by conducting the second of the two pilot projects at the Maternity Hospital in Chernihiv.

(Ref 1, 3, 8, 17, 21; Int 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13 with partner organisation; Int 4, 10 with GIZ.)

In summary, the project was designed with a clear focus on strengthening the ability of municipalities to design, plan and implement energy efficiency improvements in hospitals in collaboration with local service providers (e.g. energy auditors) in order to ensure better overall quality of medical services. There was a particular focus in the demonstration pilot projects on the specific health care needs of vulnerable groups – children and maternity hospital patients. Based on analysis of the findings, it was concluded that the project design matched the needs of the target groups (30 out of 30 points).

Relevance dimension 3: The project is adequately designed to achieve the chosen project objective.

The adequacy of the project design to achieve the project objective was evaluated by assessing the underlying theory of change (ToC). The evaluation examined the extent to which the project objective was realistic and whether activities, instruments and outputs were adequately designed to achieve the objective. It also examined the plausibility of the underlying results hypotheses and system boundary. In terms of the project objective as outlined in the introductory chapter of this report, the objective was to implement the modernisation of energy use in hospitals in Ukraine in an exemplary way. Examination of the project design demonstrated that the objective was realistic and activities, instruments and outputs were adequately designed to achieve that objective. However, Project objective indicator 2 focused on reduction of energy consumption only, which was not evaluated as sufficient, as improvement of energy efficiency may not inevitably lead to an absolute reduction of energy consumption but to more efficient use of the energy consumed, e.g. through increased ambient temperature in buildings. An additional indicator would have been necessary to measure this increase in temperature and, as a consequence, improvements in the wellbeing of hospital staff and patients. Due to lack of data on increases in temperature and/or wellbeing, the evaluation did not formulate an additional indicator. The level of realism of the project design was based on the information that project stakeholders and target groups required knowledge of how to approach implementation of energy efficiency improvement projects in hospitals when very little information or demonstration projects in this sector were available in Ukraine.

(Ref 1, 3, 8, 9, 21, 37; Int 1, 3, 6, 7, 8, 10, 11, 12, 14, 15 with partner organisation; Int 3, 4 with donor; Int 2, 6 with other stakeholder; Int 4, 8, 10 with GIZ.)

In looking at the degree to which potential influence from other donors/organisations outside the project boundary and assumptions and risks for the project were adequately considered, the evaluation noted that the project

included a range of stakeholders from the international donor community, academic institutions, civil society and private-sector and public-sector actors. The system boundary of the project was also clearly defined by the project objective, which referred to modernisation of energy use in Ukrainian hospitals. In this respect, the project contributed to the objective of the Energy Efficiency Programme and to achievement of the global SDGs, which was beyond the direct influence of the project. As a national project, it was geographically limited to Ukraine.

(Ref 1, 2, 3, 8, 9, 18, 21; Int_8, 10, 14, 15 with partner organisation; Int 1, 2, 3, 4, 5 with donor; Int 3, 4, 5, 6 with other stakeholder; Int 4, 8, 10 with GIZ.)

The extent to which the project addressed changes to framework conditions in its strategic orientation was examined by conducting an analysis of key project documents and questioning key stakeholders at policy and strategy levels. The results indicated that relevant strategic changes were addressed through the project's governance structure, and changes that were required (such as extension of the project duration) were operationalised by the project team management.

(Ref 1, 2, 3, 8, 9, 18, 21; Int 1, 5, 7, 8, 12, 14, 15 with partner organisation; Int 3 with donor; Int 6 with other stakeholder; Int 2, 3, 4, 5, 10 with GIZ.)

In summary, the project ToC, which included the project objective, outputs and activities, results hypotheses, assumptions and risks, was adequately developed and expressed and was realistic. Based on the evaluation exercise, it was very clear that the project objective indicators were fully aligned with the SMART (specific, measurable, achievable, relevant, time-bound) criteria. However, Project objective indicator 2 focused on reduction of energy consumption only, which was not evaluated as sufficient, as improvements in energy efficiency may not inevitably lead to an absolute reduction in energy consumption but to more efficient use of the energy consumed, e.g. through increased ambient temperatures in buildings. An additional indicator would have been necessary to measure this increase in temperature and, as a consequence, improvement in the wellbeing of hospital staff and patients. Due to lack of available data on temperature increase and/or wellbeing, the evaluation did not formulate an additional indicator. Moreover, operational planning for implementation of the two pilot projects had some flaws related to underestimation of the time needed for project documentation preparation and tendering procedures, which led to project implementation falling behind schedule and some construction works being carried out in unfavourable winter conditions. The majority of the stakeholders also confirmed that the project was strategically focused and aligned to their organisations. Moreover, the level of complexity of the project was adequately addressed. In conclusion, the project design was assessed as satisfactorily designed to achieve the chosen project objective (12 out of 20 points).

Relevance dimension 4: The project design was adapted to changes in line with requirements and re-adapted where applicable.

The responsiveness of the project to changes during implementation (e.g. local, national, international or sectoral changes, including in state-of-the-art sectoral know-how, policy directives, global agreements and stakeholders' new and emerging needs) was assessed by analysing project documents and information and data obtained from project partners, target groups and other key stakeholder groups, in particular at international and local policy and strategy levels. As a result of the assessment, the evaluation found that the project design was appropriately adapted to alterations to requirements and duration. The first alteration was related to the project duration, which was extended on a cost-neutral basis, first by six months and again later by a further five months to ensure that implementation of the second pilot project was finalised. The second change accommodated in the project design related to the need to adapt to the challenges posed by the COVID-19 pandemic which led to transfer of all activities online (including monitoring of progress in construction at the site of the second pilot project and support of platforms for professional dialogue and exchange). There were no significant local, national, international or sectoral framework changes that directly affected the project design during its implementation. The frequent changes in top-level management at ministerial level in Ukraine hampered continuity of political dialogue but did not require any changes in the project design. The project was subject to

internal management changes during the implementation, but this did not affect the course of the implementation. An additional indicator to accompany Project objective indicator 2 (reduction of energy consumption) could have been added to measure increases in ambient temperature resulting from energy efficiency measures and, as a consequence, in the wellbeing of the hospital staff and patients.

(Ref 1, 4, 5, 6, 7, 9, 21; Int 1, 3, 5, 6, 7, 10, 12 with partner organisation; Int 6 with other stakeholder; Int 4, 10 with GIZ.)

In summary, the evaluation concluded that the project design was adequately adapted to changes in line with requirements and appropriately modified. The changes accommodated were also viewed as relevant and took into consideration the external environment in which the project operated (20 out of 20 points).

Table 3: Rating of OECD/DAC criterion: relevance

Criterion	Assessment dimension	Score and rating
Relevance	The project design is in line with the relevant strategic reference frameworks.	30 out of 30 points
	The project design matches the needs of the target group(s).	30 out of 30 points
	The project is adequately designed to achieve the chosen project objective.	12 out of 20 points
	The project design was adapted to changes in line with requirements and re-adapted where applicable.	20 out of 20 points
Overall score and rating		Score: **92 out of 100 points** Rating: Level 1: highly successful

4.3 Effectiveness

Evaluation Basis and methodology for assessing effectiveness

Evaluation basis

Evaluation of the effectiveness criterion was based on analysis of the extent to which the project was implemented in accordance with the following three assessment dimensions and evaluation questions:

- The project achieved the objective (outcome) on time in accordance with the project objective indicators.
  - To what extent has the agreed project objective (outcome) been achieved, measured against the objective indicators?
  - Are additional indicators needed to reflect the project objective adequately?
- The activities and outputs of the project contributed substantially to achievement of the project objective (outcome).
  - To what extent have the agreed project outputs been achieved, measured against the output indicators?
  - How did the project contribute via activities, instruments, and outputs to achievement of the project objective (outcome)? (contribution-analysis approach)
  - Implementation strategy: Which factors in the implementation contributed successfully to or hindered achievement of the project objective? (e.g. external factors, managerial set-up of project and company, cooperation management)
  - What other/alternative factors contributed to the fact that the project objective was achieved or not

achieved?
    - What would have happened without the project?
    - To what extent have risks (see also safeguards and gender) and assumptions of the theory of change been addressed in the implementation and steering of the project?
- No project-related negative results have occurred – and if any negative results occurred, the project responded adequately.
    - Which negative or positive unintended results did the project produce at output and outcome level and why?
    - How were risks regarding unintended negative results at output and outcome level assessed in the monitoring system?
    - What measures have been taken by the project to counteract the risks and (if applicable) occurred negative results? To what extent were these measures adequate?
    - To what extent were potential (not formally agreed) positive results at outcome level monitored and exploited?

Assessment methodology

For each of the assessment dimensions, a number of evaluation questions, as already outlined under evaluation basis above, and corresponding evaluation indicators were used to cover all relevant evaluation aspects. Moreover, a contribution analysis was carried out. For further details, see the other assessment dimensions below and the evaluation matrix (Annex 1).

Empirical methods

The data sources available included, in particular, the project documents, including project proposals, results logic, results matrix, and progress reports. The documents were assessed against the evaluation questions.

Additionally, documents and deliverables to verify achievement of indicators were collected, either through GIZ staff and the GIZ Document Management System or in the field during the evaluation mission (Microsoft Teams virtual meetings). These comprised in particular:

- reports from 10 hospitals on the implementation of energy efficiency (EE) measures, advisory reports, audit reports, financial budgets, applications for prospective projects (Project objective indicator 1);
- energy-use monitoring reports, audit reports on energy consumption in five selected areas of hospital usage (Project objective indicator 2);
- outcome reports, audit reports, publications and press releases on the energy efficiency pilot projects in two hospitals (Project objective indicator 3);
- documents from contractors (from websites of advisory and/or financial service providers, company brochures, case studies, work references), in regard to two contractors offering two new advisory and / or financial services for increasing energy efficiency in hospitals (Result A1);
- flyers and the website of a training course provider, in regard to a Ukrainian institution offering training courses on two energy-specific subjects in the hospital sector (Result B1);
- enquiries made to training providers, lists of participants in training sessions, in regard to training courses attended by 100 professional and managerial staff, including 10 multipliers (Result B2);
- cooperation agreements and agreed work and action plans of participants agreeing to the working format and programme content of two dialogue platforms (result C1);
- documents (e.g. minutes, decisions of working sessions, reports on the results of implemented activities, drafts of legal, normative or regulatory documents) of four activities (one of which is gender-sensitive) that came about from dialogue platforms and that support implementation of EE measures in hospitals (Result C2); and
- Two cooperation agreements with hospitals on implementing pilot measures (Result D1).

Moreover, opinions of key stakeholders and data were collected during the evaluation mission by conducting

semi-structured interviews based on the evaluation questions. The interviews were conducted with stakeholders in Ukraine. Data obtained by document analysis were triangulated with opinions and data from key stakeholders, including representatives from municipal and national partner institutions, energy audit companies, donor organisations, and project staff. For more information on the key stakeholders selected for the evaluation mission, see Section 3.2. Finally, the evaluators undertook an expert assessment of the reliability of the results obtained. The advantages of the methods described are methodological diversity and triangulation based on document analysis and a participatory approach. A disadvantage of the methods selected might be that they are not based on scientific data but on subjective judgements. However, potential outliers were counterbalanced by selecting diverse interview partners.

Analysis and assessment of effectiveness

Effectiveness dimension 1: The project achieved the objective (outcome) on time in accordance with the project objective indicators.

The project objective was defined as: **Modernisation of energy use in hospitals in Ukraine is implemented in an exemplary way.** The degree of achievement of the project objective (outcome) was assessed based on analysis of the extent to which the project objective indicators had been fulfilled. Table 3 summarises an assessment of the project objective indicators (POIs) according to the SMART criteria (specific, measurable, achievable, relevant, time-bound[6]).

Table 4: Assessment of the project objective indicators according to SMART criteria

Project objective indicator (POI) according to the offer	Assessment according to SMART criteria	Assessment according to level of achievement
Project objective indicator 1: 10 hospitals have used newly created advisory and/or financing services for planning and implementation of energy efficiency (EE) measures. **Baseline value:** 0 hospitals **Target value:** 10 hospitals **Source:** Advisory reports, audit reports, financial budgets, applications for prospective projects	The indicator focuses on use by the hospitals of newly created services to improve EE. In regard to the project objective, POI 1 measures the modernisation aspect and the use (implementation) of the services by the hospitals. The indicator complies with the SMART criteria. It was therefore retained.	Actual value: 10 hospitals Fully achieved.
Project objective indicator 2: Energy consumption in 5 selected areas of hospital usage is reduced by 10%. **Baseline value:** 0 sectors **Target value:** 5 sectors **Source:** Energy-use monitoring reports, audit reports	The indicator focuses on the reduction of energy use. In regard to the project objective, POI 2 measures the modernisation of energy use (by reducing energy consumption) and the exemplary implementation aspect (in 5 areas). The indicator complies with the SMART criteria. However, the focus on reduction of energy consumption was not evaluated as sufficient, as the improvement of energy efficiency may not inevitably lead to an absolute reduction of energy consumption but to more efficient use of the energy consumed. Due to lack of available data on temperature increase and/or wellbeing, the evaluation did not formulate an additional indicator. Project objective indicator 2	The indicator may have been achieved, but evidence for the specific reductions in energy consumption in the 5 major energy consumption areas is lacking.

[6] Considering that the evaluation is a final evaluation, the criterion 'time-bound' corresponds to the end of the project, i.e. 30 September 2019.

	was therefore retained.	
Project objective indicator 3: Two hospital energy efficiency pilot projects demonstrate the cost effectiveness and technical feasibility of the selected EE measures. **Baseline value:** 0 pilot projects **Target value:** 2 pilot projects **Source:** Outcome reports, audit reports, publications, press releases.	The indicator focuses on the implementation of pilot projects. In regard to the project objective, POI 3 measures the exemplary implementation of modernisation of energy use through pilot projects. The indicator complies with the SMART criteria. It was therefore retained.	Actual value: 2 pilot projects Fully achieved.

The **project objective indicator POI 1** stipulated that 10 hospitals have used newly created advisory and/or financing services for the planning and implementation of energy efficiency (EE) measures. According to information in the project documents and feedback from project partners and stakeholders, 17 hospitals in the two cities of Sumy and Chernihiv participated in energy audits. In this regard, the evaluation found that 10 different hospitals used the results of the energy audits to plan or implement EE measures. The EE measures included replacement of windows and doors, internal lighting systems and water-pumping systems. Moreover, the hospitals developed investment plans and submitted proposals to the State Fund for Regional Development, to the EE investment fund of the Nordic Environment Finance Corporation (NEFCO) and for participation in pilot project activities (Output D). As a result, the project laid the foundation for exemplary implementation of modernisation of energy use in Ukrainian hospitals (project objective). In conclusion, the project objective indicator POI 1 was fully achieved.

(Ref 3, 4, 5, 6, 7, 10, 11, 22, 32; Int 2, 5, 8, 9, 13 with partner organisation; Int 1 with GIZ.)

Project objective indicator POI 2 indicates that energy consumption in five selected areas of hospital usage is reduced by 10 %. This indicator was assessed based on progress reports and data made available by the MPEE project staff. In addition, feedback from key stakeholders and data were collected during the evaluation mission and triangulated with the project documents. The five major energy consumption areas identified in hospitals were heating, cooling systems, lighting, medical equipment and infrastructure equipment. During implementation, the project decided not to focus more specifically on energy consumption areas but on energy resources (heating energy, electricity, hot water and cold water). As a consequence, it was not possible to monitor the results of specific EE measures on the different areas. Moreover, the energy resources were used in several different areas (e.g. electricity for lighting, infrastructure equipment, medical equipment and cooling). According to energy monitoring of the hospitals, the energy consumption data (baseline period before 2015 compared to 2018/2019) showed effective results for the EE measures: heating energy consumption was reduced by more than 10% in 5 of 17 hospitals; electricity consumption was reduced by more than 10% in 2 hospitals. The evaluation noted, however, that the reference years for the baselines differed from one hospital to another. Moreover, the baselines were calculated on the maximum consumption values instead of average values over several years. The effective reduction of energy consumption therefore differed considerably from one year to another. In addition, there was insufficient evidence, if climate correction was properly applied, to calculate the energy consumption. The evaluation therefore found that evidence for the specific energy consumption reduction in five major energy consumption areas is lacking. However, all stakeholders of the hospital pilot projects clearly stated that implementation of EE measures significantly improved the quality of the working environment and patient satisfaction, which indicates that although increased energy efficiency may not always have led to an absolute reduction of energy consumption, the environment inside the hospital buildings was improved by increasing the ambient temperature. In conclusion, quantification of reductions in energy consumption in the five major areas of energy consumption was not possible and in absolute terms only partly reflects achievement of the indicator. Although the energy monitoring data show the positive effects of the EE measures on energy consumption, the level of reduction is not verifiable with clear evidence. However, the very positive feedback of hospital stakeholders on energy savings and the improvement in the wellbeing of hospital staff and patients very clearly confirmed the effectiveness of the EE measures implemented. Nevertheless, this result, arising from a more efficient use of energy that may not inevitably lead to an absolute reduction in energy consumption, was not monitored or reflected in the data. Due to the lack of available data on temperature

increases inside buildings and/or on wellbeing, the evaluation could not formulate an additional indicator. The evaluation concluded that the project objective indicator POI 2 may have been achieved, but evidence for the specific energy consumption reductions in the five major energy consumption areas was lacking.

(Ref 3, 4, 5, 6, 7, 10, 11, 12, 13, 22, 32; Int 1, 2, 5, 7, 8, 9, 13 with partner organisation; Int 1 with GIZ.)

The **project objective indicator POI 3** implied the demonstration of the cost-effectiveness and technical feasibility of selected EE measures in two hospital energy efficiency pilot projects. The indicator was assessed on the basis of progress reports and data made available by the MPEE project staff, feedback from key stakeholders and data collected during the evaluation mission, which were triangulated with the project documents. The evaluation noted that, on the basis of potential analyses derived from energy audits carried out from March to August 2018, two pilot hospitals in the partner cities of Sumy and Chernihiv were selected for the implementation and financing of selected investment EE measures. The hospitals selected were a maternity hospital managed by the city of Chernihiv and the children's hospital in the city of Sumy. The thermal modernisation measures at the pilot hospital in Sumy were completed in December 2019. In the Chernihiv hospital, modernisation measures were delayed due to the larger size of the hospital, the lack of qualified personnel for construction work and the need for additional time to conduct tender procedures. As a result, the project duration was extended to June 2020 on a cost-neutral basis. The energy efficiency measures in Chernihiv were then completed on time. As a result, the project contributed to exemplary implementation of energy use modernisation in Ukrainian hospitals (project objective). As a consequence, the project objective indicator POI 3 was 100% achieved.

(Ref 3, 4, 5, 6, 7, 10, 12, 14, 19, 20, 22, 31, 32; Int 1, 3, 5, 6, 7, 11, 12, 14, 15 with partner organisation; Int 3 with donor; Int 6 with other stakeholder; Int 1 with GIZ.)

In summary, the project objective (outcome) and outcome indicators were relevant to exemplary implementation of energy use modernisation in Ukrainian hospitals. The three indicators defined in the project proposal measured the extent to which modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way at the levels of the hospitals' use of services, energy consumption and pilot projects. However, they were not considered to be entirely sufficient to measure achievement of the project objective. In particular, the focus of Project objective indicator 2 on reduction of energy consumption was not evaluated as sufficient, as improvement of energy efficiency may not inevitably lead to an absolute reduction in energy consumption but to more efficient use of the energy consumed, e.g. through increased ambient temperature in buildings. An additional indicator would have been necessary to measure this increase in temperature and, as a consequence, improvement in the wellbeing of hospital staff and patients. Due to a lack of available data on temperature increase and/or wellbeing, the evaluation could not formulate an additional indicator. It was therefore concluded that the project achieved its objective (outcome) on time and in accordance with two of the three indicators, while the achievement of one indicator is not entirely verifiable. In addition, there was a potential to improve the baseline for measuring energy consumption (30 out of 40 points).

Effectiveness dimension 2: The activities and outputs of the project contributed substantially to the project objective achievement (outcome).

According to the results model in Section 2.2., through its support to the various partner institutions and stakeholders, the project made contributions that ensured that modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way. The evaluation assessed the degree to which the activities and outputs of the project contributed to achievement of the project objective (outcome) by applying a theory-based approach based on the theory of change (ToC, see Section 2.2). Essentially, the elements of the ToC anticipated changes at output, outcome and impact level and the respective causal hypotheses were contrasted with evidence. The conclusion of the evaluation was determined by the difference between the assumed and observed results and the underlying causal relations. Moreover, the evaluation design was based on a six-step contribution analysis, which was applied to three selected result hypotheses of the ToC. In Step 1, the evaluation as-

sessed project documents in regard to intended outputs and outcomes and identified potential contributory factors, both within the project and external to it. In Step 2, the elements were related to each other, forming a ToC (as formulated in Section 2.2 above). In Step 3, during the data collection period, the evaluation gathered empirical evidence for the extent to which results had been achieved and to which project contributions or contributions of other factors had taken place. In Step 4, the information was analysed, leading to a 'contribution story', i.e. the documentation of project context, intended as opposed to achieved results and a hermeneutic analysis of the extent to which the evidence supports the hypotheses of the ToC or instead, alternative explanations. A complete contribution analysis would have proceeded with additional cycles of collection of further evidence to validate (or refute) the contribution story (Step 5), and formulation a more robust contribution story (Step 6). However, since primary data collection was concentrated in a very short and remotely based evaluation phase and the evaluation object is characterised by a highly diverse group of stakeholders, it was not possible to apply comprehensive validation cycles. Therefore, Steps 5 and 6 of the contribution analysis were replaced by application of a counterfactual situation, i.e. a hypothetical situation without project intervention (What would have happened without the project?).

The project was structured into four outputs (see Section 2.2). As improved access for Ukrainian hospitals to consulting services in the field of energy efficiency is the basis for all other results of the project, Output A was selected for the contribution analysis:[7]

- **Hypothesis 1 (Output A):**

- The analysis of the existing capacity of service providers and of the needs of hospitals for advice and support in terms of energy efficiency led to development of needs-tailored training for service providers.
- The training of service providers enabled them to offer additional consulting and financial services in the field of energy efficiency to hospitals in Ukraine (Result A1).
- Through the expanded range of consulting and financial services in the field of energy efficiency, the access of hospitals to these services was enabled (Output A).
- As a consequence of better access to these services, 10 hospitals used newly created advisory and/or financing services for planning and implementation of energy efficiency (EE) measures (Project objective indicator 1) and the 2 pilot project hospitals demonstrated the cost effectiveness and technical feasibility of selected EE measures (Project objective indicator 3).
- The use of the newly created advisory and/or financing services for EE by 10 hospitals and the implementation of the 2 pilot projects demonstrated that modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).
- The exemplary implementation of modernisation of energy use in hospitals in Ukraine contributed to Ukraine making progress in improving energy efficiency (programme objective/impact, detailed in Section 2.2 and analysed in Section 4.4)
- The progress Ukraine is making in improving energy efficiency contributes to SDGs 3, 7, 13 and 17 and to the DAC markers RMNCH-1, UR-1 and KLM-1 (Impact/SDG, DAC marker, detailed in Section 2.2 and analysed in Section 4.4).

To analyse the project's contribution to improving organisational or technical processes or changes in hospital staff behaviour, the evaluation team selected Output B for the contribution analysis:

- **Hypothesis 2 (Output B):**

- Technical support from the project for one or more local training institutions led to development of training and sensitisation concepts for energy managers, building technicians and caretakers, doctors and nursing staff in hospitals.
- The development of the training concepts resulted in a Ukrainian institution offering training courses on

[7] The impact level is shown to demonstrate the complete results hypothesis, but is not part of the effectiveness analyses. The assessment of results at impact level will be part of the impact section.

two energy-specific subjects in the hospital sector (Result B1).

- Training courses offered by a Ukrainian institution were attended by 100 professional and managerial staff, including 10 multipliers (Result B2).
- Achievement of Results B1 and B2 demonstrated that professional and managerial staff took part in training courses on energy efficiency in hospitals (Output B).
- The training of professional and managerial staff in hospitals led to changes in organisational or technical processes or changes in staff behaviour.
- The training of professional and managerial staff in hospitals motivated hospitals to use newly created advisory and/or financing services for planning and implementation of energy efficiency (EE) measures (Project objective indicator 1)
- Changes in organisational or technical processes or changes in staff behaviour led to energy savings in hospitals and to reduction of energy consumption (Project objective indicator 2).
- Use of the newly created advisory and/or financing services for EE by 10 hospitals and the reduction of energy consumption in hospitals demonstrated that modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).
- The exemplary implementation of modernisation of energy use in hospitals in Ukraine contributed to Ukraine making progress in improving energy efficiency (programme objective/impact, detailed in Section 2.2 and analysed in Section 4.4)
- The progress Ukraine is making in improving energy efficiency contributes to SDGs 3, 7, 13 and 17 and to the DAC markers RMNCH-1, UR-1 and KLM-1 (Impact/SDG, DAC marker, detailed in Section 2.2 and analysed in Section 4.4)

In addition, to cover the micro level and pilot dimension of the project, the evaluation selected Output D for the contribution analysis.

➢ **Hypothesis 3 (Output D)**

- Technical support from the project and cooperation with local service providers led to energy audits in hospitals.
- The results of the energy audits led to the transparent selection of two hospitals for implementation of concrete energy efficiency measures.
- The results of the energy audits and the selection process for two hospitals resulted in two cooperation agreements with hospitals on implementing pilot measures (Result D1).
- Based on the two cooperation agreements, financial contributions from the project led to implementation of two pilot projects in hospitals (Output D).
- Implementation of the two pilot projects demonstrated that hospitals used newly created advisory and/or financing services for planning and implementation of energy efficiency (EE) measures (Project objective indicator 1).
- The implementation of two pilot projects in hospitals led to reduction of energy consumption (Project objective indicator 2).
- As a consequence of the implementation of two pilot projects in hospitals, the cost effectiveness and technical feasibility of selected EE measures was demonstrated (Project objective indicator 3).
- Use of the newly created advisory and/or financing services for EE, the reduction of energy consumption and the two energy efficiency pilot projects in hospitals demonstrated that modernisation of energy use in hospitals in Ukraine was implemented in an exemplary way (project objective).
- The exemplary implementation of modernisation of energy use in hospitals in Ukraine contributed to Ukraine making progress in improving energy efficiency (programme objective/impact, detailed in Section 2.2 and analysed in Section 4.4)
- The progress Ukraine is making in improving energy efficiency contributes to SDGs 3, 7, 13 and 17 as well as the DAC markers RMNCH-1, UR-1 and KLM-1 (Impact/SDG, DAC marker, detailed in Section 2.2 and analysed in Section 4.4).

In regard to **Output A**, the evaluation found that the input provided by the MPEE project to the project partners

and key stakeholders in the form of long-term and short-term experts, human capacity development (HCD) measures, equipment and financial contributions (instruments) was used to analyse the existing capacities of energy auditors (service providers) and to assess the needs of hospitals for advice and support for energy efficiency, in particular by supervising implementation of energy audits in 87 hospital buildings. Moreover, an analysis of financing opportunities for hospitals was carried out. Based on these assessments and in cooperation with the Association of Energy Auditors of Ukraine (AEA), needs-tailored training measures for energy auditors were developed and implemented, focusing on specific energy consumption patterns in hospitals and EE measures for building envelopes, heating and ventilation systems, lighting, electricity consumption data and financial aspects and technical and financial topics. These activities led to certified energy auditors offering additional or improved consulting and financial services in the field of energy efficiency (Result A1). The AEA then created a database and an online map, showing the location and detailed profiles of the certified auditors operating in the country. Hospitals all over the country thereby gained access to consulting services in the field of energy efficiency (Output A). As a consequence, at least 10 hospitals used these advisory and/or financing services for planning and implementation of energy efficiency (EE) measures (Project objective indicator 1) and the two pilot project hospitals demonstrated the cost effectiveness and technical feasibility of selected EE measures (Project objective indicator 3). During the interviews, all stakeholders confirmed the high relevance of the training measures for energy auditors. The increased quality of the energy audits was also confirmed by both the auditors themselves and the hospitals using the services. The assumption made for Output A, that service providers would offer qualified personnel and the necessary financial resources for development of new services, was correct. The assumption that the hospitals were willing and had the funds to finance the consulting services was not entirely correct. Hospital stakeholders confirmed their interest in EE measures and willingness to implement them, but stated that funding these measures was still a challenge. Alternative explanations for the contribution of Output A to the project objective have not been identified. The evaluation found that without the project the capacity of energy auditors to carry out high-quality energy audits would be lower. In conclusion, the evaluation considered that Hypothesis 1 had been confirmed.

(Ref 3, 4, 5, 6, 7, 10, 11, 12, 22, 32; Int 1, 2, 5, 7, 8, 9, 12, 13, 15 with partner organisation; Int 1 with GIZ.)

In respect of **Output B**, the evaluation confirmed that the technical support provided by the MPEE project to the project partners and key stakeholders in the form of long-term and short-term experts, HCD measures (training and study tours) and equipment (instruments) resulted in the development of training concepts for energy managers, building technicians and caretakers, doctors and nursing staff in hospitals. The training concepts had four different formats: a one-day information seminar for managers and decision-makers; a three-day technical training workshop for technical personnel; a one-week strategic exchange for managers in Germany; and a one-week exchange of technical experience in Germany. In the course of these training events, target groups were trained in varying depths and intensity on the following topics: factors affecting energy consumption in hospitals; scope and results of energy audits,; control and intervention possibilities for improving EE in hospitals; planning and implementation of EE measures; monitoring and review of EE improvements; and the involvement and training of hospital staff. Participants also learned about experience and best practices from Germany and other European countries. In Chernihiv, Sumy, Lviv, Mykolayiv, Vinnytsia, Kharkiv and Dnipro, training courses on energy management in hospitals were offered in cooperation with the non-governmental organisation EcoClub. At the events, the participants dealt with questions concerning the energy management of health care facilities, the energy budget and balance of hospitals, the organisation of energy monitoring and the evaluation of the energy-saving potential and the financial costs associated with EE (Result B1). At a training course for energy managers of municipal hospitals and representatives of the city councils in Chernihiv and Sumy, knowledge and skills in the use of new measuring devices in the ‘Energy Efficiency First Aid Kit’ in particular were intensified (Result B1). In total, the training courses were attended by more than 150 professional and managerial staff, including 14 multipliers (Result B2). Therefore, it was confirmed that professional and managerial staff took part in training courses on energy efficiency in hospitals (Output B). Key stakeholders from hospitals and municipalities confirmed during the evaluation interviews that the training received led to them initiating technical (low-cost EE measures), organisational changes (responsibilities for EE measures)

and to changes in staff behaviour (closing doors and windows, switching off lighting). These changes led to energy savings in hospitals and to reduction of energy consumption (Project objective indicator 2). Moreover, key stakeholders confirmed that the training received motivated hospitals to use energy audits for planning and implementation of energy efficiency (EE) measures (Project objective indicator 1). The assumptions identified for Output B, that professional and managerial staff in hospitals were available and motivated for training and implementing EE measures, were correct. The risk that replacement of political officials (mayors, governors, ministers) could lead to changes in the priorities of administrations responsible for hospitals, did not occur. Alternative explanations for the contribution of Output B to the project objective were not identified. The evaluation considered that without the project municipal decision-makers, municipal staff and hospital staff would have less awareness of the energy-saving potential of EE measures in hospitals. The evaluation concluded that Hypothesis 2 was confirmed.

(Ref 3, 4, 5, 6, 7, 10, 11, 12, 13, 22, 32; Int 1, 2, 3, 5, 6, 7, 9, 11, 12, 13, 14, 15 with partner organisation; Int 6 with other stakeholder; Int 1 with GIZ)

Considering **Output D**, the evaluation found that the input provided by the project was used for technical consulting on energy audits, organisational advice on tender processes and legal studies on construction measures to accompany implementation of two EE pilot projects in hospitals. The instruments applied included long-term and short-term experts, HCD measures, procurement of equipment and financial contributions in the form of grant agreements. After selecting Sumy and Chernihiv as partner cities, the potential pilot projects were reduced to 17 hospitals, which then underwent an energy audit in accordance with quality standards introduced by the MPEE project (Output A) and subsequently applied to be partner hospitals for the pilot projects. The project signed grant agreements with the two hospitals selected, the Maternity Hospital in Chernihiv and St Zinaida's Children's Hospital in Sumy (Result D1). Based on the energy audits, decision-makers at municipal and hospital level prioritised the renovation and EE measures to be selected. The energy audits also formed the basis for concrete planning and implementation of EE measures and provided baseline data (Project objective indicator 1). Through technical and organisational support from the project, the first project plans and cost estimates for the pilot projects were developed and a tender process leading to selection of two local service providers to implement the pilot projects was successfully carried out. After legal review of the project design and technical inspection of the statics and building condition of both hospitals, the renovation and EE measures were carried out between September and December 2019 in Sumy and between January and June 2020 in Chernihiv (Output D). In particular, these measures included insulation of facades, basement and socle (wall base), replacement of doors and windows, installation of heat meters and heat-carrier supply control units. Although reliable data on actual savings will not be available before April 2021, both hospitals received energy certificates predicting energy savings of 42% in the hospital in Sumy and 22.5% in the hospital in Chernihiv (Project objective indicator 2). As a consequence of the implementation of the two pilot projects, the cost effectiveness and technical feasibility of the selected EE measures was demonstrated (Project objective indicator 3). The assumptions that hospital managers and the relevant authorities would maintain their currently high levels of interest in energy efficiency and that hospitals were willing to sign cooperation agreements for implementation of energy efficiency measures were correct. The risk that replacement of political officials (mayors, governors, government ministers) could have led to changes in the priorities of the administrations responsible for hospitals did not occur. Additionally, the risk that security issues might have impeded or prevented access to individual project sites during project implementation did not occur. Alternative explanations for the contribution of Output D to the project objective were not identified. Moreover, the evaluation found that the capacities of auditors, municipal staff and hospital staff regarding the design, planning and implementation of EE measures in hospitals would have been far less developed if the project had not taken place. The evaluation concluded that Hypothesis 3 could be confirmed.

(Ref 3, 4, 5, 6, 7, 10, 12, 14, 19, 20, 22, 31, 32; Int_ , 3, 5, 6, 7, 11, 12, 14, 15 with partner organisation; Int 3 with donor; Int 6 with other stakeholder; Int 1 with GIZ.)

In conclusion, the evaluation acknowledged that the project undertook and completed the planned activities

and achieved all four intended outputs. All output indicators were probably achieved, but some evidence on the quantification of energy savings was lacking. The evaluation also showed that the outputs were used to achieve the project outcome. Contribution analysis of Outputs A, B and D clearly showed their contribution to achievement of the project objective. The evaluation confirmed that without the project there would have been less awareness of the energy saving potential of EE measures in hospitals. For municipal decision-makers, the project significantly contributed to foregrounding hospitals as priority buildings for EE measures. Moreover, the capacities of auditors, municipal staff and hospital staff in regard to the design, planning and implementation of EE measures in hospitals would have been far less developed if the project had not taken place. In terms of implementation strategy, the evaluation confirmed that close cooperation with decision-makers in the municipalities successfully contributed to achievement of the project objective. The evaluation also recognised that the level of achievement attained in the completion of activities and outputs could to a significant extent be attributed to the commitment and participation of the partner organisations and the GIZ project team.

In summary, the evaluation confirmed that the technical support provided by the MPEE project to the project partners and key stakeholders resulted in implementation of quality-assured energy audits in 87 hospital buildings and led to an increased range of consulting and/or financial services in the field of energy efficiency. Training courses on energy management for hospital staff and representatives of the city councils resulted in increased awareness and capacity on EE topics and in energy savings, due to technical measures, organisational changes and changes in staff behaviour. In addition, the implementation of two EE pilot projects in hospitals led to increased capacity among municipal and hospital staff in tendering processes and project design. Moreover, the two pilot projects demonstrated the cost effectiveness and technical feasibility of selected EE measures.

In conclusion, the activities and outputs of the project have contributed substantially to achievement of the project objective (outcome). Furthermore, without the project both awareness of energy efficiency and the capacity to design and implement EE measures would have been lower. In terms of implementation strategy, the close cooperation with decision-makers in the municipalities successfully contributed to achievement of the project objective. However, the assumption that the hospitals were willing and had the funds to finance consulting services was not entirely correct. Hospital stakeholders confirmed their interest in EE measures and willingness to implement them but stated that funding these measures was still a challenge. (30 out of 30 points).

Effectiveness dimension 3: No project-related negative results have occurred – and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized.

A close examination, based in particular on data collection and opinions of key stakeholders, of the extent of negative and positive unintended results of the project at output and outcome level revealed that no negative results occurred. From a general perspective, risks relating to replacement of political officials (mayors, governors, government ministers), which might have led to changes in the priorities of administrations responsible for hospitals, did not occur. The project adequately took into account risks from ongoing health care reforms to the project results through a specific study. In regard to unintended positive results, the project actively seized the opportunity to cooperate with NEFCO to finance EE measures in other buildings at the pilot project hospitals. Risks were systematically monitored in the GIZ Document Management System, but unintended results were not.

(Ref 3, 4, 5, 6, 7, 17, 18, 22, 28, 32, 33; Int 1, 3, 4, 5, 6, 7, 10, 11, 12, 14, 15 with partner organisation; Int 1, 2, 3 with donor; Int 1, 4, 6 with other stakeholder; Int 1, 7 with GIZ.)

In summary, no negative results occurred and the project management seized opportunities for additional activities and results. Project risks and assumptions were appropriately identified during project design and monitored during implementation. However, there was no formal or deliberate mechanism to identify potential unintended results at outcome level, and unintended positive results at outcome level were not systematically and

formally monitored. (28 out of 30 points).

Table 5: Rating of OECD/DAC criterion: effectiveness

Criterion	Assessment dimension	Score and rating
Effectiveness	The project achieved the objective (outcome) on time in accordance with the project objective indicators.	30 out of 40 points
	The activities and outputs of the project contributed substantially to the project objective achievement (outcome).	30 out of 30 points
	No project-related (unintended) negative results have occurred – and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized.	28 out of 30 points
Overall score and rating		Score: **88 out of 100 points** Rating: Level 2: successful

4.4 Impact

Evaluation basis and design for assessing impact

Evaluation basis

The evaluation of the impact criterion was based on analysis of the extent to which the project contributed to the achievement or non-achievement of its overarching development objectives. It examined the direct positive and negative changes and the unintended effects of the project. For this purpose, the evaluation of the impact criterion examined the following three assessment dimensions and evaluation questions:

- The intended overarching development results have occurred or are foreseen.
  - To which overarching development results is the project intended to contribute? Which of these intended results at impact level can be observed or might plausibly be achieved?
  - Target group and 'leave no one behind' (LNOB): Is there evidence of results achieved at target group level/for specific population groups? To what extent have targeted marginalised groups (such as women, children, young people, indigenous peoples, refugees, internally displaced persons (IDPs) and migrants, people living with HIV/AIDS and people in extreme poverty) been reached?
- The outcome of the project contributed to the occurred or foreseen overarching development results.
  - To what extent is it plausible that the results of the project at outcome level (project objective) have contributed or will contribute to the overarching results? (contribution-analysis approach)
  - What are the alternative explanations/factors for the overarching development results observed? (e.g. the activities of other stakeholders, other policies)

- To what extent is the impact of the project positively or negatively influenced by framework conditions, other policy areas, strategies or interests (German government ministries, bilateral and multilateral development partners)?
- What would have happened without the project?
- To what extent has the project made an active and systematic contribution to wider dissemination of impact. If not, could there have been potential for this? Why was that potential not exploited?

- No project-related negative results at impact level have occurred – and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized.
  - Which positive or negative results at impact level can be observed? Are there negative trade-offs between the environmental, economic and social dimensions (in accordance with the three dimensions of sustainability in Agenda 2030)?
  - To what extent were risks of (unintended) results at impact level assessed in the monitoring system?
  - What measures have been taken by the project to avoid and counteract risks/negative results/trade-offs?
  - To what extent were potential positive results and potential synergies between the environmental, economic and social dimensions monitored and exploited?

Evaluation design

For each of the assessment dimensions, the questions outlined under evaluation basis above, the corresponding evaluation indicators and a contribution analysis were used to cover all aspects relevant to the evaluation. Furthermore, the contribution analysis was complemented by application of a counterfactual situation, i.e. a hypothetical situation without project intervention (What would have happened without the project?). For further details, please refer to the evaluation matrix (Annex 1).

Empirical methods

The data sources available for assessing the impact of the project included project documentation, in particular the monitoring system, the project proposal, progress reports, operational planning documents and presentations. To analyse overarching development impacts, the results matrix of the Energy Efficiency Programme was used. Moreover, international policy documents, such as Agenda 2030, the Paris Agreement and the Ukrainian Nationally Determined Contribution as well as overarching BMZ strategy and policy documents, e.g. BMZ strategy paper *Development Policy 2030* (2018) were used to define and measure results at impact level. The project documents were assessed against the evaluation questions. Furthermore, data and opinions from key stakeholders were collected during the evaluation mission in Ukraine by applying semi-structured interviews based on the evaluation questions (for more information on the selected interview partners, see Section 3.2). Data obtained by documentation analysis were then triangulated with opinions of key stakeholders. Finally, the evaluators undertook an expert assessment of the reliability of the results obtained.

The advantages of the methods described are methodological diversity and triangulation based on document analysis and a participatory approach. A disadvantage of the methods selected might be that they are not based on scientific data but on subjective judgements. However, potential outliers were counterbalanced by selecting diverse interview partners.

Analysis and assessment of impact

Impact dimension 1: The intended overarching development results have occurred or are foreseen.

The overarching development result to which the MPEE project was intended to contribute is the programme objective of the German-Ukrainian Energy Efficiency Programme: Ukraine makes progress in improving energy efficiency. Achievement of the programme objective is measured through two programme objective indicators:

- Programme objective indicator 1: one new or adapted legal requirement to improve energy efficiency

has entered into force.

- Programme objective indicator 2: primary energy consumption of partner municipalities in selected areas of public service provision has decreased by 17,000 MWh/year.

As there is no direct link between the project and Programme objective indicator 1, the evaluation primarily assessed the contribution of the project to Programme objective indicator 2.

Achievement of the programme objective or the probability of its achievement was assessed on the basis of the annual reports of the Energy Efficiency Programme. Data obtained from the most recent report (March 2020) indicate that the programme had by that point achieved a reduction of primary energy consumption in partner municipalities of 14,793 MWh/year. The evaluation therefore concluded that achievement of the intended overarching development result of the programme objective was already in progress.

(Ref 1, 2, 3, 4, 5, 6, 7, 10, 12, 23, 32; Int 6 with other stakeholder; Int 2 with donor; Int 5, 6, 10 with GIZ.)

In addition, the project was expected to contribute to achievement of the Sustainable Development Goals (SDGs), in particular SDG 13 (Take urgent action to combat climate change and its impacts), SDG 3 (Ensure healthy lives and promote well-being for all at all ages), SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all) and SDG 17 (Strengthen the means of implementation and revitalize the global partnership for sustainable development). Moreover, the project was intended to contribute to the overarching development results, which are defined by the DAC markers of the project proposal, including reproductive, maternal, newborn and child health (RMNCH-1), environmental protection (UR-1) and climate change mitigation (KLM-1). For more details, see Section 2.2 and Section 4.4. As the SDG and DAC-marker development results are located at a higher impact level, the evaluation was based on stakeholders' opinions rather than on verifiable data. It was concluded that it was very plausible that the overarching development results at SDG and DAC-marker level would be achieved in future and even, to some extent, already had been.

(Ref 1, 2, 3, 4, 5, 6, 7, 10, 12, 18, 23, 28, 32; Int 10 with partner organisation; Int 4 with other stakeholder; Int 1, 2, 5 with donor; Int 5, 6, 10 with GIZ.)

Regarding results at target-group level and the 'leave no ne behind' (LNOB) principle, the evaluation found evidence that results had been achieved, in particular for women, children, refugees, IDPs, migrants and people living with HIV/AIDS. By implementing EE measures in the two pilot hospitals, St Zinaida's Children Hospital in Sumy and the Maternity Hospital in Chernihiv, the MPEE project indirectly benefited women and children in particular. Moreover, IDPs and migrants benefited indirectly from the two pilot hospitals and implementation of energy audits in 17 hospitals in the partner cities, which both have significant numbers of IDPs in their population (Chernihiv region: 7,326 IDPs in 2020; Sumy region: 11,165 IDPs in 2020). Ukraine has the highest HIV/AIDS infection rate in Europe, with a cumulative total of 45,737 infections (in 2018). Through its contribution to modernisation of Ukrainian hospitals, the project thus provided indirect benefits for people living with HIV/AIDS.

(Ref 3, 4, 5, 6, 7, 12, 14, 15, 17, 23, 28, 32; Int 5, 7 with partner organisation; Int 4 with other stakeholder; Int 3, 4 with donor; Int 5, 6, 8, 10 with GIZ.)

In summary, progress has already been made in achieving the intended overarching development result of the programme objective: primary energy consumption in partner municipalities has been reduced by 14,793 MWh/year. Additionally, it is very plausible that the overarching development results at SDG and DAC-marker level will be achieved in the future and even, to some extent, already have been. The evaluation therefore concluded that the intended overarching development results have been or are likely to be achieved. In addition, the evaluation found evidence of results achieved that benefited women, children, refugees, IDPs and migrants in particular, as well as people living with HIV/AIDS. It therefore achieved results at target-group level and put the 'leave no one behind' (LNOB) principle into practice. (40 out of 40 points).

Impact dimension 2: The project objective (outcome) contributed to the occurred or foreseen overarching development results (impact).

First, contribution analysis based on the project's ToC was used to assess whether the outcome of the project contributed to the occurred or foreseen overarching development results. In this regard, the ToC assessment was based on the expectations of the stakeholders of the MPEE project, German Embassy and other donors, on the perceptions of the project team and the experience of the partner organisations in the partner countries. Face-to-face interviews during the evaluation mission were used to gather the necessary data. Moreover, the assessment addressed the attribution gap between the project objective and the results at impact level, including the contributions of other projects in the Energy Efficiency Programme. Since the evaluation was limited by time and budget constraints, in particular regarding gathering of evidence and primary data at impact level, it relied rather more on qualitative than on quantitative methodologies. In regard to the final target group, there was an attribution gap between the project objective and both the impact at final target-group level and the overarching development results, such as SDGs and the DAC markers. In this regard, the following hypotheses from the results model were examined to explain the causal relationships between the project outcome and impacts:

- **Hypothesis I:** The reduction of energy consumption in 5 selected areas of hospital usage (Project objective indicator 2) and the two energy efficiency pilot projects in hospitals (Project objective indicator 3) contributed to exemplary implementation of modernisation of energy use in hospitals in Ukraine (project objective).Through this, it contributed to a reduction in the primary energy consumption of partner municipalities in selected areas of public service provision (Programme objective indicator 2) which led to Ukraine making progress in improving energy efficiency (programme objective/impact).

The MPEE was designed to accompany EE measures in 5 major energy consumption areas in hospitals: heating, cooling system, lighting, medical equipment and infrastructure equipment. The evaluation found that, according to energy monitoring of the hospitals, the implementation of EE measures led to reduced energy consumption in several hospitals in the partner municipalities, Sumy and Chernihiv (see Section 4.3). Although the works on site have only recently been concluded and quantitative data are not yet available for both pilot project hospitals, calculations in the project planning indicate that, after thermal modernisation of the buildings, energy consumption will be reduced from 89 kWh/m^2 to 48 kWh/m^2 for the Sumy hospital and from 71 kWh/m^2 to 44 kWh/m^2 for the Chernihiv hospital. The Energy Efficiency Programme annual report for 2020 indicates that the MPEE project led to a total reduction in energy consumption of 3,500 MWh/year. Although the reduction of energy consumption and the project's contribution to the programme objective appear obvious, the evaluation could not verify the accuracy of this figure, as there was no clear baseline for the calculation. It must be emphasised that, before the partner municipalities participated in the MPEE project, they concentrated mainly on schools and kindergartens when implementing EE measures in their public service provision, but did not focus on hospitals.. Due to the capacity development measures of the MPEE project, municipality and hospital representatives learned that hospitals, as facilities which operate on a 24/7 basis, offer huge potential for energy savings. Numerous representatives of the municipalities confirmed during the evaluation mission that the exemplary implementation of EE measures in hospitals led to reduced energy consumption in their municipalities. In addition, the interviewees stated that the learning effect on the potential for EE measures in hospitals was clearly a benefit of the project. The evaluation concluded that the hypothesis was partly confirmed.

(Ref 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 19, 20, 23, 31, 32; Int 1, 2, 3, 5, 6, 7, 9, 12, 13, 14, 15 with partner organisation; Int 3 with donor; Int 6, 7, 10 with GIZ.)

- **Hypothesis II:** The progress of Ukraine in improving energy efficiency (programme objective) contributes to ensuring access to affordable, reliable, sustainable and modern energy for all (SDG 13) and strengthens the security of energy supply in Ukraine (national priority).

In the field of energy efficiency, the German-Ukrainian Energy Efficiency Programme is a major actor in the donor landscape in Ukraine. The various programme projects/modules (legal framework, EE in municipalities, EE

in enterprises, efficiency in energy supply) focus on relevant levers for improving energy efficiency in the country. In December 2019, the programme comprised financial cooperation (FC) and technical cooperation (TC) projects with a total value of EUR 122,700,000. In 2019, four TC projects accounted for EUR 19,075,000 of this amount. According to the most recent programme progress report (January 2020), achievement of the objective is predicted. The evaluation therefore confirmed that the programme clearly contributes directly to SDG 13. Moreover, stakeholders interviewed underlined the relevance of the programme for reduction of energy consumption, and thereby for security of the energy supply in the country, which still constitutes a high-level national priority. It was therefore concluded that Hypothesis II was confirmed.

(Ref 1, 2, 3, 4, 5, 6, 7, 8, 23, 32; Int_3, 6, 10 with partner organisation; Int 3, 4 with other stakeholder; Int 1, 2, 3, 4, 5 with donor; Int 6, 8, 10 with GIZ.)

- **Hypothesis III:** The reduction in primary energy consumption by partner municipalities in hospitals (Project objective indicator 2; Programme objective indicator 2) led to monetary savings in hospital budgets. The monetary savings could then be used to improve health care services provided by the hospitals. Through this, the project made a contribution to ensuring healthy lives and promoting well-being for all at all ages (SDG 3).

First, the evaluation showed that the EE measures implemented as part of the project led to a reduction in primary energy consumption in hospitals of the partner municipalities (see Hypothesis I). Although there was no documentation on monetary savings available, the data on energy and water consumption in the hospitals showed a reduction, from which it could be deduced that the corresponding costs were reduced accordingly. Stakeholders from municipalities and hospitals confirmed that the EE measures also led to monetary savings. However, as the hospitals are financed from municipal budgets, the monetary savings benefited the municipalities but did not directly benefit the hospitals. Therefore it could not be confirmed that the monetary savings were directly used to improve health care services provided by the hospitals. The municipalities stated that the money saved was used for municipal expenses in general, including health services and additional EE measures. Nevertheless, the modernisation of the hospitals led to improved wellbeing for hospital staff and patients due to more comfortable ambient temperatures inside hospital buildings. As a consequence, patients increasingly asked to be hospitalised in the ‘more modern’ hospitals. The evaluation therefore concluded that although the logic of the hypothesis was not confirmed, reduced energy consumption led directly to improved wellbeing for staff and patients and indirectly to improved health care services. The contribution of the project to SDG 3 was therefore partly confirmed.

(Ref 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 19, 20, 23, 31, 32; Int_1, 2, 3, 5, 6, 7, 9, 11, 12, 13, 14, 15 with partner organisation; Int_6, with GIZ.)

Second, alternative explanations and/or factors for the overarching development results observed, e.g. through the activities of other stakeholders, were examined. The evaluation found that several donor organisations and implementing agencies are active in the field of energy efficiency in Ukraine, Including in particular, the BMZ-funded Energy Efficiency in Municipalities (EEIM) project, which cooperated closely with the MPEE project. Both projects intervened in the same municipalities and developed synergies in training and promotion of energy auditors. The other projects in the Energy Efficiency Programme were complementary to the MPEE project but intervene at different levels and have different target groups. NEFCO is strongly involved in Ukraine and finances EE investments in more than 50 municipalities (with a portfolio of more than 200 projects). These projects focus on heat supply for buildings or replacement of street lighting, among others. NEFCO financed investment in EE measures, guaranteed by a Memorandum of Cooperation, in another building at the MPEE pilot partner hospital in Sumy. The evaluation therefore concluded that the impact of the MPEE project was enhanced through its cooperation with NEFCO. In addition, NEFCO would not have invested in hospitals without the MPEE project. Among the most relevant donor organisations in the energy sector are the European Bank for Reconstruction and Development (EBRD/Eastern Europe Energy Efficiency and Environment Partnership), the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Danish International Development Agency, the International Finance Corporation, the European Investment Bank, Swiss

State Secretariat for Economic Affairs (SECO) and the United Nations Development Programme. These organisations also contribute to the overarching development results. The evaluation concluded that the MPEE project clearly contributed to achieving the overarching development results, in particular by focusing attention on hospitals, but the project would have had less impact without its cooperation with NEFCO.

(Ref 3, 4, 5, 6, 7, 8, 23, 32; Int 1, 3, 4, 6, 10, 12 with partner organisation; Int 3 with other stakeholder; Int 1, 2, 3, 4, 5 with donor; Int 5, 6, 8, 10 with GIZ.)

Third, the extent to which the impact of the project was positively or negatively influenced by framework conditions, other policy areas, strategies or interests was examined. Here, the evaluation found that strong political support from the German Government for Ukraine and the strong interest of the Ukrainian Government in increasing the security of its energy supply had a positive influence on the project outcome and programme impact.

(Ref 1, 2, 3, 4, 5, 6, 7, 8, 23, 28, 32, 33; Int 3, 4, 6, 10, with partner organisation; Int 4 with other stakeholder; Int 3, 4, 5 with donor; Int 6, 8, 10 with GIZ.)

Fourth, the question as to what would have happened without the project was assessed. During the evaluation mission, this question was asked during all interviews. Based on the resulting statements from the stakeholders, the following alternative scenario, describing what would have happened at impact level if the project had not been set up, was developed:

- We would not have such a deep understanding of energy efficiency. Developing EE measures would be more difficult, and they would be of lower quality.
- Our clinic would be around 15 years behind EU standards.
- There would be no pilot project showcasing energy efficiency in hospitals.
- We would have done nothing at all in our hospital.
- The interest of other donors in energy efficiency in hospitals would be much less or would not exist at all.
- Modernising our hospital would have taken much more time and we would not know what the best choices for EE measures are.
- Our local government authorities would not think about EE in hospitals. They would not have such a clear view of this theme.
- Our donor organisation would not have focused on hospitals but on other public buildings.

In conclusion, the evaluation found that the project made a significant contribution to foregrounding hospitals for EE measures, not only for local and national government bodies but also for international organisations.

(Ref: all stakeholders.)

Fifth, the evaluation examined the extent to which the project made an active and systematic contribution to wider dissemination of impact. The evaluation showed that various communication channels were set up to disseminate experience and results from the MPEE project, including publications (e.g. a brochure on implementation of the energy-efficient thermo-modernisation of hospital buildings and an ’energy efficiency alphabet for hospitals’), webinars, videos (through partners’ websites), manuals (‘Energy Efficiency First Aid Kit’), online tools (a map of energy auditors) and social media. Moreover, results and experience were disseminated through specially established dialogue platforms and networks (such as a dialogue platform for meetings and networks of chief doctors and energy managers in hospitals in the partner cities). The evaluation therefore concluded that the project made an active and systematic contribution to widespread impact (for more detailed information please also refer to chapter 4.6).

(Ref 3, 4, 5, 6, 7, 16, 23, 27, 32, 34, 35, 36; Int 1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15 with partner organisation; Int 1, 2, 5, 6 with other stakeholder; Int 2, 3 with donor; Int 5, 6, 7, 8, 10 with GIZ.)

To summarise, the reduction of energy consumption and the project's contribution to the programme objective appear obvious. However, the evaluation could not verify the accuracy of the reported energy savings of 3,500 MWh/year, as there was no clear baseline for the calculation. The project also contributed to ensuring access to affordable, reliable, sustainable and modern energy for all (SDG 13). Stakeholders interviewed confirmed the programme's contribution to the reduction of energy consumption and underlined its relevance for security of energy supply in the country, which still constitutes a high-level national priority. The stakeholders confirmed that the EE measures also led to monetary savings, although these were retained by the municipalities rather than directly benefiting the hospitals. The contribution of the project to SDG 3 was therefore partly confirmed. The evaluation also found that several donor organisations and implementing agencies are active in the field of energy efficiency in Ukraine and also contribute to the overarching development results. The cooperation between the MPEE project and NEFCO permitted financial investment in EE measures in another building at the MPEE partner pilot hospital in Sumy. The evaluation concluded that the impact of the MPEE project was enhanced by cooperation with NEFCO. In addition, NEFCO would not have invested in hospitals without the MPEE project. Regarding the influence of framework conditions, the evaluation found that strong political support from the German Government for Ukraine and the strong interest of the Ukrainian Government in increasing the security of its energy supply had a positive influence on the project outcome and programme impact. Assessment of a counterfactual situation demonstrated that without the project a smaller number of hospitals would have implemented EE measures and these would have been of much lower quality. The evaluation showed that the MPEE project undoubtedly made a significant contribution to foregrounding hospitals for EE measures, not only for local and national governments but also for international organisations. In regard to wider dissemination of results and impact, the project set up various communication channels, such as brochures, videos, online tools and social media.

The evaluation concluded that the MPEE project partly contributed to achieving the occurred or foreseen overarching development results, in particular by foregrounding hospitals for energy efficiency measures. In addition, the impact of the MPEE project was enhanced by cooperation with NEFCO. (20 out of 30 points).

Impact dimension 3: No project-related (unintended) negative results at impact level have occurred and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results at the impact level has been monitored and additional opportunities for further positive results have been seized.

First, the evaluation examined whether unintended positive or negative results at impact level could be observed and if there were negative trade-offs between the environmental, economic and social dimensions (in accordance with the three dimensions of sustainability in Agenda 2030). As a result of the project activities, a number of positive unintended results at impact level were observed. For instance, local government and hospital staff in the partner municipalities developed increased capacity, not only in the area of energy efficiency but also in management in general (e.g. in tender processes and supervision of auditors). As a consequence of the modernisation activities, hospital staff and patients and staff benefited from better conditions. Moreover, the hospitals were better prepared to respond to the COVID-19 pandemic (social). For instance, the Sumy pilot hospital was selected to set up 230 beds for COVID-19 patients, as the project results had ensured it was in the best possible condition. The reduction in energy consumption achieved also led indirectly to reductions in greenhouse gas emissions and (although not quantifiable) in air pollution due to lower consumption of fossil fuels (coal, gas) in power plants (environmental). The replacement of energy-consuming water pumps with energy-efficient pump systems also led to significant reduction of water consumption in the partner hospitals. Monitoring data indicate that hot water consumption was reduced by more than 10% in 7 hospitals and cold water consumption by more than 10% in 9 hospitals (environmental). As well as monetary savings for partner municipalities, the MPEE project also brought additional economic benefits, such as capacity development of sub-contractors and support for energy auditors through networking. Moreover, the MPEE project had a trigger effect on other donor organisations, leading to a stronger focus on energy efficiency in hospitals. According to the interviewees, no negative unintended results occurred during implementation of the project. The evaluation

therefore concluded that the project obtained unintended positive results and exploited potential synergies between the environmental, economic and social sustainability dimensions. There were no negative trade-offs between the sustainability dimensions and no negative unintended results.

(Ref 3, 4, 5, 6, 7, 8, 10, 12, 18, 23, 32; Int 1-15 with partner organisation; Int 6 with other stakeholder; Int 1, 3, 4, 5 with donor; Int 6, 7, 10 with GIZ.)

Second, the question as to what measures were taken by the project to avoid and counteract risks, negative results and/or trade-offs, was examined. Several risks for the project impact were identified. At political level, changes in political authorities (government ministers, heads of SAEE, mayors) due to elections or changes in ministerial responsibilities for energy and EE could have led to delays or changed priorities, for example in tariff policy. The project reacted by involving all political forces in the country in dialogue and information processes and was prepared to adapt individual measures if required. In addition, there was a risk that the still subsidised prices for electricity and heating would make a number of technically interesting EE investments appear economically unviable. In order to reduce this risk, the project objective deliberately focused on hospitals, which were under the greatest pressure to act to save on energy costs. By initially concentrating on EE measures that do not require high investment but produce demonstrable savings, the project took into consideration the tight financial situation of hospitals and their owners. The evaluation concluded that risks were properly identified during project implementation and systematically monitored.

(Ref 3, 4, 5, 6, 7, 8, 9, 23, 28, 32; Int 3, 4, 6, 10 with partner organisation; Int 4 with other stakeholder; Int 3, 4, 5 with donor; Int 5, 6, 7, 10 with GIZ.)

Third, the extent to which potential unintended positive results and potential synergies between the environmental, economic and social dimensions were monitored and exploited was assessed. The evaluation found that potential synergies had already been considered during the planning phase of the project and this was reflected in the project documents. Moreover, the project exploited synergies with environmental, economic and social dimensions (see above). There were no negative trade-offs between the environmental, economic and social dimensions. The evaluation therefore concluded that potential unintended positive results and potential synergies between the environmental, economic and social dimensions were exploited, but not monitored.

(Ref 3, 4, 5, 6, 7, 12, 15, 17, 18, 23, 28, 32; Int 1–15 with partner organisation; Int 6 with other stakeholder; Int 6, 10 with GIZ.)

In summary, the project contributed to several positive unintended results at impact level, such as the increased capacity of local governments and hospitals in partner municipalities, not only in the area of energy efficiency but also in management in general. The project successfully exploited potential synergies between the environmental, economic and social dimensions, e.g. by introducing energy-efficient pump systems in the partner hospitals, which led to significant reductions in water consumption (environmental). The reduction in energy consumption that was indirectly achieved also led to lower emissions of greenhouse gases and a reduction (although not quantifiable) in air pollution due to lower consumption of fossil fuels (coal, gas) in power plants (environmental). The project made a positive contribution to additional social benefits in particular. As a consequence of the modernisation activities, hospital patients and staff benefited from better conditions. Moreover, the hospitals were better prepared to respond to the COVID-19 pandemic (social). In terms of economic benefits, in addition to monetary savings for partner municipalities, the MPEE project also strengthened the capacity of subcontractors and of energy auditors. The evaluation particularly highlighted the trigger effect that the MPEE project had on other donor organisations, leading to stronger focus on energy efficiency in hospitals. There were no negative trade-offs between the environmental, economic and social dimensions. According to the interviewees, no negative unintended results occurred during implementation of the project.

Political risks, such as changes in political authorities (government ministers, heads of SAEE, mayors) due to elections or changes in ministerial responsibilities, leading to delays or changed priorities were properly identified. The project counteracted the risk that the still subsidised prices for electricity and heating would make a number of technically interesting EE investments economically unviable by deliberately focusing on hospitals,

which were under the greatest pressure to save on energy costs, and on EE measures that do not require high investments but produce demonstrable savings. Risks were systematically monitored. However, unintended positive results and trade-offs were not. (27 out of 30 points).

Table 6: Rating of OECD/DAC criterion: impact

Criterion	Assessment dimension	Score and rating
Impact	The intended overarching development results have occurred or are foreseen (plausible reasons).	40 out of 40 points
	The outcome of the project contributed to the occurred or foreseen overarching development results.	20 out of 30 points
	No project-related (unintended) negative results at impact level have occurred – and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized.	27 out of 30 points
Overall score and rating		Score: **87 out of 100 points** Rating: Level 2: successful

4.5 Efficiency

Evaluation basis and design for assessing efficiency

Evaluation basis

The evaluation of the efficiency criterion was based on analysis of whether the results of the MPEE project were obtained in an efficient way. The evaluation of the efficiency criterion examined the following two assessment dimensions and evaluation questions:

- The project's use of resources is appropriate with regard to the outputs achieved (production efficiency: resources/outputs).
  - To what extent are there deviations between the identified costs and the projected costs? What are the reasons for the deviation(s) identified?
  - To what extent could the outputs have been maximised with the same amount of resources, under the same framework conditions and at the same or better quality (maximum principle)?
  - To what extent could outputs have been maximised by reallocating resources between the outputs?
  - Were the output/resource ratio and alternatives carefully considered during the design and implementation process – and if so, how?
- The project's use of resources is appropriate in regard to achieving the project objective (allocation efficiency: resources/outcome).
  - To what extent could the outcome (project objective) have been maximised with the same amount of resources and at the same or better quality (maximum principle)?

- Were the outcome/resource ratio and alternatives carefully considered during the design and implementation process – and if so, how?
- To what extent were more results achieved through cooperation and synergies and/or leverage of more resources, with the help of other bilateral and multilateral donors and organisations (e.g. co-financing) and/or other GIZ projects? If so, was the relationship between costs and results appropriate?

Evaluation design

For each of the assessment dimensions, several evaluation questions (as already outlined under evaluation basis) and corresponding evaluation indicators were used to cover all relevant evaluation aspects. Additionally, the Excel efficiency tool developed by the GIZ Evaluation Unit was used for data collection, assigning costs to project outputs and analysing production efficiency. The tool applies a 'follow-the-money' analysis and shows the use of resources for the respective outputs. The analysis of Efficiency dimension 2 mainly followed the evaluation questions (Annex 1) and was only partly based on cost data.

For further details, see the evaluation matrix (Annex 1).

Empirical methods

The GIZ efficiency tool was used to analyse production efficiency,. Moreover, the tool analysed production efficiency against progress on the indicators associated with each output. The MPEE project started in 2016, when project design was not based on the expectation of output-related efficiency and consequently financial monitoring was not output-specific. Therefore, a post-implementation analysis in accordance with the current GIZ guidelines was extremely ambitious. As a consequence, allocation of costs to outputs was based predominantly on estimation and discussions with the project team.

The data sources available included the project finance report (*Kostenträger-Obligo-Bericht*), progress reports, results presentations and monitoring system. The documents were assessed against the evaluation questions. Moreover, the evaluation team applied a 'follow-the-money' approach and assessed whether there was potential for improving the project efficiency. This was carried out by analysing during interviews with the project team and partner organisations whether there was potential to increase production efficiency and/or allocation efficiency. Additionally, opinions and data were collected from key stakeholders during the evaluation mission by applying semi-structured interviews based on the evaluation questions. Data obtained by document analysis was then triangulated with the opinions of key stakeholders. Key stakeholders included representatives from municipalities, hospitals, national partner-institutions, private-sector companies, donor organisations, NGOs and project staff. Finally, the evaluators undertook an expert assessment of the reliability of the results obtained. The advantages of the methods described are methodological diversity and triangulation based on document analysis and a participatory approach. A disadvantage of the methods selected might be that they were not based on scientific data but on subjective judgements. However, potential outliers were counterbalanced by selecting diverse interview partners.

Analysis and assessment regarding efficiency

Efficiency dimension 1 (production efficiency): The project's use of resources is appropriate with regard to the outputs achieved (output level).

First, the extent to which there were deviations between the identified costs and the initial projection costs was assessed, and, if possible, what reasons for the deviations could be identified. The evaluation found that the project was modified on a cost-neutral basis twice, due to delays in implementing the pilot projects. The original project budget of EUR 3,000,000 was not increased. Analysis of the finance report showed that the project managed its resources largely in accordance with its initial cost plan (cost lines). While costs for experts and financing were slightly higher than planned, costs for procurement and HCD measures were slightly lower. At the time of the evaluation mission (May 2020), the project budget was almost completely spent, apart from still

outstanding amounts required to complete the pilot projects. No major deviations from the initially planned costs were stated.

(Ref 3, 4, 5, 6, 7, 25, 26, 29, Int 7 with GIZ.)

Second, the evaluation focused on the extent to which the outputs could have been maximised with the same amount of resources, under the same framework conditions and at the same or better quality (maximum principle). In order to answer this question, the evaluation assessed whether the project managed its resources according to the planned costs for the agreed outputs. However, it was found that, in accordance with procedures still valid at the planning stage, the project design was not based on output-specific costs. The costs for staff resources were therefore allocated to the various outputs based on information from the project manager. The allocations of other costs were based on estimates or divided equally among all five outputs. The resulting costs per output were as follows:

Output A	18%
Output B	20%
Output C	14%
Output D	40%
Overarching costs	7%

These figures indicate that the costs for Output A (energy efficiency consulting and financial services for hospitals), Output B (training of hospital staff) and Output C (platforms for professional dialogue and exchange) were quite well balanced and between 14% and 20%. This corresponds to the nature of the activities, mainly advisory and capacity-development measures, used to achieve these outputs. At 40% of the budget, Output D (pilot projects) had the highest costs per output, which is explained by the additional costs for grants and subsidies for construction and EE measures (e.g. insulation of facades, basement and socle (wall base), replacement of doors and windows, installation of heat meters and heat-carrier supply control units). The distribution of resources to outputs appears plausible and comprehensible. The proportion of overarching costs (e.g. management costs, costs associated with monitoring and reporting) was only 7% and therefore very reasonable.

The project's mix of instruments was characterised by the large proportion of experts. Except at management level, the MPEE project staff was mainly composed of national experts with strong technical know-how and management skills and the capacity to interact with partner organisations. The staff composition was a clear benefit for the project. The expert costs of the project were well balanced between international staff (project management), national staff (technical experts and administration) and short-term experts (consulting, training). These costs were evaluated as plausible and adequate. Procurement costs were quite low, which also corresponded to the strategic focus of the project outputs on capacity development. The financing instruments, which included grants and subsidies, were mostly used for construction measures and constituted a significant part of the project budget. Given the innovative nature of the pilot projects, the allocation of grants and subsidies for construction measures was evaluated as plausible.

Additionally, it was found that all output indicators were 100% achieved with the resources available. The evaluation concluded that the project managed its resources well, considering in particular the quite limited budget available and the challenges in implementing two pilot projects.

(Ref 3, 4, 5, 6, 7, 19, 20, 24, 25, 26, 29, 30, 32; Int 1, 3, 5, 6, 7, 12 with partner organisation; Int 7 with GIZ.)

Third, the extent to which outputs could have been maximised by reallocating resources between the outputs was assessed. The central point here was whether the project could have managed its resources to achieve other outputs better or faster if projected outputs had either already been achieved or were not achievable. As

stated above, although the project design was not based on output-specific costs, it was found that all output indicators were 100% achieved with the resources available. The evaluation therefore concluded that there was no visible potential for maximisation of project resources through reallocation.

(Ref 3, 4, 5, 6, 7, 19, 20, 24, 25, 26, 29, 30, 32; Int 1, 3, 5, 6, 7, 12 with partner organisation; Int 7 with GIZ.)

Fourth, the evaluators assessed whether the output/resource ratio and alternatives were carefully considered during the design and implementation process – and if so, how? The evaluation focused here on whether the partner constellation and the associated levels of intervention detailed in the project proposal could be fully realised in terms of the estimated costs in relation to the projected outputs of the project. The evaluation showed that, as part of the Energy Efficiency Programme, the project mainly focused on the meso and micro intervention levels, while the macro level was covered by a specific programme project that aimed to improve the legal framework for energy efficiency in Ukraine. This complementary distribution of intervention levels appeared plausible. The partner constellation of the MPEE project comprised municipalities, hospitals, energy auditors, NGOs and (to a lesser degree) national institutions. The partner constellation was of medium complexity and could be fully realised. Moreover, the evaluation analysed whether the various thematic topics included in the project proposal were well implemented in terms of estimated costs in relation to expected project outputs. The results showed that the project succeeded in fully covering the topics dealing with energy efficiency in hospitals.

The evaluation concluded that the project output/resource ratio and alternatives were carefully considered during the design and implementation processes. The project partners fully realised the partner constellation and complemented the Energy Efficiency Programme by focusing on the micro and meso levels.

(Ref 1, 2, 3, 4, 5, 6, 7, 8, 19, 20, 24, 25, 26, 29, 30, 32; Int 1, 3, 4, 5, 6, 7, 10, 12 with partner organisation; Int 5, 7 with GIZ.)

In summary, the project managed its resources in accordance with the planned costings (cost lines) and no major deviations from initially planned costs were declared. Moreover, all output indicators were 100% achieved with the resources available. The costs for the four outputs were largely well balanced, with a higher share for Output D (pilot projects), which is explained by the additional costs for grants and subsidies. The proportion of overarching costs is only 7% and therefore very reasonable. The project's instrument mix was also well balanced. As part of the Energy Efficiency Programme, the project mainly focused on the micro and meso intervention levels, while the macro level was covered by a specific programme project that aimed to improve the legal framework for energy efficiency in Ukraine. This complementary distribution of intervention levels appears plausible. The project succeeded in fully realising its partner constellation and covering the topics dealing with energy efficiency in hospitals with the resources available. It was therefore concluded that the project's use of resources was appropriate to the outputs achieved. However, there was potential to improve monitoring and documentation of results achieved, for example by setting clear baselines. (67 out of 70 points).

Efficiency dimension 2 (Allocation Efficiency): The project's use of resources is appropriate with regard to achieving the project objective (outcome level).

First, the evaluation focused in particular on assessing to what extent the outcome could have been maximised using the same amount of resources but maintaining the same or better quality (maximum principle). In this regard, the stakeholders interviewed confirmed that the project achieved its maximum outcome in accordance with the indicators and within the allocated budget. All outcome indicators were probably achieved to 100% with the resources available – although there were challenges regarding quantification of energy savings. The instruments mix, characterised by a large proportion of experts as well as grants and subsidies for construction measures, was adequately designed to address the project objective. The partner cities, Sumy and Chernihiv, contributed to the project through in-kind contributions at an estimated value of EUR 90,000. The partner contribution was considered appropriate.

(Ref 3, 4, 5, 6, 7, 19, 20, 24, 25, 26, 29, 30, 32; Int 1, 3, 4, 5, 6, 7, 10, 12 with partner organisation; Int 5, 7 with

GIZ.)

Second, the evaluators assessed whether the outcome/resources ratio and alternatives were carefully considered during the conception and implementation process and if so, how. They therefore examined whether the project succeeded in allocating its resources among the outputs so that the project achieved maximum results at outcome level. It was found that all outcome indicators were probably achieved to 100% with the available resources – although there were challenges regarding quantification of energy savings. Resources were adequately directed to the various outputs. Moreover, an analysis was conducted to ascertain whether the partner constellation defined in the project proposal and the associated levels of intervention were fully realised in terms of the estimated costs in relation to the project's expected outcome. It was concluded that in achieving the project outcome the project successfully covered its intervention areas (meso, micro). In addition, the project succeeded in cooperating with its partner structure, which was key for achieving the outcome. Next, it was assessed whether the various thematic topics itemised in the project proposal had been well implemented in terms of the estimated costs in relation to the projected outcome. The evaluation concluded that the project successfully covered topics dealing with energy efficiency in hospitals and included innovative activities such as the #Hospital_EnergyLab hackathon. The project probably achieved all outcome indicators to 100% – although there were challenges regarding the quantification of energy savings.

(Ref 3, 4, 5, 6, 7, 10, 12, 26, 29, 30, 32; Int 1, 3, 4, 5, 6, 7, 10, 12 with partner organisation; Int 6 with other stakeholder; Int 3 with donor; Int 5, 7 with GIZ.)

Third, the evaluators investigated whether more results were achieved through synergies and/or leverage of additional resources and with the help of other bilateral and multilateral donors and organisations and if so, was the relationship between costs and results appropriate. The question of whether the project took the appropriate steps to fully create synergies with interventions by other donors could be answered positively. The MPEE project successfully leveraged funds from NEFCO, which complemented the project outcome by financing investment measures to improve energy efficiency in the partner hospitals. Moreover, the project successfully created synergies by cooperating closely with the Energy Efficiency in Municipalities (EEIM) project of the Energy Efficiency Programme (e.g. by organising joint events, cooperating in training energy auditors and promoting results of the MPEE project through the EEIM project).

(Ref 1, 2, 3, 4, 5, 6, 7, 26, 29, 30, 32; Int 1, 3, 4, 5, 6, 7, 10, 12 with partner organisation; Int 6 with other stakeholder; Int_ -5 with donor; Int 5, 8, 10 with GIZ.)

To summarise, the project probably achieved all outcome indicators to 100% with the resources available – although there were challenges regarding the quantification of energy savings. The instruments mix was adequately designed to address the project objective, resources were adequately directed to the different outputs and the partner contribution was appropriate. Furthermore, the project successfully covered its intervention areas (meso, micro) and succeeded in cooperating with its partner structure, which was key for achieving the outcome. Additionally, it successfully covered topics dealing with energy efficiency in hospitals, and included innovative activities such as the #Hospital_EnergyLab hackathon. Moreover, the project successfully leveraged funds from NEFCO, which complemented the project outcome by financing investment measures to improve energy efficiency in the partner hospitals, and created synergies in cooperating closely with the EEIM project, part of the Energy Efficiency Programme. The evaluation therefore concluded that the project's use of resources was appropriate to achieving the project objective. However, there was potential to improve monitoring and documentation of results achieved, for example monitoring of energy savings. (27 out of 30 points).

Table 7: Rating of OECD/DAC criterion: efficiency

Criterion	Assessment dimension	Score and rating
Efficiency	The project's use of resources is appropriate with regard to the outputs achieved. (Production efficiency: resources/outputs)	67 out of 70 points
	The project's use of resources is appropriate with regard to achieving the projects objective (out-come). (Allocation efficiency: resources/outcome)	27 out of 30 points
Overall score and rating		Score: **94 out of 100 points** Rating: Level 1: highly successful

4.6 Sustainability

Evaluation basis and design for assessing sustainability

The extent to which an assessment of sustainability and a forecast of results was possible at the time of the evaluation was defined as highly probable. This level of probability was due to the fact that the project began on 1 August 2016 and was completed on 30 June 2020. As a consequence of its completion, the activities and outputs of the project were already accomplished. In this regard, energy-efficiency consulting services had been provided to the hospitals and hospital staff training had taken place. In addition, platforms for professional dialogue and exchange were established, with the prospect that they would receive further support after the end of the project. Finally, two pilot projects in two selected hospitals were finalised.[8] Moreover, relevant project documents (i.e. the concept for training on energy management in hospitals, a study with an analysis of financing opportunities, energy audits conducted in hospitals in Sumy and Chernihiv, data on energy consumption and CO2 emissions for Sumy and Chernihiv municipal hospitals during the period 2015–2019, associate studies, plans and guiding frameworks) were readily available. These conditions greatly facilitated assessment of the sustainability of the project and its planned results. At the same time, potential changes to the framework conditions of the project, including ongoing decentralisation, reforms in health care services and the energy sector, compounded by frequent staff changes in the government ministries responsible due to political volatility, hampered the long-term forecast of sustainability.

Evaluation basis

The evaluation of the sustainability criterion examined the extent to which the results of the project and its impact are sustainable. In this context, the evaluation was based on analysis of whether the positive results identified within the scope of the three dimensions of sustainability (economic, social and environmental) were institutionalised in Ukrainian partner institutions and the target groups' operating system structures after financial support from the German Government through BMZ had ended. The evaluation of the sustainability criterion also analysed the assessment dimensions as outlined in the guide for sectoral projects, global projects and International Cooperation with Regions for Sustainable Development (IZR) projects and the project's evaluation matrix. In this regard, the evaluation analysed two assessment dimensions on the basis of their respective

[8] The pilot project in St Zinaida's Children's Hospital in Sumy was finalised by the end of 2019 and the increased level of comfort for patients as well as energy savings were already noticeable for the 2019/2020 heating season, while the pilot project in the Maternity Hospital in Chernihiv was being finalised during the evaluation stage, with 30 June 2020 as the final completion date.

evaluation questions:

- Prerequisites for ensuring the long-term success of the project: results are anchored in (partner) structures.
  - What has the project done to ensure that the results can be sustained in the medium to long term by the partners themselves? What is the project's exit strategy?
  - In which ways are the advisory content, approaches, methods or concepts of the project anchored, institutionalised, continuously used or further developed in the (partner) system?
  - To what extent are resources and capacities at individual, organisational or societal/political level in the partner institutions available (in the longer term) to ensure continuation of the results achieved?
  - How are the lessons learned identified and documented?
- Forecast of durability: results of the project are permanent, stable and long-term resilient.
  - To what extent are the results (outcome and impact) of the project durable, stable and resilient in the long term under the prevailing conditions?
  - What risks and potentials are emerging for the durability of the results (outcome and impact) and how likely are these factors to occur? What has the project done to reduce these risks?

In addition to the dimensions above, the evaluation appraised the project's exit strategy and the mechanisms established to identify and document lessons learned as a result of project implementation. The evaluation also analysed positive synergies created among project stakeholders and negative trade-offs that might possibly have been made between the three sustainability dimensions (economic, social and environmental).

Evaluation design

For each of the assessment dimensions, several evaluation questions (as outlined above) and corresponding evaluation indicators were used to cover all relevant aspects. For further details, see the evaluation matrix (Annex 1).

Empirical methods

The data sources that were available to assess the sustainability criterion included the monitoring system and the project documents, such as the project proposals, results logic, results matrix, associated studies and progress reports. The completeness and quality of outputs from the project was also examined. Moreover, opinions of key stakeholders and data were collected during the evaluation mission by applying semi-structured interviews based on the evaluation questions. The interviews with stakeholders were conducted using virtual meeting technology (for more information on the selected interview partners, see Section 3.2). Data obtained by document analysis was triangulated with opinions and data from key stakeholders. Finally, the evaluators undertook an expert assessment of the reliability of the results obtained.

Analysis and assessment regarding sustainability

Sustainability dimension 1: Prerequisite for ensuring the long-term success of the project: results are anchored in (partner) structures.

The assessment of the prerequisite for ensuring the long-term success of the project fundamentally examined how results of the project were anchored in the partner structures. Taking into consideration that the project was a bilateral project with a defined partner system, the evaluation focused on the long-term success of the project results in the private sector (energy auditors) and in municipalities. In this regard, the project results included the continuation of the following activities by various stakeholders:

- Local contractors continue to offer new advisory and/or financial services for increasing energy efficiency in hospitals.
- Professional and managerial staff in municipalities and hospitals continue to apply knowledge obtained in training courses on energy efficiency.

- Communication platforms continue to be used by relevant stakeholders for professional dialogue and exchange of information and experience.
- Hospitals continue to maintain pilot projects.

Additionally, the evaluation team assessed the probability that these results will be anchored at the level of the relevant government ministries.

First, examination of the extent to which the project ensured that the results identified above could be sustained in the medium to long term found that energy auditors that had participated in the training and had applied newly obtained knowledge when conducting energy audits in hospitals within the framework of the project continued to offer new energy audit services to hospitals. It was also established that the Association of Energy Auditors continued to use materials from the training conducted within the framework of the project for their own training courses offered to energy auditors. They also continued to maintain and update the map of energy auditors that had been developed with project support.[9] In addition, it was noted that the National Technical University of Ukraine, which participated in the training of trainers, was offering training courses on energy management in hospitals based on training materials developed within the framework of the MPEE project.

(Ref 1, 7, 11, 16, 27, 34, 39; Int 8, 14, 15 with partner organisation; Int 2, 6 with other stakeholder; Int 9 with GIZ.)

Second, the evaluation noted that the staff in municipalities and hospitals responsible for energy and energy efficiency issues (energy managers) continued to apply knowledge obtained in training courses on energy efficiency to plan and implement energy efficiency improvement projects (e.g. financed from the municipal budget) and/or to ensure effective management regimes for public buildings. In particular, all municipalities and hospitals that obtained the energy management device kits (financed by the MPEE project) continued to use them on a regular basis to monitor conditions not only in hospitals but also in other public buildings in their respective municipalities. The use of measurement devices and deeper understanding that regular measurements are key in energy management systems led to municipalities buying more kits to ensure that measurements can be done in more public buildings.

(Ref 1, 10, 11, 12, 27, 34, 35, 36, 38; Int 1, 2, 5, 7, 9, 11, 12, 13, 14, 15 with partner organisation; Int 5, 9 with GIZ.)

In taking a closer look at the manner in which advisory content, approaches, methods and concepts from the project have been anchored at the level of municipalities, the evaluation found that managerial staff in municipalities and hospitals were highly motivated to implement further energy efficiency projects in hospitals and to make use of their newly acquired experience. This included not only better understanding of the direct benefits of such projects but also improved capacity to define priority projects and effectively plan and execute these. There is also now an understanding that complex renovation of a whole building envelope is more efficient than stand-alone, simple measures such as replacing windows and lighting systems. However, the financial resources for large-scale investment in energy efficiency in public buildings are not available to municipalities, due to the limited revenues of the development funds[10] of local budgets and a poorly developed market for municipal borrowings.

(Ref 10, 11, 12, 27, 34, 35, 36, 37, 38; Int 1, 2, 3, 5, 6, 7, 9, 11, 12, 13, 14, 15 with partner organisation; Int 1, 2, 3, 4, 5 with donor; Int 3, 5 with other stakeholder; Int 8, 9, 10 with GIZ.)

In regard to the continued functioning of platforms for professional dialogue and the exchange of information and experience, the evaluation established that the network of energy managers continued to operate, both in a formally regulated manner (advance planning of the agendas for quarterly meetings) and informally (free

[9] The online database of energy auditors who's professional qualifications were verified by the Association of Energy Auditors:

[10] Development funds are a part of local budgets that may be used for capital investment. The main source of revenue for the development funds is the sale of land and property and for most Ukrainian municipalities this type of revenue is scarce in the current economic conditions.

communication exchange over the phone between energy managers on any issues that may arise on the subject of energy efficiency in public buildings). Regular quarterly meetings were interrupted by the COVID-19 pandemic, but remote communication continued. At the same time, the evaluators collected somewhat limited evidence of active functioning of the network for chief doctors in hospitals in regard to energy efficiency issues. The project's exit strategy largely relied on the continued functioning of platforms for professional dialogue and the exchange of information and experience.

(Ref 8, 16, 27, 34, 35; Int_1, 2, 5, 7, 8, 9, 11, 12, 13 with partner organisation; Int 1, 3, 5, 6 with other stakeholder; Int 9 with GIZ.)

The pilot project in St Zinaida's Children's Hospital in Sumy was finalised by the end of 2019 and by then the hospital and the municipality of Sumy[11] had already been able to make monetary savings in the second half of the 2019/2020 heating season. At the same time, hospital patients communicated to the hospital management their satisfaction with the increased level of comfort in the renovated facility. The evaluation team noted that, as a result of the project, the hospital established a regular procedure for measurement of ambient temperatures, humidity and illumination levels within the facility (using a differentiated set of parameters for different types of premises, depending on their function) as well as a special ventilation schedule. The evaluation concluded that it is highly likely that the hospital will continue to maintain these new procedures going forward. As the pilot project in the Maternity Hospital in Chernihiv was only completed in June 2020, the current benefits of the project are still to be ascertained.

(Ref 10, 12, 19, 20, 27, 36; Int 1, 3, 5, 6, 7, 12 with partner organisation; Int 9 with GIZ.)

Lastly, the evaluation noted that the Ministry for Communities and Territories Development of Ukraine (MinRegion) has closely monitored implementation of the whole project and has concluded that experience from the MPEE project provides positive assurance on the possibility of effectively designing and implementing similar energy efficiency projects in hospitals to be funded from the state budget. However, the recent frequent changes of staff at the top level of the relevant ministries (including MinRegion, the Ministry of Health and SAEE) is a risk factor that could affect the sustainability of the project results.

(Ref 1, 8, 9, 27, 33, 37; Int 4, 10 with partner organisation; Int 3, 4, 5 with other stakeholder; Int 8, 9, 10 with GIZ.)

In summary, the prerequisite for ensuring the long-term success of the project depends to a large extent on the staff in the hospitals and municipalities of Sumy and Chernihiv, on the energy auditors that participated in the projects and on support from key partners and MinRegion. The project's exit strategy largely relied on the continued functioning of platforms for professional dialogue and the exchange of information and experience. However, for massive energy-efficient renovation of hospitals in Ukraine to gain greater momentum and uptake, significant amounts of institutional and countrywide systemic and structural development will be required. In addition, financial resources to increase promotion, capacity development, awareness and knowledge transfer will be needed and this requires support from donor organisations. Frequent staff changes in government ministries also put at risk the sustainability of the project results. In conclusion, well anchored results were not completely established and implemented in (partner) structures. As a result, the prerequisite for ensuring the long-term success of the project is not yet entirely fulfilled (40 out of 50 points).

Sustainability dimension 2: Forecast of durability: results of the project are permanent, stable and long-term resilient.

The forecast of the durability of results was a key element of the sustainability criterion; it also referred to the

[11] Hospitals are financed from municipal budgets

results that were identified under the effectiveness and the impact criteria. Evaluation indicators for Sustainability dimension 2 were as follows:

- Experience from hospital energy efficiency pilot projects is being disseminated to other hospitals and/or municipalities.
- Based on project experience, partner municipalities finance additional measures to reduce primary energy consumption in selected areas of public service provision.

Through a participatory approach with project partners, direct beneficiaries and key stakeholder groups, potential external and internal drivers, critical success factors, impediments and risks for sustainability were identified and discussed. These discussions allowed for determination of realistic assumptions regarding the stability and resilience of the results achieved. In addition, the evaluation discussed the stability and resilience of the project's contribution to the programme objective and its indicators, in particular the reduction of primary energy consumption in selected areas of public services in partner municipalities. Taking into consideration that it was anticipated that results at an impact level above the programme objective, such as contributions to the SDGs, would have a mid-term or long-term time horizon, the evaluation team based its assessment on the probability that these results would be achieved by applying a participatory approach and expert assessment.

The evaluation noted that experience from hospital energy efficiency pilot projects started to be disseminated primarily in the municipalities where the projects took place (Chernihiv and Sumy). Both cities have a large number of hospitals to be renovated, so the evidence of significant energy savings, increased comfort levels for patients and medical staff combined with the overall improved appearance of the hospital buildings provided a strong incentive to proceed with implementation of similar projects in other hospitals and further public buildings. The results of energy audits in 17 hospitals (covering 87 separate buildings) provided the foundation for planning of further projects of this kind. Dissemination of experience gained to other municipalities is anticipated to occur through the activities of the network of energy managers. Based on discussions with relevant stakeholders, the evaluation concluded that there is a good chance that this network will continue to be operational due to presence of well-established procedures (formal planning of regular meetings) and the positive experience of ad hoc communication exchanges within the network on specific issues and points of discussion. The initial selection process for locations for the pilot projects (of 30 eligible cities, 19 cities applied and 2 were selected) created interest and a significant number of municipalities participated in the selection process, thereby contributing to the resilience of the project results.

(Ref 1, 7, 8, 11, 16, 27, 35, 36, 37; Int 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15 with partner organisation; Int 4 with donor; Int 1, 3, 5 with other stakeholder; Int 9, 10 with GIZ.)

Experience of the MPEE project should also have a long-lasting effect is the area of energy audit – the concepts and the knowledge gained from the training provided through the project and from conducting energy audits in hospitals will continue to be used both by the experts who participated in the project activities and by the Association of Energy Auditors and the National Technical University of Ukraine, which integrated the concepts and materials into their own training programmes.

(Ref 8, 16, 27, 34, 35, 39; Int_8 with partner organisation; Int 2,6 with other stakeholder; Int 9 with GIZ.)

Although partner municipalities are clearly interested in further application of project experience by financing additional measures to reduce primary energy consumption in selected areas of public service, there are several limiting factors that may prevent widespread dissemination of the project results by partner municipalities and other interested municipalities. The first of these is the lack of funding at municipal level to finance renovation of public buildings – as explained above, the development fund components of municipal budgets are poorly resourced due to lack of revenue, while access to other finance is limited due to high interest rates on commercial bank loans and the absence of a vibrant bond market. Another limiting factor is the lack of sufficient numbers of contractors in the regions with the experience and ability to carry out high-quality renovation works in public buildings. Lastly, the ability of the majority of municipalities (as well as consolidated territorial

communities) to plan and monitor implementation of complex renovation project is limited due to the lack of experienced staff, as salaries are quite low in the sector. Notably, the COVID-19 pandemic has focused public attention on the condition of Ukrainian hospitals and the quality of medical services in general, which increases the prospects for long-term sustainability of the project.

(Ref 10, 11, 12, 27, 34, 35, 36, 37, 38; Int 1, 2, 3, 5, 6, 7, 9, 11, 12, 13, 14, 15 with partner organisation; Int 1, 2, 3, 4, 5 with donor; Int 3, 5 with other stakeholder; Int 8, 9, 10 with GIZ.)

In summary, the evaluation concluded that the project produced relevant and valuable results and laid a reasonably strong foundation for the durability of the results achieved. However, longer-term impact and permanency depends on several factors. First, lack of funding to finance extensive renovation of their buildings may not allow hospitals to benefit fully from energy efficiency measures. Second, the limitation due to insufficient numbers of high-quality contractors in the regions of Ukraine and the lack of experience and technical expertise at the level of municipalities in planning and implementation of complex projects is an impediment to extensive renovation of hospitals. Based on their evaluation of the project results, the evaluators concluded that, from a general perspective, the extent to which the longer-term results are durable, stable and resilient is highly dependent on availability of funding for municipalities, access to finance on the market, regulatory frameworks, capacity development interventions, meaningful knowledge transfer and information dissemination, development of a local contractor base and not least on continuing support from donors and political will and foresight at higher levels. Although prospects for the durability of the project's outcome appear to be quite good, due to the influence of the factors discussed above there is a moderate degree of uncertainty about the longer-term impact of the project's results and the long-term resilience of the project (40 out of 50 points).

Table 8: Rating of OECD/DAC criterion: sustainability

Criterion	Assessment dimension	Score and rating
Sustainability	Prerequisite for ensuring the long-term success of the project: results are anchored in (partner) structures.	40 out of 50 points
	Forecast of durability: results of the project are permanent, stable and long-term resilient.	40 out of 50 points
Overall score and rating		Score: **80 out of 100 points** Rating: Level 3: moderately successful

4.7 Key results and overall rating

Table 9: Overall rating of OECD/DAC criteria and assessment dimensions

Criterion	**Score** (max. 100)	**Rating**
Relevance	92 out of 100 points	Level 1: highly successful
Effectiveness	88 out of 100 points	Level 2: successful
Impact	87 out of 100 points	Level 2: successful
Efficiency	94 out of 100 points	Level 1: highly successful
Sustainability	80 out of 100 points	Level 3: moderately successful
Overall score and rating for all criteria	**88 out of 100 points**	**Level 2: successful**

Table 10: 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

5 Conclusions and recommendations

5.1 Factors of success or failure

The lessons learned presented in this section cover the project's design and implementation phases. The compilation can serve as a key to strengthen the design, implementation and overall management of the upcoming Energy Efficiency Programme or similar future projects. The key lessons learned from the MPEE project evaluation are as follows:

External factors

The strong political support from the German Government to Ukraine contributed to pushing the project and energy efficiency forward. In addition, the political willingness in Ukraine to reduce its energy dependence galvanised interest in the theme of energy efficiency and favoured the work of the project (and the Energy Efficiency Programme).

Project design and management

The structure of the Energy Efficiency Programme, with the MPEE project focusing on hospitals at micro and meso levels, limited the project's results at macro level but strengthened the project's results and impact on intermediaries and allowed two pilot projects to be set up. These pilot projects are considered as very relevant as showcases for the feasibility and potential of energy efficiency measures in hospitals. In addition, the macro level was covered by a specific project (Energy Efficiency in Municipalities, EEIM) in the Energy Efficiency Programme. The complementarity of the MPEE project and the EEIM project also created relevant synergies, e.g. by organising joint events, cooperating in training of energy auditors and promoting the results of the MPEE project through the EEIM project.

Cooperation management (in accordance with Capacity WORKS management model)

The existing long-term cooperation between BMZ/GIZ and municipalities in Ukraine represented a clear advantage and benefit for the MPEE project, as there was already an excellent cooperation basis in place.

The project management's and project team's knowledge of Capacity WORKS and GIZ management procedures and instruments was also a clear benefit for the project in regard to cooperation mechanisms and project implementation. The project demonstrated strong steering activity and cooperated closely with its main stakeholders. It also set up a fully functioning monitoring system, based on the GIZ DMS, which clearly showed the project's progress.

The project put considerable effort into fostering learning and innovation. Its proactive dissemination of experience and lessons learned, using diverse communication channels, including brochures, webinars, videos, manuals, online tools and social media, was a clear factor of success. Moreover, results and experience were disseminated through specific dialogue platforms and networks.

5.2 Conclusions and recommendations

Based on the findings of the project evaluation exercise, a number of recommendations were identified. These recommendations are mainly based on shortcomings uncovered during the evaluation exercise, comments from interviewees and lessons identified and discussed as a result of project design and implementation. The recommendations below should be viewed in the context of improving strategic orientation during the project

design process and identifying suitable, feasible and cost-effective approaches to strengthen the overall management of the upcoming Energy Efficiency Programme and similar projects in the future.

During its three-year period, the project significantly pushed forward the theme of energy efficiency in hospitals. However, wider dissemination of the impact at partner-country level demands not only awareness among decision-makers in municipalities and hospitals but also availability of funding to finance implementation of EE measures. To foster the sustainability of the project results, it is recommended that over the next three years the team for the upcoming Energy Efficiency Programme actively disseminate knowledge on the potential and feasibility of EE in hospitals to financial cooperation organisations (e.g. KfW).

For the implementation of pilot projects, it is recommended that future projects schedule enough time for planning, tendering and implementation and avoid carrying out construction works in the winter season.

The lack of availability of qualified subcontractors for implementation of EE measures presents a challenge, in particular for multiplication of the measures. It is recommended that in the next three years the team of the upcoming Energy Efficiency Programme focus strongly on capacity development for subcontractors in the specific field of energy efficiency, e.g. through professional, technical and vocational training. At the time of the evaluation, this aspect was being considered for integration in the upcoming programme.

In regard to definition of targets related to measurement of energy savings resulting from EE measures, energy auditors and project designers should take into account establishing a clear baseline for such measurements, climate correction and changes in the improvement of conditions inside renovated buildings.

During the evaluation mission, some stakeholders recommended ensuring participation of the Ministry of Health of Ukraine in upcoming activities for energy efficiency in hospitals. The team of the upcoming Energy Efficiency Programme should address this issue at the beginning of the programme.

List of references

Ref_1	Draft Energy Efficiency Programme in Ukraine (Programmentwurf)
Ref_2	Programme progress report (03/2020)
Ref_3	Project proposal
Ref_4	Project progress report (10/2017)
Ref_5	Project progress report (08/2018)
Ref_6	Project progress report (08/2019)
Ref_7	Project progress report (03/2020)
Ref_8	Stakeholder Map
Ref_9	Steering structure
Ref_10	CO2 emissions for municipal hospitals in Sumy and Chernihiv 2015-2019
Ref_11	List of hospitals having used newly created advisory and / or financing services for the planning and implementation of energy efficiency measures
Ref_12	Energy consumption for municipal hospitals Sumy and Chernihiv 2015-2019
Ref_13	Presentation on Outcome Indicator 2
Ref_14	Presentation on Outcome Indicator 3
Ref_15	European Centre for Disease Prevention and Control, WHO Regional Office for Europe. HIV/AIDS surveillance in Europe 2018 – 2017 data
Ref_16	Association of Energy Auditors of Ukraine: The concept of creation of online resource ‘Map of Energy Auditors’
Ref_17	Oksana Khmelnytska: Gender Analysis for the "Modernization Partnership for Energy Efficiency" project (09/2014)
Ref_18	Environment and Climate Assessment (Umwelt- und Klimaprüfung) for the MPEE project
Ref_19	Grant Agreement with the Sumy Children's Hospital
Ref_20	Grant Agreement with the Chernihiv Maternity Hospital
Ref_21	Project presentation on OECD-DAC criterion ‘Relevance’
Ref_22	Project presentation on OECD-DAC criterion ‘Effectiveness’
Ref_23	Project presentation on OECD-DAC criterion ‘Impact’
Ref_24	E-Mail on expert costs and partner contribution (26/06/2020)
Ref_25	E-Mail on grants for pilot projects (26/06/2020)
Ref_26	Project presentation on OECD-DAC criterion ‘Efficiency’

Ref_27	Project presentation on OECD-DAC criterion ‘Sustainability’
Ref_28	Peace and Conflict Assessment (PCA-Matrix) of the MPEE project
Ref_29	Cost data report of MPEE project (06.05.2020)
Ref_30	GIZ Efficiency-Tool applied on MPEE project
Ref_31	DELTA Projektconsult: Modernization Partnership: Energy Efficiency in Hospitals, C4.Report
Ref_32	DMS Monitoring
Ref_33	Study ‘Risk of Health Reform’
Ref_34	Brochure “Energy Efficiency Alphabet for Hospitals”
Ref_35	Brochure “Implementation of the project on energy-efficient thermomodernization of the hospital building"
Ref_36	Manual “Energy Efficiency First Aid Kit”
Ref_37	iC consulenten Ukraine: Analysis of financing opportunities (final report as of 30.05.2018)
Ref_38	e7 Energie Markt Analyse GmbH: Proposal for an investment plan resulting from energy audits conducted in hospitals in Sumy and Chernihiv
Ref_39	NGO EcoClub: Concept of trainings on energy management in hospitals (report as of 12.01.2019)

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Annex: Evaluation matrix

Assessment Dimension	Evaluation questions	Evaluation indicator	Available data sources	Additional data collection	Evaluation strategy (evaluation design, method, procedure)	Expected evidence strength (narrative)
RELEVANCE (max. 100 points)						
The project concept* is in line with the relevant strategic reference frameworks. Max. 30 points	Which strategic reference frameworks exist for the project? (e.g. regional strategies incl. regional implementation strategy for 2030 agenda, international strategies, sectoral, cross-sectoral change strategies, if bilateral project especially partner strategies, internal analysis frameworks e.g. safeguards and gender**)	The projects is in congruence with relevance strategic frameworks such as the Government of Germany Climate Action Plan 2050, Ukrainian Energy Strategy (2017), EU Energy Efficiency Directive, National Energy Efficiency Action Plan 2020,	UNDP's and BMZ's websites	Collection during interviews with key stakeholders	Research of documents by internet; Semi-structured interviews with key stakeholders	The relevant strategy documents are available and allow contrasting

To what extent is the project concept in line with the relevant strategic reference frameworks?	The projects is in alignment with strategic frameworks such as the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, the Paris Agreement, Government of Germany Climate Action Plan 2050, Ukrainian Energy Strategy (2017), EU Energy Efficiency Directive, National Energy Efficiency Action Plan 2020 .	International Development Agencies Websites; United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, the Paris Agreement, Government of Germany Climate Action Plan 2050, Ukrainian Energy Strategy (2017), EU Energy Efficiency Directive, National Energy Efficiency Action Plan 2020	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	Contrasting the methodological approach of the project against the respective strategy documents allows for a reliable judgment on the fit into relevant strategic framework
To what extent are the interactions (synergies/trade-offs) of the intervention with other sectors reflected in the project concept – also regarding the sustainability dimensions (ecological, economic and social)?	The project design reflects synergies and trade-offs with other sectors including the sustainability dimensions (ecological, economic and social)	Project offer, Monitoring system	Additional data on climate change websites (UNFCCC, World Bank)	Internet research on NDCs; analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The project also takes into account the strategic dimensions of climate change and air pollution

To what extent is the project concept in line with the BMZ sectoral concepts?	The project supports the development agenda outlined in the BMZ Development Policy 2030 strategy paper 2018, the BMZ document on Sustainable Energy for Development (2014).	BMZ Development Policy 2030 strategy paper 2018, the BMZ document on Sustainable Energy for Development (2014)		Analysis of documents	The project concept is expected to be in line with the BMZ Development Policy 2030 strategy paper 2018, the BMZ document on Sustainable Energy for Development (2014) and the BMZ climate policy.
To what extend is the project concept in line with the objectives of the 2030 agenda? To which Sustainable Development Goals (SDG) is the project supposed to contribute?	The project contributes to at least one goal within the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs)	BMZ Website and BMZ Development Policy 2030 strategy paper 2018; Ukrainian National SDG Targets	Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	
To what extent is the project concept complimentary to partner efforts or efforts of other relevant organisatons (subsidiarity and complementarity)?	The project concept is subsidiary and/or complementary to the efforts of other bilateral, regional and global projects and donors.	Project offer, Monitoring system	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	

The project concept* matches the needs of the target group(s). Max. 30 points	To what extent is the chosen project concept geared to the core problems and needs of the target group(s)?	The core problem of the target groups addressed by the project is confirmed by the stakeholders. The core problem of the final target group is directly derivable from current sector analyses.	CIA Factsheet, Worldbank country analysis, project documents	Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	Stakeholders confirm that the project matches their needs. Existing data and studies deliver a clear picture of the core problems of the final target group. The analysis shows to which degree the project concepts corresponds to these core problems.
	How are the different perspectives, needs and concerns of women and men represented in the project concept?	The project is designed to address gender-specific challenges of the target group.	Project Reports , Project Monitoring System, The 'Gender Action Plan (GAP)' adopted at COP23	Project gender assessment	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis shows to which degree the project concepts corresponds to gender-specific core problems.
	To what extent was the project concept designed to reach particularly disadvantaged groups (LNOB principle)? How were identified risks and potentials for human rights included into the project concept?	The project concept takes into account the needs of particularly disadvantaged groups (LNOB principle).	Project offer, Monitoring system, CIA Factsheet, Worldbank country analysis	Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis shows to which degree the project takes into account the needs of particularly disadvantaged groups.

The project concept* is adequately designed to achieve the chosen project objective. Max. 20 points	Assessment of current results model and results hypotheses (theory of change, ToC) of actual project logic: - To what extend is the project objective realistic from todays perspective and the given resources (time, financial, partner capacities)? - To what extend are the activities and outputs adequately designed to achieve the project objective? - To what extend are the underlying results hypotheses of the project plausible? - To what extend is the chosen system boundary (sphere of responsibility) of the project (including partner) clearly defined and plausible? - Are potential influences of other donors/organisations outside of the project's sphere of responsibility adequately considered? - To what extend are the assumptions and risks for the project complete and plausibe?	The results logic obeys to current quality criteria of GIZ.	Project offer, results logic, results matrix, monitoring system, Capacity Works Self Assessment	Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis clearly shows to which degree the project concept was adequately designed to achieve the objective.
	To what extent does the strategic orientation of the project address changes in its framework conditions?	Key stakeholders of each output confirm that interventions were strategically focussed.	Project offer, results logic, results matrix, monitoring system, Capacity Works Self Assessment	Collection of data and opinions of key stakeholders	Analysis of documents, in particular modification offers; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis determines to which degree the project concept took into account strategic developments within the partner system.
	How was the complexity of the framework conditions handled? How was any possible overloading dealt with and strategically focused?	Key stakeholders confirm that project instruments were adequately allocated to achieve the project objective.	Project offer, results logic, results matrix, monitoring system, Capacity Works Self Assessment	Collection of data and opinions of key stakeholders	Analysis of documents, in particular modification offers; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis gives a clear picture on how the project team handled the complexity of the intervention.

The project concept* was adapted to changes in line with requirements and re-adapted where applicable. Max. 20 points	What changes have occurred during project implementation? (e.g. local, national, international, sectoral, including state of the art of sectoral know-how)	Project progress reports and/or modification offers describe national and sectoral changes.	Project offer, results logic, results matrix, monitoring system, Capacity Works Self Assessment	Collection of data and opinions of key stakeholders	Analysis of documents, in particular modification offers; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis describes national and sectoral changes.
	How were the changes dealt with regarding the project concept?	Key stakeholders of each output confirm that modification offers corresponded to strategic changes.	Project offer, results logic, results matrix, monitoring system, Capacity Works Self Assessment	Collection of data and opinions of key stakeholders	Analysis of documents, in particular modification offers; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The analysis determines to which degree the project concept took into account national and sectoral changes.

Assessment Dimension	**Evaluation questions**	**Evaluation indicator**	**Available data sources**	**Additional data collection**	**Evaluation strategy (evaluation design, method, procedure)**	**Expected evidence strength (narrative)**
EFFECTIVENESS (max. 100 points)						

The project achieved the objective (outcome) on time in accordance with the project objective indicators.* max. 40 points	To what extent has the agreed project objective (outcome) been achieved, measured against the objective indicators?	The 3 module objective indicators reflect the degree of achievement of the module objective.	Results matrix, progress reports, results presentations, monitoring system	1) Reports of 10 hospitals on the implementation of energy efficiency measures, advisory reports, audit reports, financial budgets, applications for prospective projects; 2) Energy-use monitoring reports, audit reports regarding energy consumption in 5 selected areas of hospital usage; 3) Outcome reports, audit reports, publications or press releases on the energy efficiency pilot projects in two hospitals	Analysis of monitoring system and cross-checking with documentation; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The indicators and their degree of achievement are objectively verifiable.
	Are additional indicators needed to reflect the project objective adequately?	The indicators defined in the project offer are assessed regarding their SMARTness and sufficiency to measure the achievement of the project objective.	Results matrix, progress reports, results presentations, monitoring system		Assessment if module objective indicators are sufficient to measure that the modernisation of energy use in hospitals in Ukraine is implemented in an exemplary way	The 3 indicators defined in the project offer are expected to be sufficient to measure the achievement of the project objective.

The activities and outputs of the project contributed substantially to the project objective achievement (outcome).* max. 30 points	To what extent have the agreed project outputs been achieved, measured against the output indicators? Are additional indicators needed to reflect the outputs adequately?	The indicators for each of the 4 outputs reflect the degree of achievement of the output.	Results matrix, progress reports, results presentations, monitoring system, Capacity-Works self assessment	A) Sources of verification for output indicators; B) Obtained products, deliverables and results of each output; C) Collection of data and opinions of key stakeholders	Analysis of monitoring system and cross-checking with documentation; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The output indicators and their degree of achievement are objectively verifiable.
	How does project contribute via activities, instruments and outputs to the achievement of the project objective (outcome)? (contribution-analysis approach)	A contribution story describes how the instruments, activities and outputs have contributed to achieve the project objective.	Project offer, results logic, results matrix, progress reports, monitoring system	Collection of data and opinions of key stakeholders	Analysis of project documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An exhaustive contribution story will be available
	Implementation strategy: Which factors in the implementation contribute successfully to or hinder the achievement of the project objective? (e.g. external factors, managerial setup of project and company, cooperation management)	The factors of the implementation strategy that contributed successfully to or hindered the achievement of the project objective are identified.	Results matrix, progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	A description of the factors of the implementation strategy that contributed successfully to or hindered the achievement of the project objective is available.
	What other/alternative factors contributed to the fact that the objective was achieved or not achieved?	Other factors that contributed successfully to or hindered the achievement of the project objective are identified.	Progress reports	Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders in the partner municipalities	A description of other factors that contributed successfully to or hindered the achievement of the project objective is available.

	What would have happened without the project?	An alternative scenario describes what would have happened if the project would not have been set up.		Collection of opinions of key stakeholders	Semi-structured interviews with key stakeholders; Writing of an alternative scenario	An alternative scenario, describing what would have happened if the project would not have been set up, is available.
	To what extent have risks (see also Safeguards & Gender) and assumptions of the theory of change been addressed in the implementation and steering of the project?	An analysis describes the degree of addressing risks and assumptions of the ToC during project implementation and steering.	Project offer, results matrix, progress reports, results presentations, monitoring system, Capacity-Works self assessment	Internet research, Safeguards and gender assessments of the project, Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An analysis to what extent risks and assumptions of the theory of change have been addressed in the implementation and steering of the project is available
No project-related negative results have occurred – and if any negative results occurred the project responded adequately. The occurrence of additional (not formally agreed) positive results has been monitored and additional opportunities for further positive results have been seized. max. 30 points	Which negative or positive unintended results did the project produce at output and outcome level and why?	Negative and positive unintended results of the project at output and outcome level as well as the reasons are identified.		Collection of data and opinions of key stakeholders	Semi-structured interviews with key stakeholders	A description of negative and positive unintended results of the project at output and outcome level as well as the reasons is available.
	How were risks regarding unintended negative results at the output and outcome level assessed in the monitoring system?	The project monitoring system is assessed regarding the degree of addressing unintended risks and negative results at output and outcome level.	Monitoring system	Collection of data and opinions of key stakeholders	Analysis of monitoring system; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of the project monitoring system regarding the degree of addressing unintended risks and negative results at output and outcome level is available.

	What measures have been taken by the project to counteract the risks and (if applicable) occured negative results? To what extent were these measures adequate?	Project measures to counteract the risks and (if applicable) occured negative results at output and outcome level are identified.	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of project measures to counteract the risks and (if applicable) occured negative results at output and outcome level is available.
	To what extent were potential unintended positive results at outcome level monitored and exploited?	Project measures to exploit potential positive results are identified.	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of project measures to exploit potential positive results is available.

Assessment Dimension	**Evaluation questions**	**Evaluation indicator**	**Available data sources**	**Additional data collection**	**Evaluation strategy (evaluation design, method, procedure)**	**Expected evidence strength (narrative)**
IMPACT (max. 100 points)						
The intended overarching development results have occurred or are foreseen.* Max. 40 points	To which overarching development results is the project supposed to contribute? Which of these intended results at the level of overarching results can be observed or are plausible to be achieved?	The project contributes to 1 new or adapted legal requirement to improve energy efficiency entering into force and to primary energy consumption of partner municipalities in selected areas of public service provision decreasing by 17,000 MWh/year. Moreover, it contributes to SDG 3, SDG 7, SDG 13,	Project offer, progress reports, results presentations, monitoring system	Internet research, Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	The overarching development results, to which the project is supposed to contribute, are identified.

		SDG 17. Results according to the DAC Markers RMNCH-1, UR-1 and KLM-1 are achieved.				
	Target group and 'Leave No One Behind' (LNOB): Is there evidence of results achieved at target group level/specific groups of population? To what extent have targeted marginalised groups (such as women, children, young people, indigenous peoples, refugees, IDPs and migrants, and the poorest of the poor) been reached?	The project results at target group level are identified.	Project offer, progress reports, results presentations, monitoring system	Internet research, Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Quantification of results	The project results at target group level are identified and (when possible) quantified.
The outcome of the project contributed to the occured or forseen overarching development results.* Max. 30 points	To what extent is it plausible that the results of the project on outcome level (project objective) contributed or will contribute to the overarching results? (contribution-analysis approach)	A contribution-analysis based assessment describes to what extent the results of the project on outcome level contributed or will contribute to the overarching results.	Project offer, progress reports, results presentations, monitoring system	Internet research, Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Quantification of results	The contribution of the project results at outcome level to overarching development results is demonstrated.
	What are the alternative explanations/factors for the results observed? (e.g. the activities of other stakeholders, other policies)	Alternative explanations/ factors for the overarching results (e.g. the activities of other stakeholders, other policies) are identified.		Internet research, in particular of donor websites (Worldbank, EU, etc.), Collection of data and opinions of key stakeholders	Analysis of documents and websites; Semi-structured interviews with key stakeholders; Quantification of results	An assessment of the influence of alternative explanations/ factors on the overarching results is available.
	What would have happened without the project?	An alternative scenario describes what would have happened at impact level if the project would not have been set up.		Collection of opinions of key stakeholders	Semi-structured interviews with key stakeholders; Writing of an alternative scenario	An alternative scenario, describing what would have happened at impact level if the project would not have been

					set up, is available.
	To what extent is the impact of the project positively or negatively influenced by framework conditions, other policy areas, strategies or interests (German ministries, bilateral and multilateral development partners)?	Positive or negative influences by framework conditions (e.g. policies, strategies or interests of German ministries, bilateral and multilateral development partners, etc.) are identified.	Internet research, in particular of donor websites (BMZ, Worldbank, EU, etc.), Collection of data and opinions of key stakeholders	Analysis of documents and websites; Semi-structured interviews with key stakeholders; Quantification of results	An assessment of positive or negative influences by framework condition is available.
	To what extent has the project made an active and systematic contribution to widespread impact? If not, could there have been potential? Why was the potential not exploited?	The project's approach to widespread impact is assessed. — Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of data and opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of the project's approach to widespread impact is available.
No project-related negative results at impact level have occured – and if any negative results occured the project responded adequately. The occurrence of additional (not formally agreed) positive results at impact level has been monitored and additional opportunities for further positive results have been seized. Max. 30 points	Which positive or negative unintended results at impact level can be observed? Are there negative trade-offs between the ecological, economic and social dimensions (according to the three dimensions of sustainability in the Agenda 2030)?	Negative and positive unintended results of the project at impact level as well as the reasons are identified.	Collection of data and opinions of key stakeholders	Semi-structured interviews with key stakeholders	A description of negative and positive unintended results of the project at impact level as well as the reasons is available.

	To what extent were risks of unintended results at the impact level assessed in the monitoring system?	The project monitoring system is assessed regarding the degree of addressing unintended risks and negative results at impact level.	Monitoring system	Collection of data and opinions of key stakeholders	Analysis of monitoring system; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of the project monitoring system regarding the degree of addressing unintended risks and negative results at impact level is available.
	What measures have been taken by the project to avoid and counteract the risks/negative results/trade-offs**?	Project measures to counteract the risks and (if applicable) occured negative results at impact level are identified.	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of project measures to counteract the risks and (if applicable) occured negative results at impact level is available.
	To what extent were potential unintended positive results and potential synergies between the ecological, economic and social dimensions monitored and exploited?	Project measures to exploit potential unintended positive results and potential synergies between the ecological, economic and social dimensions are identified.	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	An assessment of project measures to exploit potential unintended positive results and potential synergies between the ecological, economic and social dimensions is available.

Assessment Dimension	**Evaluation questions**	**Evaluation indicators (pilot phase, only available in german so far)**	**Evaluation indicator achievement**	**Available data sources**	**Additional data collection**	**Evaluation strategy (evaluation design, method, procedure)**	**Expected evidence strength (narrative)**

EFFICIENCY (max. 100 points)			0%, 25%, 50%, 75% 100%			
The project's use of resources is appropriate with regard to the outputs achieved. [Production efficiency: Resources/Outputs] Max. 70 points	To what extent are there deviations between the identified costs and the projected costs? What are the reasons for the identified deviation(s)?	The project manages its resources according to the planned cost plan (cost lines). Only with comprehensible justification deviations from the cost plan were carried out.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	strong

To what extent could the outputs could have been maximised with the same amount of resources and under the same framework conditions and with the same or better quality (maximum principle)? (methodological minimum standard: Follow-the-money approach)	The project manages its resources according to the planned costs for the agreed outputs. Only with comprehensible justification deviations from the cost plan were carried out.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	moderate
	The overarching costs of the project stand in a reasonable relation to the costs of the outputs.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	strong

			with opinions of key stakeholders; Analysis of efficiency tool		
To what extent could outputs have been maximised by reallocating resources between the outputs? (methodological minimum standard: Follow-the-money approach)	The project manages its resources to achieve other outputs better or faster if outputs were achieved or if they can not be reached.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	moderate
Were the output/resource ratio and alternatives carefully considered during the design and implementation process – and if so, how? (methodological minimum standard: Follow-the-money approach)	The partner constellation proposed in the project proposal and the associated levels of intervention could be well realized in terms of estimated costs in relation to the projected outputs of the project.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	strong

			structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool		
The different thematic topics proposed in the project proposal were well implemented in terms of estimated costs in relation to the projected outputs of the project.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	strong	

		The regional scope of the project described in the project proposal could be fully realized in terms of estimated costs in relation to the projected outputs of the project.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	strong

The project's use of resources is appropriate with regard to achieving the projects objective (outcome). [Allocation efficiency: Resources/Outcome] Max. 30 points	To what extent could the outcome have been maximised with the same amount of resources and the same or better quality (maximum principle)?	Stakeholders confirm that the project has achieved its maximum outcome according to the indicators and within the allocated budget.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	good

Were the outcome-resources ratio and alternatives carefully considered during the conception and implementation process – and if so, how?	The project manages its resources between the outputs so that the project achieved maximum results at outcome level.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	moderate
	The partner constellation proposed in the project proposal and the associated levels of intervention could be well realized in terms of estimated costs in relation to the projected outcome of the project.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	good

		with opinions of key stakeholders; Analysis of efficiency tool			
The different thematic topics proposed in the project proposal were well implemented in terms of estimated costs in relation to the projected outcome of the project.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	good	

		The regional scope of the project described in the project proposal could be fully realized in terms of estimated costs in relation to the projected outcome of the project.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	good
	To what extent were more results achieved through synergies and/or leverage of more resources, with the help of other bilateral and multilateral donors and organisations (e.g. Kofi)? If so, was the relationship between costs and results appropriate?	The project has taken the appropriate steps to fully create synergies with interventions of other donors.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	strong

			with opinions of key stakeholders; Analysis of efficiency tool		
Partner contributions are appropriate in relation to the costs of the project outputs.	Project proposal, Kostenträger-Obligo-Bericht, progress reports, opinion of stakeholders, efficiency tool	Analysis of documents, in particular Kostenträger-Obligo-Bericht, project proposal, progress reports; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders; Analysis of efficiency tool	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders	moderate	

Assessment Dimension	Evaluation questions	Evaluation indicator	Available data sources	Additional data collection	Evaluation strategy (evaluation design, method, procedure)	Expected evidence strength (narrative)
SUSTAINABLILITY						
Prerequisite for ensuring the long-term success of the project: Results are anchored in (partner) structures. Max. 50 points	What has the project done to ensure that the results can be sustained in the medium to long term by the partners themselves? What is the project's exit strategy?	Extent to which the project strategically approached anchoring of product and method (Structures, processes, governance arrangements) of working with the partners in a participatory approach. An exit strategy is elaborated	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders in the partner municipalities	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders in the partner municipalities	An exist strategy is available.

In which way are advisory contents, approaches, methods or concepts of the project anchored/institutionalised or continously used or further developed in the (partner) system?	1. Contractors continue offering new advisory and / or financial services for increasing energy efficiency in hospitals. 2. Professional and managerial staff in municipalities and hospitals continue applying knowledge obtained in training courses on energy efficiency. 3. Platforms continue being used by relevant stakeholders for professional dialogue and the exchange of information and experiences. 4. Hospitals maintain pilot projects	Progress reports, results presentations, monitoring system	Collection of opinions of key stakeholders in the partner municipalities	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders in the partner municipalities	Partner institutions continously use or further develop advisory contents, approaches, methods or concepts of the project.
To what extent are resources and capacities at the individual, organisational or societal/political level in the partner institution available (longer-term) to ensure the continuation of the results achieved?	1. Qualitative assessment of organizational resources in partner institutions 2. Qualitative assessment of human resources of partner institutions 3. Qualitative assessment of fi-	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders in the partner municipalities	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders in the partner municipalities	Analyses of resources of institutional partners is available.

		nancial resources of partner institutions				
	How are lessons learnt prepared and documented?	Lessons learnt were presented to the partner organizations.	Progress reports, results presentations, monitoring system, Capacity-Works self assessment	Collection of opinions of key stakeholders in the partner municipalities	Analysis of documents; Semi-structured interviews with key stakeholders; Triangulation with opinions of key stakeholders in the partner municipalities	A documentation of lessons learnt is available.
Forecast of durability: Results of the project are permanent, stable and long-term resilient. Max. 50 points	To what extent are the results (outcome and impact) of the project durable, stable and resilient in the long-term under the given conditions?	The degree of durability, stability and resilience of the project outcome and impact is estimated.		Collection of opinions of key stakeholders in the partner municipalities	Semi-structured interviews with key stakeholders; Triangulation of opinions of key stakeholders in the partner municipalities	An assessment of the degree of durability, stability and resilience of the project outcome and impact is available.
	What risks and potentials are emerging for the durability of the results (outcome and impact) and how likely are these factors to occur? What has the project done to reduce these risks?	The risks and potentials for the durability of the project outcome and impact are identified.		Collection of opinions of key stakeholders in the partner municipalities	Semi-structured interviews with key stakeholders; Triangulation of opinions of key stakeholders in the partner municipalities	An assessment of the risks and potentials for the durability of the project outcome and impact is available.

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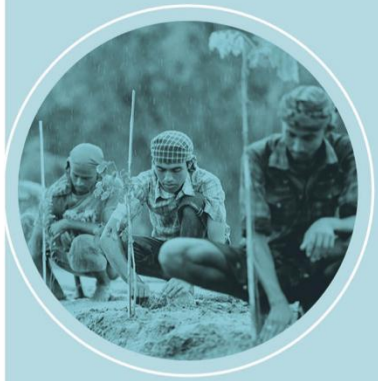

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