



GESP

GLOBAL ENERGY
STORAGE PROGRAM

**MONITORING
AND
REPORTING
TOOLKIT**

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The Climate Investment Fund's (CIF) Global Energy Storage Program (GESP) was established to provide concessional climate finance through CIF's partner multilateral development banks (MDBs) to accelerate the deployment of energy storage solutions for scaling up renewable energy generation, transmission, and distribution. Energy storage has the potential to play a significant role in integrating renewable energy into grids, creating more flexible and reliable grid systems, improving energy access, and promoting the electrification of different economic sectors.¹ As such, energy storage solutions can support the acceleration of decarbonization efforts in developing countries where other non-carbon solutions are unavailable, prohibitively expensive, or not viable.

GESP was established as a separate thematic window under CIF's Clean Technology Fund (CTF), along the lines of the CTF Dedicated Private Sector Program (DPSP). The primary objectives of GESP are fully aligned with those of CIF, specifically CTF and the Scaling Up Renewable Energy Program in Low Income Countries (SREP): to demonstrate and deploy low-carbon technologies, to reduce the carbon footprint of the energy sector, and to increase energy access and create economic opportunities linked to renewable energy investments and operations.

GESP supports the deployment of energy storage systems at scale in recipient countries in three ways:

- Finance for large-scale demonstration projects
- Technical assistance, including for policy and regulatory support
- Support to enhance energy storage for mini-grids and distributed applications

This toolkit outlines the GESP Monitoring and Reporting System (GESP M&R System), consisting of guidance and tools for monitoring and reporting on the progress and performance of GESP projects and programs¹ via a combination of CTF core indicators, GESP results indicators, project-specific indicators, and co-benefit indicators. The toolkit is intended to help MDBs and project teams responsible for GESP operations to establish effective monitoring and reporting protocols that provide consistent, accurate data and information on the expected results and actual achievements of GESP projects.

¹ GESP is expected to support both programs with sub-projects and standalone projects. For the sake of editorial clarity, this toolkit will henceforth only refer to "projects," which should be understood implicitly to encompass different kinds of GESP investments.

CONTENTS

9 | OBJECTIVES

11 | CIF M&R
PRINCIPLES
AND APPROACH

13 | REPORTING
ARRANGEMENTS

17 | THEORY OF
CHANGE AND
MAPPING OF
INDICATORS

21 | CONSIDERATIONS
FOR M&R QUALITY
AT ENTRY

25 | INDICATORS
AND
DEFINITIONS

37 | OTHER AREAS
FOR MONITORING
AND ANALYSIS

39 | REPORTING
DEFINITIONS
AND GUIDELINES

43 | NAVIGATING THE
CIF COLLABORATION
HUB (CCH)

48 | ANNEXES



ONE | OBJECTIVES

OBJECTIVES

GESP encompasses several tiers of objectives linked to energy storage solutions and their expected outcomes, which together serve as the foci for the GESP M&R System.

ENERGY STORAGE OBJECTIVE

At its foundation, the GESP M&R System is designed to calibrate expected results, measure annual implementation progress, and ultimately determine the extent to which the GESP program achieves its main objective of accelerating the deployment of energy storage systems in support of renewable energy.

CTF OBJECTIVES

GESP projects are also expected to contribute toward CTF objectives, since GESP falls under the CTF programming window. The M&R system further assesses progress toward the following expected CTF program outcomes:

- i. Avoided greenhouse gas (GHG) emissions
- ii. Increased finance for low-carbon development mobilized
- iii. Increased supply of renewable energy

COUNTRY-LEVEL OBJECTIVES

One objective of GESP is to transform national economies into low-carbon economies through projects that build infrastructure, develop capacity, and provide financing. These projects are expected to yield significant development co-benefits, such as improved opportunities for women, improved health, and enhanced energy access. Investments in renewable energy and energy storage systems (ESS) aim to increase countries' energy capacity in general, while diversifying their national energy mix in ways that reduce the overall cost of energy, increase energy security, and drive deeper decarbonization through increased

demand for additional renewable energy investments. While the GESP M&R System is not designed to assess the full range of country-level objectives, it is nonetheless expected to generate evidence of GESP contributions toward these objectives.

DEVELOPMENT CO-BENEFITS AND OTHER OBJECTIVES

The GESP M&R System further seeks to generate evidence on interlinked outcomes in energy systems and other development co-benefits from GESP investments, such as those related to gender, employment, and health. It aims to help inform ongoing analyses of signals that transformational change toward a resilient, climate neutral world is (or is not) occurring across various dimensions, and whether the transitions underway are just.² Where GESP investments make specific contributions toward Sustainable Development Goal (SDG) outcomes, such as for SDG 7, the system also seeks to capture them.³

For instance, it is anticipated that activities under GESP could result in stronger consideration of GHG emissions implications during national planning and policy decision-making in client countries, particularly in the energy sector. Likewise, the combined effects of an increase in renewable energy and energy storage systems could lead to an increase in overall energy access. As a third example, some GESP investments might also result in positive net employment effects or contribute toward poverty reduction.

The GESP M&R System's flexibility across reporting levels allows data producers and users (i.e., implementers, clients, project teams, and MDBs) to incorporate these diverse areas into GESP monitoring and reporting accordingly. A specific CTF-GESP Theory of Change is shown in Figure 1.

² This refers to ongoing CIF-led initiatives related to transformational change and just transitions. While these two areas fall beyond the scope of specific reporting requirements in the GESP M&R System, it is recognized that evidence generated within the GESP M&R System is expected to feed into these topical areas, and vice versa.

³ SDG 7 calls for "affordable, reliable, sustainable, and modern energy for all" by 2030.



TWO |

CIF M&R PRINCIPLES AND APPROACH

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CIF M&R PRINCIPLES

The GESP M&R approach builds on previous experience from CIF's four programmatic M&R systems, particularly CTF, with a view to further strengthen data access, quality, and relevance, and to facilitate the analysis of social and economic co-benefits. From a technical vantage, the system is positioned to report standalone GESP results, as well as to feed into the CTF M&R System and respective country-level investment plans.

Fundamentally, the GESP M&R System ensures that the program stays committed and accountable to its core objectives, informs decision-making, and demonstrates progress toward national, regional, and international goals. It also enables the operations pursued under GESP to self-assess, course-correct, and maximize impacts related to the most urgent energy storage issues. Like other CIF M&R systems, the GESP M&R System is based on the principles of learning and knowledge generation, mixed-methods, flexibility, reliance on MDBs' own monitoring and supervision protocols at project level, iteration over time, and joint-MDB partnership toward a harmonized approach.

GESP M&R INNOVATIONS

Two aspects of GESP set the system apart from previous CIF M&R systems.

First, the GESP M&R System features a real-time monitoring approach to complement the annual results reporting cycle. As the delivery of climate financing evolves with more urgency than ever before, so too does the impetus to capture, analyze, and learn in real time from investments with significant potential

for impact at scale. This approach is based on proactive monitoring of key issues in select GESP projects and a tighter program-level feedback loop for GESP stakeholders to learn directly from shared experiences while GESP is under implementation throughout the year. Real-time monitoring seeks to enhance the usefulness of annual monitoring and reporting data with better timeliness and relevance for donors, MDBs, CIF Trust Fund Committee members, and interested third parties.

Second, the GESP M&R System involves in-depth studies, analytics, and learning activities that aim to shed additional light on what is still a new technological leap in many economies. The relative novelty and ongoing technological innovation of energy storage solutions create an opportunity to lead new methods, approaches, and analyses of previously untested investments and project types across markets and policy environments. These activities are geared toward informing implementers of both ongoing and pipeline projects, delving into energy storage policy and regulatory issues, and spotlighting delivery bottlenecks and solutions.

Although these GESP M&R innovations represent additional monitoring, reporting, and learning streams, they are not a core M&R requirement for each GESP project under implementation. The CIF Administrative Unit is directly responsible for overseeing and managing these additional features in coordination with MDBs and other GESP partners.



THREE

REPORTING ARRANGEMENTS

REPORTING ARRANGEMENTS

ACTORS' RESPONSIBILITIES

As in other aspects of CIF, the GESP M&R System relies on the partnership of multiple CIF actors along the investment continuum. The CIF Administrative Unit is responsible for managing the system's design and execution, monitoring CTF and GESP contributions to expected results (as outlined in the programs' theories of change) and submitting achieved results to the CIF Trust Fund Committee for their review. Project-level GESP monitoring and reporting data are collected, aggregated, and submitted by the MDBs for each GESP project under implementation. Depending on the project type, i.e., public or private sector, GESP M&R data are likely to be collected at the project level by project Task Managers in coordination with a national executing agency or a private sector implementer. Finally, a range of data producers are most likely to generate and collect relevant data at the field level, such as utility authorities or project contractors. When it is reasonable to do so, MDBs and the CIF Administrative Unit should also endeavor to share annual GESP results with the corresponding CTF pilot country focal points represented in GESP.

ANNUAL REPORTING PROTOCOL

The GESP M&R System is based on an annual reporting cycle.

Initially, a GESP-funded project's approval by the respective MDB Board serves as the trigger for the project to begin annual results reporting. The relevant MDB should supply the CIF Administrative Unit with the project's full and detailed log frame, including but not limited to the indicators that were defined as part

of the proposal submission. During the reporting year when MDB Board approval first occurs, the project should report all expected results (i.e., targets) per indicator. Over time, actual results—annual and cumulative—should be reported until the project has reached completion, at which point the project completion report or other relevant materials should be submitted to the CIF Administrative Unit.⁴

Annually, MDBs should collect and report data to the CIF Administrative Unit on the relevant indicators for all approved GESP projects (including sub-projects for private sector programs) under implementation. This includes the core CTF indicators, the GESP-specific indicators, MDBs' project-specific indicators, and the co-benefit indicator(s) identified at MDB Board approval of a GESP project. Each GESP project under implementation should also report on other relevant progress and achievements on an annual basis by submitting to the CIF Administrative Unit the most recently available progress reports or implementation status reports issued during the reporting period as part of the MDBs' own project monitoring and supervision protocols.⁵

All submissions should be made online through the CIF Collaboration Hub (CCH):

<http://clientconnectionfifs.worldbank.org/CIF>

MDBs and relevant project managers should be granted access to the CCH before the first results reporting period of their project(s).

⁴ In the case of private sector projects, MDBs may redact full reports or otherwise provide only results-related information, should commercially sensitive information preclude sharing the full report.

⁵ Monitoring and supervision protocols, systems, and nomenclature differ amongst MDBs. In general, MDBs should submit their projects' logframes with targets and actuals, supervision mission reports, progress reports, mid-term reviews, etc. The same considerations that apply to private sector projects in the previous footnote also apply here.



The CIF Administrative Unit is responsible for aggregating all results data and other information reported in the CCH following the close of the results reporting period. GESP M&R data are analyzed and compiled into an annual results report for the entire GESP portfolio, which is submitted to the corresponding CIF Trust Fund Committee(s) for review.

SPECIALIZED MONITORING AND REPORTING

In addition to the annual reporting protocol, some GESP monitoring and reporting activities involve non-cyclical timelines.

On an ongoing basis, the CIF Administrative Unit undertakes additional research and reviews, in coordination with MDBs and their clients, to prepare case studies, evaluations, research publications, and in-depth analyses on issues of relevance to GESP's objectives and portfolio. During the first phase of GESP, the M&R system was incorporated into the GESP Learning Platform, which was designed to share meaningful lessons during the formulation of the GESP pipeline and to support dialogue and knowledge exchanges between MDBs and technical experts, the private sector, and recipient government representatives. Beyond the learning platform, other specialized monitoring and reporting activities feed into CIF's real-time monitoring and learning agenda for the GESP portfolio, which facilitates ongoing, mid-course learning to aid project implementation and inform course-corrections as GESP matures.

CIF remains committed to serving as a learning laboratory for scaled-up climate finance throughout its action areas. To maximize synergies and ensure cost-efficiency, GESP M&R activities should, wher-

ever possible, be used as a basis for, build on, or be integrated with activities of the CIF Evaluation and Learning (E&L) Initiative. These additional studies and analyses should complement the results reporting described above with additional breadth and depth of evidence for learning. GESP M&R and E&L activities are also underpinned by strong knowledge management and communications functions, thereby ensuring that the results tracked and lessons learned inform future decisions and investments in these areas, benefitting both CIF and the wider climate finance architecture.

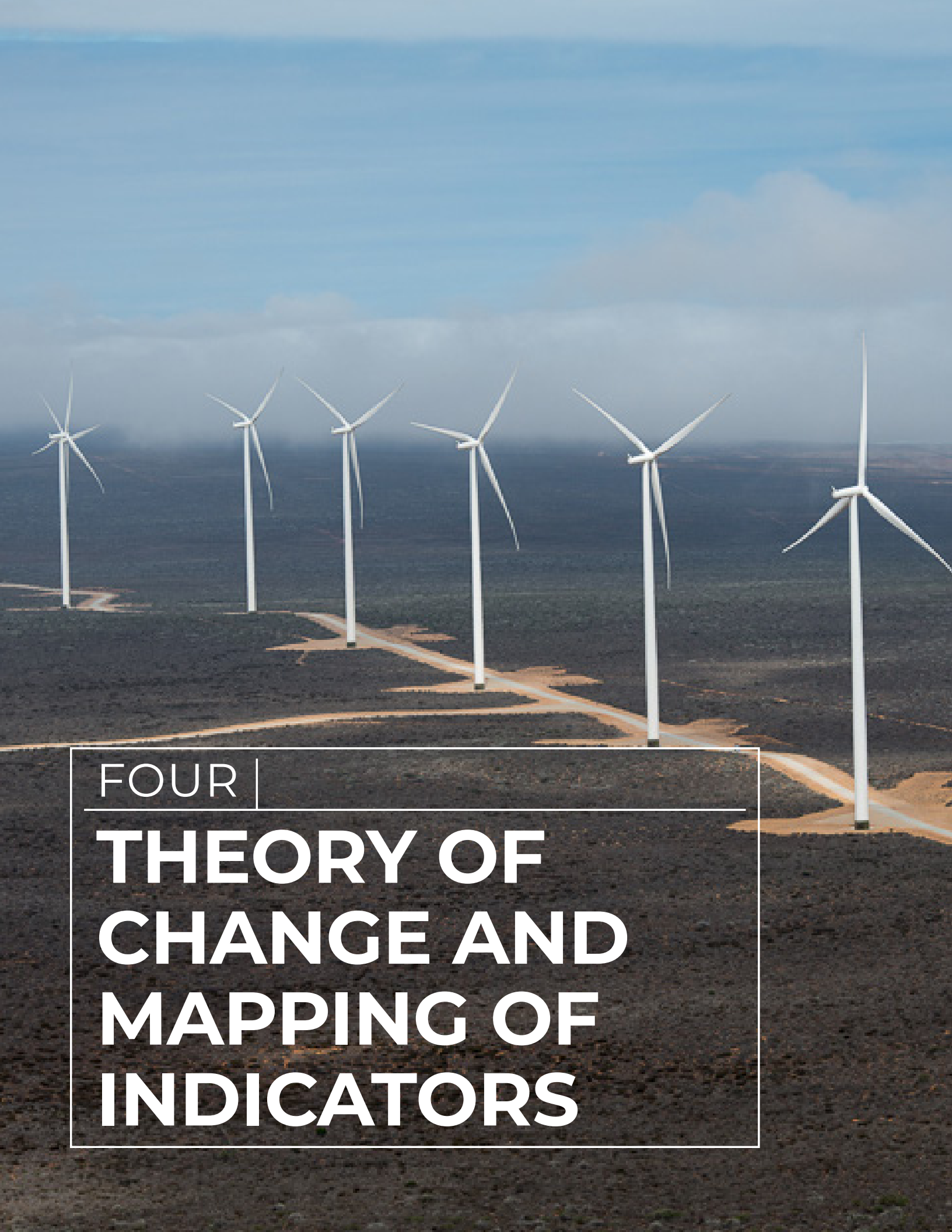
OTHER SOCIAL AND ECONOMIC DEVELOPMENT ANALYSES

Under CIF's learning stream on the Social and Economic Development Impacts of Climate Investments, economic modeling tools and mixed-methods evaluations may be utilized to estimate and analyze the broader social and economic development outcomes of GESP projects.

STOCKTAKING EXERCISE

Approximately two years after this toolkit is released, a GESP M&R stocktaking exercise should be conducted to assess what knowledge has been generated, to ensure that learning and uptake of lessons is progressing as planned and to assess the quality of the M&R system under implementation. Findings from the stocktaking exercise may be used, in consultation with MDBs and GESP partners, to re-design certain aspects of the GESP M&R System described in the toolkit.





FOUR

THEORY OF CHANGE AND MAPPING OF INDICATORS

THEORY OF CHANGE AND MAPPING OF INDICATORS

Figure 1 presents the CTF Theory of Change alongside a list of GESPs expected results to show how they are linked to CTF's expected results.

FIGURE 1. CTF Theory of Change and GESP Indicators

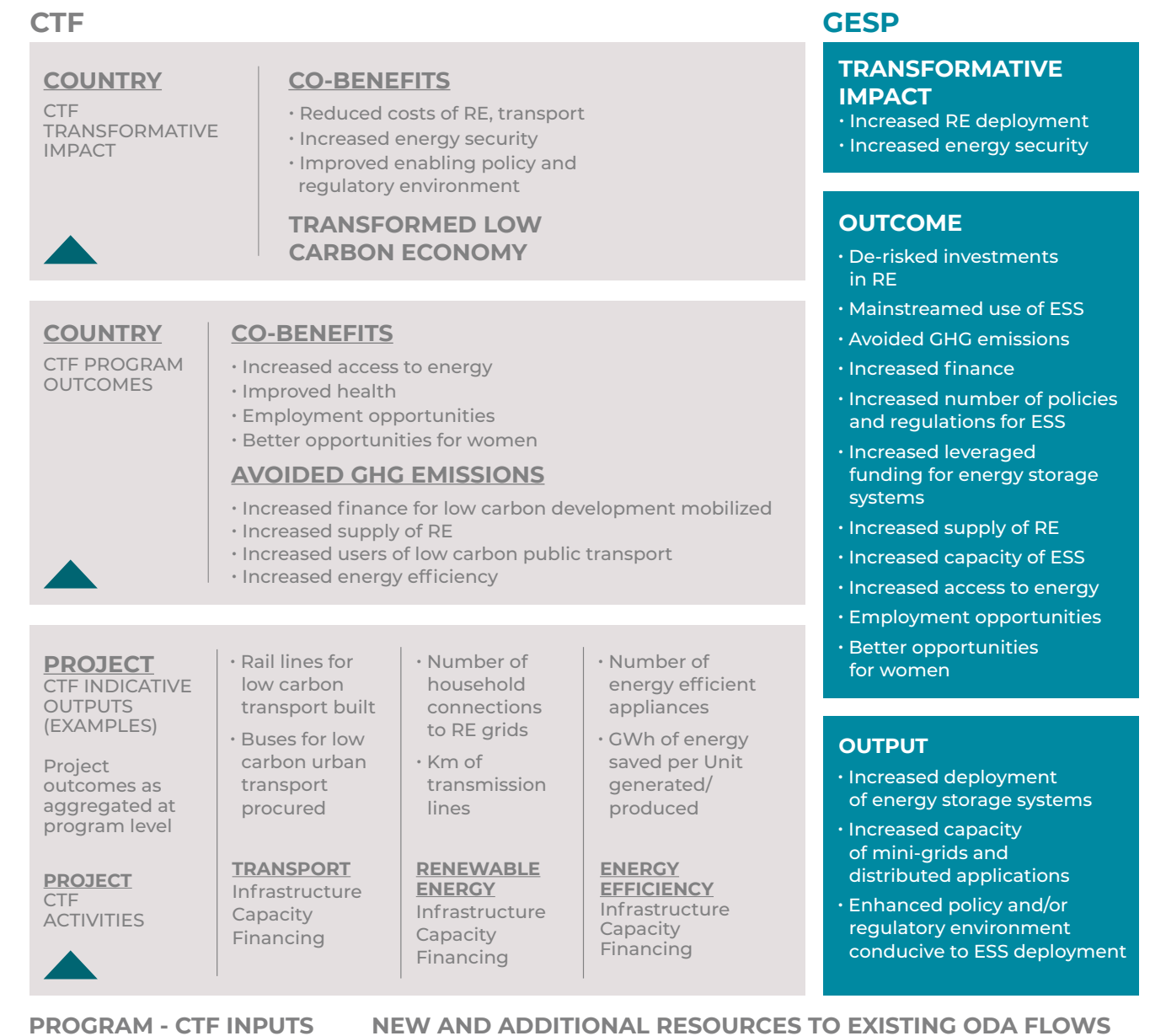
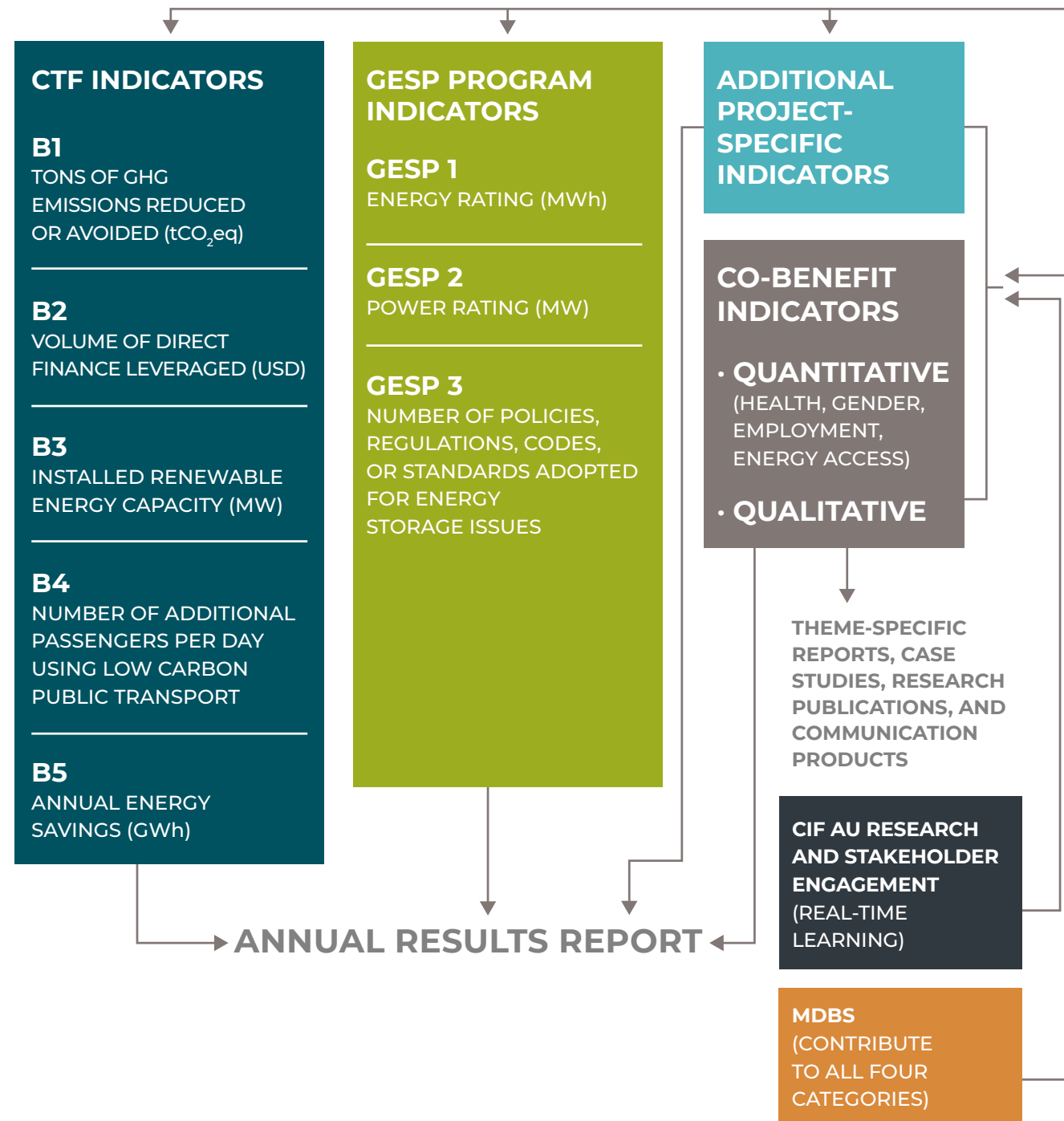


Figure 2 summarizes the four groups of indicators required for GESP reporting, the actors responsible for providing the data inputs related to each indicator group (i.e., MDBs through their annual reporting vs. CIF Administrative Unit through desktop, field research, and/or stakeholder engagement) and the results products and deliverables to be prepared with the collected data (i.e., GESP annual results reports, theme-specific reports, case studies, reviews, assessments, and communications products).

FIGURE 2. GESP M&R System Flow of Information





FIVE

CONSIDERATIONS FOR M&R QUALITY AT ENTRY

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In the CIF business model, MDBs work closely with recipient countries and are responsible for designing and implementing project operations, including the project's core monitoring and evaluation (M&E) function. The GESP M&R System is designed to absorb the differing M&E protocols, indicator selection, results measurement, supervision, and completion procedures that govern MDBs' operations at the project level by collecting, harmonizing, and aggregating MDB-reported results into key GESP portfolio results at the global level. Nonetheless, MDBs are still responsible for aligning their project results frameworks with dimensions of the GESP/CIF objectives, indicators, and theory of change, as well as to anticipate the monitoring and reporting data needs of the GESP M&R System.

The following due diligence considerations at project inception can help facilitate the M&R process throughout a GESP project's lifecycle:

BASELINE DATA

CTF core indicators and GESP-specific indicators listed in the following section measure "the contribution of GESP" toward a specific output/outcome. As a result, the baseline value is implicitly set to 0; however, in some cases non-zero baseline values need to be calculated as intermediary steps, such as with GHG emissions levels prior to an operation's intervention or the number of jobs created for an energy operation prior to GESP investment. MDBs should consider baseline data needs, relevant studies, and analyses that will feed not only into project design, but also future monitoring and reporting. Likewise, many qualitative indicators, such as those related to the regulatory environment and marketplace, will require adequate baseline descriptions for results achieved to be adequately measured during and after project implementation.

"WHOLE OF ENERGY SYSTEM" ANALYSIS

GESP energy storage investments can be deployed in multiple places along the energy generation chain, such as at generation, transmission, and distribution points, as well as for stationary or mobile end use (see Annex 1). The expected interplay between energy storage investments and their broader interlinked systems—especially storage asset dispatch and investments paired with renewable energy sources—suggests the need for a "whole of energy system" analysis at baseline, which can be used as a reference point for the specific outputs and outcomes that are to be monitored over the course of implementation. GESP projects are strongly encouraged to orient their results measurement approach toward wider systemic analyses rather than simply tracking specific deployment outputs. This will enable a more comprehensive understanding of the impact of storage deployment on energy systems, which will ultimately help strengthen the analysis of GESP's impact on questions related to energy generation, access, security, and GHG emissions within specific energy system contexts, markets, countries, and regulatory environments.

DATA COLLECTION PROTOCOL

MDBs are encouraged to devise a full data collection protocol for their projects at the time of approval. This should include anticipated data sources, timelines, and collection frequency, in addition to designated personnel for data collection and aggregation among both project teams and MDBs' CIF coordinators. Projects are encouraged to consider the data needs they face in completing robust completion reports and end-line analyses in line with GESP objectives.

DISAGGREGATION BY GENDER, STORAGE TECHNOLOGY, AND OTHER FACTORS

Whenever possible, all indicators should be disaggregated to improve analyses by sub-population and/or sub-category. For example, a co-benefit indicator on the number of jobs created should be disaggregated between male and female employees. Energy storage deployment should differentiate between technology types (i.e., thermal vs. mechanical vs. electro-mechanical) and at point of intervention on the energy generation chain (i.e., front-of-the-meter vs. back-of-the-meter, etc.). Planning for data disaggregation should occur from inception. Specific guidelines on disaggregation are included per indicator in the following sections and are reinforced in the structural parameters of the CCH's online reporting pages for GESP.

OPPORTUNITIES FOR LEARNING AND KNOWLEDGE DEVELOPMENT

GESP's increased focus on real-time monitoring and technologically innovative investments present significant new opportunities for MDBs and CIF partner organizations to expand know-how on energy storage solutions and related research areas. GESP projects are encouraged to consider learning and knowledge development from the onset and to proactively engage with the CIF Administrative Unit on areas of potential interest. For example, some projects may wish to integrate a monthly monitoring tool into the project's M&R framework, collecting granular data on generation, security, emissions, and/or access issues. The integration of research and learning questions into project design and M&R systems can further strengthen GESP's mandate to generate knowledge and evidence beyond the core indicators in a way that is most beneficial to funded operations throughout their execution.



SIX |

INDICATORS AND DEFINITIONS

INDICATORS AND DEFINITIONS

GESP annual reporting covers four groups of indicators:

1. CTF CORE INDICATORS APPLICABLE TO GESP MANDATORY

Three indicators

- i. Tons of GHG emissions reduced/avoided (tCO₂eq)
- ii. Volume of direct finance leveraged (USD)
- iii. Installed renewable energy capacity (MW) as a result of GESP interventions

2. GESP-SPECIFIC INDICATORS MANDATORY

Three storage-specific indicators

- i. Energy rating (MWh)
- ii. Power rating (MW)
- iii. Number of GESP-supported policies, regulations, codes, or standards adopted for energy storage issues

3. PROJECT-SPECIFIC INDICATORS CHOSEN BY MDBS, SELECTION VARIES

Additional indicators specifically tailored to the corresponding projects, not all of which apply to all types of GESP projects

4. CO-BENEFIT INDICATORS CHOSEN BY MDBS, MUST INCLUDE AT LEAST ONE, SELECTION VARIES

At least one indicator tracking additional quantitative and qualitative development benefits expected to arise from the corresponding projects

GESP PROJECTS ARE REQUIRED TO REPORT ON ALL FOUR CATEGORIES OF INDICATORS.

All CTF core indicators (Category 1) and GESP-specific indicators (Category 2) are mandatory and remain constant across GESP projects. Project-specific indicators (Category 3) are selected by MDBs according to the focus of each GESP project and should be shared with the CIF Administrative Unit during reporting. In addition, at least one co-benefit indicator (Category 4) must be selected at project inception and included in all subsequent annual reporting for the duration of the GESP project.⁶

To follow are detailed definitions and measurement methodologies for the indicators, in addition to overall guidance on reporting processes. Annex 2 provides two example projects to illustrate how the indicators could be applied in a specific operational context.

⁶ Revised CTF Results Framework, Dec 6, 2012, paragraphs 19 and 20, page 3

1. CTF CORE INDICATORS

MDBs should provide data on CTF core indicators for all projects (or sub-projects for private sector programs) under implementation. MDBs should also report annually on implementation progress and achievements and share the most recent project M&R data, which could be in the form of supervision reports, logframes, or other relevant implementation reports.

The GESP M&R System is applied in accordance with the current CTF Results Framework and CTF M&R Toolkit.⁷ In particular, MDBs should provide information on these three core indicators for all GESP projects and sub-projects that have been MDB Board approved:

B1. Tons of GHG emissions reduced or avoided (tCO₂eq)

B2. Volume of direct finance leveraged through GESP funding (USD)

B3. Installed renewable energy capacity (MW) as a result of GESP interventions

CTF CORE INDICATOR 1. TONS OF GHG EMISSIONS REDUCED OR AVOIDED (tCO₂eq)

This indicator measures the **net change in greenhouse gas (GHG) emissions measured in tons of carbon dioxide equivalent (tCO₂eq)**, estimated relative to the assumed business-as-usual emissions trajectory (i.e., baseline scenario), over the lifetime of the investment. This estimate should reflect total direct and indirect GHG emissions reduced as a result of GESP interventions and should be anchored by an appropriate model and/or GHG accounting tool (as approved by each MDB).

Tons of carbon dioxide equivalent (tCO₂eq) refers to metric tons.

The estimated timeframe for each project should be specified. Indirect GHG emissions reduced, such as those resulting from more efficient utilization of renewable energy assets, should be reported separately from direct emissions reduced, such as when a GESP investment includes co-located renewable energy assets.

Calculating the reduction of GHG emissions involves the following steps:

- Determine the baseline counterfactual⁸ (and provide the data source and evidence)
- Estimate the change in activity or fuel consumption resulting from the GESP intervention
- Estimate the net change in GHG emissions through an emissions factor for the activity-level data

For reporting purposes, all assumptions on baseline scenarios, change in activity levels or fuel consumption, and emissions factors need to be clearly explained with methodology and data sources cited. Reporting of GHGs should focus on CO₂ and CH₄. Other GHGs, such as N₂O, HFCs, and SF₆, can be considered when their contribution to the overall level of CO₂ eq. emissions is expected to be significant.

For annual monitoring and reporting, this indicator reports the amount of GHG emissions reduced or avoided during the 12-month reporting period, based on the process outlined above.

DISAGGREGATION: Direct vs. indirect reduction of GHG emissions

⁷ The CTF has five core indicators: B1. Tons of GHG emissions reduced or avoided; B2. Volume of direct finance leveraged through CTF funding; B3. Installed capacity (MW) as a result of CTF interventions; B4. Number of additional passengers using low carbon public transport as a result of CTF intervention; and B5. Annual energy savings as a result of CTF interventions (GWh). However, for GESP, only the first three indicators (B1, B2 and B3) have been retained as core indicators, since they remain most applicable to the range of GESP investments expected. The indicators on transportation and energy savings (B4 and B5) are excluded as core indicators for GESP but may be included as project-specific indicators where applicable (e.g., electric mobility).

⁸ A counterfactual is an estimation of what would occur in the absence of an intervention. In this context, the counterfactual is typically the same as the business-as-usual emissions trajectory.

CTF CORE INDICATOR 2. VOLUME OF DIRECT FINANCE LEVERAGED THROUGH GESP FUNDING (USD)

Direct finance leveraged through GESP funding involves both public and private sources. These sources of finance constitute an integral part of the financial package of each GESP project.

Under this definition, leveraged finance and co-finance are used interchangeably. Finance leveraged through GESP funding may come from the MDBs, bilateral agencies, governments, commercial banks, investors, local and international companies, foundations, and nongovernmental organizations.

For GESP project proposals submitted to the CTF Trust Fund Committee for funding approval, the total estimated volume of leveraged finance should be presented. The volume of leveraged finance should be disaggregated by public and private finance. To the extent feasible, each source and amount of leveraged finance should be specified. All values should be reported in US dollars (USD) and, where applicable, projects should establish a single currency conversion rate for the duration of the project. The currency conversion rate should be communicated to the CIF Administrative Unit at the time of reporting.

For annual monitoring and reporting, this indicator should report on the amount of finance disbursed to or received by the beneficiary or executing agency of the project during the 12-month reporting period. MDBs should be able to verify this amount by official written agreement or records of actual transfer of funds, although such documentation does not need to be submitted directly to the CIF Administrative Unit.

While MDBs may have different preferences and capacity to track leveraged co-financing, each should establish and communicate its preferred methodology for GESP and adhere to it for all GESP projects in its portfolio. For example, some MDBs might measure this achievement uniformly at project approval, whereas others might track annual disbursements per operation.

DISAGGREGATION:
financing source (including public vs. private)

CTF CORE INDICATOR 3. INSTALLED RENEWABLE ENERGY CAPACITY (MW) AS A RESULT OF GESP INTERVENTIONS

This indicator measures the **total installed capacity of renewable-powered electricity or heat generation** as a result of GESP interventions.⁹ It includes both grid-connected and off-grid systems, which should be specified per project at the time of reporting.

Installed capacity, measured in megawatts (MW), refers to the overall production capacity of an energy system, based on a rated (i.e., technology-specific) or actual production capacity. For project proposals submitted to the Trust Fund Committee for funding approval, the reported value should be the total installed capacity of the energy system as a result of the GESP project. Values may be estimated based on available country-level or technology-specific data, as deemed relevant. Data sources should be cited and specified at the time of reporting.

For annual monitoring and reporting, this indicator should report on the actual renewable energy production capacity installed during the 12-month reporting period.

DISAGGREGATION 1: Renewable energy type
(solar, wind, hydro, geothermal, etc.)

DISAGGREGATION 2: Direct vs. indirect installed capacity

⁹ For this CTF indicator, projects should report the installed renewable energy capacity that is directly associated with the energy storage investment(s). For installed renewable energy capacity that GESP projects enable indirectly, estimates should be justified with references to system studies, which should, in turn, specify the amount of renewable energy capacity enabled through the energy storage investments, as compared to a system scenario without storage.

2. GESP-SPECIFIC INDICATORS

GESP-SPECIFIC INDICATOR 1.

ENERGY RATING (MWh)

In addition to the CTF core indicators, GESP projects are required to report on the following storage-specific indicators:

GESP1. Energy rating (MWh)

GESP2. Power rating (MW)

GESP3. Number of GESP-supported policies, regulations, codes, or standards adopted for energy storage issues

This indicator tracks the **energy rating** of a project, measured in MWh.

The energy rating of an energy storage system indicates the maximum amount of energy that can be stored in the battery or storage system, which is the product of the power rating in MW and the discharge duration at this power rating, where power rating is the maximum power at which the energy storage system can operate (See GESP2 for more on power rating). In some settings, the terminology *energy storage capacity* is used interchangeably with *energy rating*.

Values may be estimated based on available country-level or technology-specific data, as deemed relevant. Data sources should be cited and specified at the time of reporting. In general, the following equation applies:

Energy Rating = Power Rating (GESP2) X Duration of Energy Storage Discharge at the Rated Power in Number of Hours

OPTIONAL REPORTING: When feasible, MDBs should report additional data on the total measured vs. expected discharge and duration of energy storage operations at rated power (and below rated power) over a given year. The product of measured duration and rated power equals delivered energy at rated power, which can be compared against the energy rating of the storage system. Note that for storage systems that provide various rated energy values as a function of discharge power, this measurement is conducted at each discharge power. This can also be used to calculate the project-specific energy to power ratio, which can be compared with the ratios of other GESP energy storage projects in a learning context.

For annual monitoring and reporting, this indicator should report on the energy rating of energy storage solutions rendered operational during the 12-month reporting period. Optional annual operating data on actual delivery of energy from storage should be shared over time as available.

DISAGGREGATION 1: Energy ratings should be disaggregated by storage technology type (thermal, mechanical, electrochemical) and location on the energy value chain (generation, transmission, distribution, stationary end use, mobile end use). See Annex 1 for more information.

DISAGGREGATION 2: Energy ratings should also be disaggregated by distributed storage vs. utility-scale applications. Distributed storage refers to systems installed in end-user facilities, such as public services, industries, households, or businesses. Examples include mini-grids, off-grid systems, and electric vehicles.

GESP-SPECIFIC INDICATOR 2.

POWER RATING (MW)

This indicator tracks the **power rating** of a project, measured in MW.

The power rating indicates how much power can flow into or out of the energy storage system continuously, i.e., a measure of the maximum continuous power output capacity. In some settings, the terminology *power capacity* and *rated power* are used interchangeably with *power rating*.

For annual monitoring and reporting, this indicator should report on the power rating of energy storage solutions rendered operational during the 12-month reporting period.

DISAGGREGATION 1: Power ratings should be disaggregated by storage technology type (thermal, mechanical, electrochemical) and by location on the energy value chain (generation, transmission, distribution, stationary end use, mobile end use). See Annex 1 for more information.

DISAGGREGATION 2: Power ratings should also be disaggregated by distributed storage vs. utility-scale applications. Distributed storage refers to systems installed in end-user facilities, such as public services, industries, households, or businesses. Examples include mini-grids, off-grid systems, and electric vehicles.

GESP-SPECIFIC INDICATOR 3.

NUMBER OF GESP-SUPPORTED POLICIES, REGULATIONS, CODES, OR STANDARDS ADOPTED FOR ENERGY STORAGE ISSUES

This indicator tracks the number of GESP-supported **policies, regulations, codes, or standards** related to energy storage that are adopted by client countries. Information reported under this indicator helps illustrate whether an enabling regulatory environment has been supported through GESP interventions. Not all GESP projects will entail regulatory interventions, in which case the expected result should be reported as 0 with clear justification provided on how the project scope is not relevant to regulatory issues in the energy storage sector.

MDBs are encouraged to complement reporting on this indicator with a qualitative assessment of how the policies, regulations, codes, or standards have been implemented and evidence of any direct and/or indirect effects the intervention has had on the regulatory environment.

For annual monitoring and reporting, this indicator reports the number of new regulations, codes, or standards for energy storage adopted during the 12-month reporting period.

DISAGGREGATION: This indicator should be disaggregated by type of policy intervention (policy, regulation, code, standard, etc.).

PROJECT-SPECIFIC INDICATORS

The GESP M&R System also tracks additional indicators specifically selected by MDBs to monitor the goals, outcomes, and outputs of individual GESP projects as part of their logframe, i.e., project results framework.

The MDBs should supply the CIF Administrative Unit with detailed logframes of individual GESP projects at MDB Board approval, at which point the relevant project-specific indicators are identified and entered into the CCH for future monitoring and reporting. The most recently available progress reports or implementation status reports generated by the MDBs should also be submitted during each annual reporting period.

The CIF Administrative Unit aggregates results from common project-specific indicators and highlights notable achievements from individual projects as part of the annual results reporting to the CIF Trust Fund Committee.

Some examples for MDBs to consider incorporating in GESP projects include the following:

- **Number of innovative energy storage and renewable energy sub-projects implemented.** This indicator refers to the number of GESP sub-projects, including renewable energy and energy storage systems, that represent an innovation to the context where they have been implemented. The innovation should also be briefly described.
- **Increase in renewable energy generation enabled by energy storage applications (megawatt-hours per year (MWh/year)).** This indicator refers to the additional discharge of renewable energy as a result of energy storage systems. A clear methodology for assessing this linkage should be specified at baseline based on a “whole of energy systems” analysis.
- **Improved enabling environment for scaling up innovative solutions.** This refers to how GESP interventions have supported the development of favorable conditions for energy storage solutions to continue to grow in the country where the project is being implemented. This qualitative indicator is linked to the establishment of a regulatory environment and to the adoption of energy storage policies (GESP3).
- **Number of knowledge products/technical studies prepared.** This indicator refers to publications, technical studies, and/or communication materials prepared on a subject related to energy storage systems.
- **Enhanced energy reliability, quality, and flexibility.** This benefit could include indicators on reduction in outages, reduction in system/ line losses, enhancement of reliability indices, percent of peak demand shifted during congestion, and other markers of increased energy security and flexibility.
- **Reduction in the average cost of electricity supply.** The indicator should be substantiated with a clear methodology/theory of change that outlines the project’s effects on reducing costs.
- **Just transitions outcomes/outputs.** Indicators related to just transitions might track the number of successful programs implemented and/or the number of labor-force participant transitions. Where possible, and as research in these areas expands both within CIF and more generally, metrics related to job quality and other labor equity issues could also be included.

CO-BENEFIT INDICATORS

In a global policy environment where every last dollar of climate finance matters, governments, policymakers, investors and their constituencies are increasingly interested in how scarce climate finance can achieve multiple co-benefits objectives, e.g., not only contributing toward Paris Agreement goals but also inclusive economic growth, SDGs, just transitions, and more. This approach further reflects the fact that MDBs, as both CIF delivery vehicles and development institutions, are already delivering blended finance operations that aim to achieve these multiple results objectives.

Co-benefits refer to development outcomes achieved as a result of GESP projects that are not directly linked to the GESP’s main objective to accelerate the deployment of energy storage solutions in support of renewable energy. Key examples might include the reduction of poverty in a GESP intervention area, job creation, increased women’s empowerment, improved health and public safety, or economic growth.

The GESP M&R System employs a broad suite of indicators meant to demonstrate complementary development achievements beyond the more limited scope of CTF core, GESP, and project-specific indicators. Overall, co-benefit indicators help demonstrate the wider development benefits of energy storage projects and can be measured through both quantitative and qualitative means.

Projects financed under the GESP are required to identify at least one quantitative co-benefit indicator from the following menu and integrate them into their results-based logframes at the design stage. MDBs are also encouraged to include qualitative assessments of co-benefits in their reporting whenever it is appropriate to do so.

Co-benefit indicators must be reported annually alongside reporting on CTF, GESP, and project-specific indicators. Data are drawn from MDBs at the project level. The CIF Administrative Unit aggregates data from all GESP projects and reports at the portfolio level to the CIF Trust Fund Committee. In addition, this information may be used to develop theme-specific reports, e.g., on gender or health aspects of energy storage projects.

MENU OF CO-BENEFIT INDICATORS

MDBs should select an applicable co-benefit indicator from these categories. The listed indicators are not exhaustive. Therefore, if none are relevant to a particular GESP project, MDBs should propose another co-benefit indicator that they are able to measure, monitor, and report.

GENDER

- Percentage of women energy users reporting an improved change in access to energy services (compared to men)
- Number of women and men with improved access to and primary use of renewable energy sources (percentage of whom are women)
- Percentage of women in the total workforce of a company implementing energy storage systems (disaggregated by technical departments, management, and/or board level)
- Number of women and men trained on energy storage issues (percentage of whom are women)

EMPLOYMENT

- Number of direct jobs created (disaggregated by gender)
- Number of indirect jobs created (disaggregated by gender; Please specify the methodology for calculating indirect jobs.)

ENERGY ACCESS

- Number of people with new or improved access to renewable energy services (directly and indirectly, disaggregated by gender)
- Increase in MWh of electricity supply through energy storage (directly and indirectly, disaggregated by gender)

SOCIAL INCLUSION

- Number of poor or vulnerable persons reached via targeted project deliverables (e.g., professional/vocational trainings or consultations, disaggregated by gender)

HEALTH AND SAFETY

- Improved air quality index (AQI)
- Number of households with improved access to or enhancement of health services (disaggregated by female-headed households, where relevant)

COMPETITIVENESS AND INDUSTRIAL DEVELOPMENT

- Number of small and mid-sized enterprises (SMEs) benefiting from enhanced access to energy services (percentage of which are women-led)
- Annual expenditures (USD) on domestic manufacturing and services via project construction or operations

SDGS

- Other contributions toward project-aligned SDG goals and targets not covered above, e.g., various sub-indicators under SDG 7 (Universal Sustainable Energy Access)





SEVEN

OTHER AREAS FOR MONITORING AND ANALYSIS

OTHER AREAS FOR MONITORING AND ANALYSIS

GESP progress is also monitored and assessed via several other approaches that are better suited to generate evidence on aspects of GESP not easily captured through project-level indicators.

Most of these additional areas for GESP monitoring and analysis are based on research and stakeholder engagement, which the CIF Administrative Unit manages. MDBs can help to facilitate such monitoring and analysis by playing a coordinating role, specifically in cases where their GESP projects are directly implicated.

Examples of **real-time studies** include ad hoc desk and field research, case studies, thematic reports, and stakeholder engagement activities conducted throughout the GESP's implementation period. These studies assess progress qualitatively—or by triangulating assessments with quantitative results data—at the project, sectoral, regional, thematic, or portfolio level.

Certain **qualitative indicators** are also used to report the more descriptive types of results reflected in the CTF Theory of Change and GESP indicators (see Figure 1:). Most of these indicators help assess progress at the transformational impact level of GESP's results chain and may require additional targeted studies, analyses, or evaluations. They include:

- Contribution of GESP to catalyzing deployment of renewable technologies
- Degree to which GESP is contributing to improved energy system flexibility
- Degree to which GESP is contributing to an increase in national energy security and a reduction in generation capacity requirements
- Degree of demonstration and replication effects for investors in energy storage systems, including through the establishment of a regulatory and enabling environment

At the level of complex systems, one additional area of monitoring and analysis involves how GESP projects might be contributing to potential **signals** of transformational change toward a low-carbon, climate-resilient future, as well as how new GESP investments can incorporate **dimensions** of transformational change into their design and implementation.¹⁰

¹⁰ According to the CIF Transformational Change Learning Partnership (Jan 2021), the working definition of transformational change for climate action is: “fundamental change in systems relevant to climate action with large-scale positive impacts that shift and accelerate the trajectory of progress towards climate neutral, inclusive, resilient and sustainable development pathways.” More information on CIF’s transformational change concept, dimensions, and signals can be found at: <https://www.climateinvestmentfunds.org/tclp>

The CIF Administrative Unit utilizes **economic modeling tools** to estimate larger social and economic impacts of the GESP portfolio and to strengthen collective understanding of related development outcomes linked to GESP financing. GESP achievements may also be cataloged through the lens of the **SDGs**, with additional analysis of how operations are contributing to SDG-related objectives and outcomes.

MDB project implementation **narrative reporting** is an important aspect of the GESP Monitoring and Reporting System. MDBs need only submit their own recent supervision reports (redacted where necessary) to the CIF Administrative Unit alongside their annual results data submissions.

This type of narrative data helps strengthen interim monitoring at the portfolio level before longer-term outcomes and impacts can be realized.

These additional areas for monitoring and analysis enable the CIF Administrative Unit and other stakeholders to determine the extent to which GESP outcomes are achieved. With this body of evidence, the CIF Administrative Unit typically prepares one or two case studies per year, alongside reviews, assessments, and communications products, such as blog posts and other digital communications materials.



REPORTING DEFINITIONS AND GUIDELINES

REPORTING DEFINITIONS

Activities **as a result of GESP interventions** are defined as those funded by GESP funds, as well as those funded by the leveraged co-financing reported in CTF Core Indicator 2. Typically, this refers to singular projects or programs structured through blended finance (CIF + MDB + other potential co-finance).

The **expected reporting closure date** is the date when the MDB expects end-line results data points on the indicators from the project upon its physical completion, financial closure, or submission of a project completion report. MDBs may have somewhat different terms and parameters for establishing this date. The date can also vary between public and private sector operations and can be modified if projects are extended or terminated.

The **reporting year** for CIF refers to project performance from January 1–December 31 of the year before results are submitted. In general, GESP results are submitted in the beginning of the following calendar year from the reporting year, although in some cases, the period reported may differ between MDBs, which have different cutoff dates for their internal results reporting. The GESP M&R System respects MDBs' respective reporting protocols while striving for coherent CIF-level reporting to the greatest extent possible.

Stakeholders refer to parties with an interest in a project, including government authorities, the private sector, utilities, civil society organizations, and other groups at local and country level.

BASELINES, TARGETS, AND ACTUAL RESULTS

Reporting **baselines** is not necessary for the first six indicators (three CTF and three GESP-specific) since they are implicitly set at 0. This is because they each measure an increase in activities “as a result of GESP interventions.” Nonetheless, MDBs may need to conduct their own baseline assessments that will feed into these and other aspects of the GESP M&R System, such as intermediary calculations for GHG accounting, qualitative reporting, and certain project-specific and co-benefits indicators (e.g., energy access and employment figures).

Targets refer to the intended results to be achieved by a project by its end-line (The GESP M&R System does not track annual or mid-term targets.) Targets are proposed in project documents at the time of CTF Trust Fund Committee funding approval and are verified and/or modified at the time of MDB Board approval, alongside the reporting of any additional indicators and targets for project-specific and co-benefits indicators. Targets are jointly tracked by MDBs and the CIF Administrative Unit via the CIF Collaboration Hub (CCH)¹¹ and are interchangeably referred to as **expected results**.

At project inception, MDBs should enter project targets into the CCH as follows:

1. The target stated in the GESP proposal document should be entered immediately after the Trust Fund Committee approval date into the target at TFC approval level field of the CCH.
2. The target stated in the MDB project appraisal document should be entered immediately after the MDB Board approval date into the target at MDB approval level field of the CCH.

If the project is a public sector project, the target added at MDB Board approval will be pulled automatically from the information page and added to the CCH results section for results reporting. If the project is a private sector project, the target added at Trust Fund Committee approval will be pulled automatically from the information page and added to the CCH results section for results reporting.

Targets cannot be modified after results have been reported unless a formal restructuring has occurred. In this case, MDBs must notify the CIF Administrative Unit of the change, provide the necessary rationale, and reference the relevant formal documentation validating the rationale, methodology, and new target value. Under each target listed in the CCH, there is a comment section where the MDB can flag that the respective target has been adjusted.

Actual results are submitted by MDBs via the CCH at the beginning of each calendar year covering the preceding reporting year. Data from the project-level monitoring system must be used to report actual results, rather than projections or ex-ante estimates.

All documents containing the evidence base for reported results are auditable. These can be uploaded in the CCH under the Supporting Documents tab. If a document is marked as confidential, only members of the reporting MDB and members of the CIF Administrative Unit are able to view it.

DATA ENTRY AND VALIDATION

For each project, MDBs must fill in the CCH sections covering CTF core and GESP-specific indicators. MDBs should also report data for the relevant project-specific and co-benefit indicators corresponding to their projects, as appears in the CCH. A list of these indicators will be pre-populated for each reporting period after they are identified and entered into the system during the first year that a project reports.

Where a project is co-funded by two MDBs, the MDBs must agree which one will report on the project to the CIF Administrative Unit. There can only be one report per project to avoid the double-counting of project results. If each MDB invests in and implements distinct components of a project, and if each MDB reports only on the components that are directly relevant to their investment, the risk of double-counting should be avoided. However, in such an instance, the relevant components and targets should be clearly delineated, communicated formally to CIF, and remain congruent with the total targets at the project level.

Project leads within MDBs and MDBs’ CIF coordination focal points should review the data before uploading the annual results into the CCH.

The CIF Administrative Unit is responsible for communicating the **annual results reporting deadline** to all MDBs following each reporting year. While this deadline may shift over time, typically results data should be submitted in the first quarter of each calendar year for the results achieved during the previous year, i.e., the reporting year.

OUTREACH AND STAKEHOLDER ENGAGEMENT

MDBs and GESP project teams are encouraged to invite stakeholders in the GESP country to review the annual results of the program before sharing the annual results with the CIF Administrative Unit.

Results can also be disseminated, discussed, and shared through targeted stakeholder engagement activities, such as CIF-sponsored learning forums, in-country renewable energy events, or other platforms. In some cases, GESP countries that also have active CTF investment plans might take advantage of pre-existing CTF focal point units during such activities.

TIMING OF RESULTS ACHIEVED

Given the nature of GESP projects and the fact that all six of the CTF core and GESP-specific indicators are outcome indicators, **significant progress may only occur at or around project completion**. The real-time monitoring and learning components of the GESP M&R System are designed to help fill information gaps in the interim as the portfolio matures.

¹¹ Guidance on navigating the CCH is presented in the next section and via the CCH Results User Guide, which is also available on the CIF website.



NINE |

NAVIGATING THE CIF COLLABORATION HUB (CCH)

NAVIGATING THE CIF COLLABORATION HUB (CCH)

Detailed guidelines on accessing the CCH and its general usage are presented within the CCH Results User Guide, which is available on the CIF website. MDB personnel responsible for results reporting tasks should take the following key steps.

STEP 1: ENTERING GESP PROJECT TARGETS

Timeline: Immediately after MDB approval for public sector projects and immediately after Trust Fund Committee approval for private sector projects

To set the targets of a project in the CCH, MDBs should go to the Project Portfolio section, click on Input/Update Proposal, and then Target Results.

For public sector projects, targets should be added at the MDB Board approval stage. For private sector projects, targets should be added at the TFC approval stage.

Targets cannot be modified after results have been reported unless a formal restructuring has occurred. If this is the case, MDBs must notify the CIF Administrative Unit of the change, provide the necessary rationale, and reference the relevant documentation validating the rationale, methodology, and new target value. The numbers will be changed by the CCH administrator.

Indicator	Breakdown	Units
Annual energy savings	NA	GWh
Annual Target	Lifetime Target	
5,000	50,000	

Co-Benefit Name	Target Value	Unit
Jobs Created	1,000	Number of people

CCH RESULTS SECTION: TARGET

- After clicking on the Targets link under the Results section, the user will be navigated to the Target Results screen displayed above and below.
- Users can add indicators and target values on this screen.
- Users can enter multiple indicators by clicking the + sign on the right side of each indicator line.
- Users can enter co-benefit indicators and targets in the lower section of the page.

Targets at MDB Board Approval

Indicator	Breakdown	Units
Annual energy savings	NA	GWh
Annual Target	Lifetime Target	
0	0	
Indicator	Breakdown	Units
Installed capacity as a	Geothermal	MW
Lifetime Target		
0		
Indicator	Breakdown	Units
Installed capacity as a	Hydro	MW
Lifetime Target		
0		

CCH RESULTS SECTION: TARGET (CONTINUED)

- Co-financing data will be transferred from the Financials tab, elsewhere on the CCH.
- Users will have the option to check the box to copy indicators and corresponding target values from the TFC level to MDB Board approval level.

STEP 2: ENTERING GESP PROJECT ACTUAL RESULTS

Timeline: In general, results must be submitted on an annual basis during the first quarter of the calendar year, i.e., January–March. The submission should cover the annual results achieved during the period from January 1–December 31 of the previous calendar year, regardless of differing fiscal years among MDBs. Exact reporting deadlines may shift somewhat over time.

Previous years' results cannot be modified after results have been reported unless a formal restructuring has occurred. If this is the case, MDBs must notify the CIF Administrative Unit of the change, provide the necessary rationale, and reference the relevant formal documentation validating the rationale, as well as the new result value. The numbers will be changed by the CCH administrator.

Achieved Results

Reporting Year	Indicator	Breakdown
2021	Annual energy savings as	NA
Breakdown		Units
NA		GWh
Lifetime Target		Annual Results
		Cumulative Results
Reporting Year	Indicator	Breakdown
2021	Installed capacity as a res	Geothermal
Breakdown		Units
Geothermal		MW
Lifetime Target		Annual Results
		Cumulative Results

CCH RESULTS SECTION: ACTUALS

- The Actuals Results screen for GESP will be available for data entry in the first part of each calendar year. At other times, the screen will be on view-only mode.
- The indicators and all other fields will be transferred from the Target Results screen. Users will only need to enter data into either the Annual Results or Cumulative Results field for the reporting year as shown below. Users will not be able to enter new indicators on this screen.

Project Identification

- > Overview
- > Multilateral Development Bank
- > Other Information
- > Contact Information
- Financing Information**
 - > Financing Breakdown
 - > PPG Information
 - > MPIS Information
 - > Co-Financing
- Milestone Information**
 - > Pre-Approval Milestones
 - > Project Approval Date
 - > Post-Approval Milestones
 - > Semi-Annual Comments
- Results**
 - ▶ **Targets**
 - > Achieved Results
 - > Uploaded Documents
- Supplemental Information and Related Documents**
 - > Supplemental Information
 - > Related Documents

Co-Benefit Annual

RY	Co-Benefit	Actual results
2021	Jobs Created	
Target Results		Units
1,000	Number of people	

Previous Year Results [Expand All](#)

Upload Documents

Add Supporting Documents

No file chosen

CCH CO-BENEFITS/DOCUMENTS SECTION

- The Co-Benefits/Documents link will navigate to the screen above.
- The co-benefit fields will be available for data entry from approximately January to March of each year. At other times, the screen will be on view-only mode.
- Co-benefit data will be transferred automatically from the Target Results tab. Users will only need to enter the actual results values for the corresponding reporting year.
- Users will not be able to enter new co-benefit indicators on this screen.



ANNEX 1: TYPES OF ENERGY STORAGE TECHNOLOGIES AND LOCATIONS

LOCATION	TYPE	TECHNOLOGIES
Electricity generation, transmission, and distribution	Thermal	Sensible heat (water, sand, molten salts)
		Phase change storage
		Thermo-chemical storage
	Mechanical	Compressed air energy storage, liquid air energy storage, flywheels
		Pumped-storage hydropower and other gravity-based storage systems
		Hydropower (improvements to existing hydropower facilities)
	Electrochemical/ Chemical	Batteries (grid or mini-grid scale)
		Hydrogen or e-fuel systems
		Biofuel storage facilities
Stationary electricity end use	Thermal	Hot and cold storage
	Mechanical	Pumped water for final use and other gravity-based storage technologies
	Electrochemical/ Chemical	Grid-connected behind-the-meter stationary batteries/ hydrogen systems
		Off-grid stationary batteries/hydrogen systems
Mobile end use	Electrochemical/ Chemical	Batteries/hydrogen systems for electric vehicles

Source: GESP Implementation Plan, October 2020

ANNEX 2: PROJECT EXAMPLES USING THE GESP M&R SYSTEM

EXAMPLE PROJECT A

Overview:

The aim of this project is to support a combination of energy storage technologies (chemical/electrochemical, mechanical, and thermal) and renewable energy development in South Africa. Energy storage will support the penetration of renewable energy into the grid to support a flexible and reliable grid system.

Development Impact/Objectives:

Sub-projects under this program are expected to enable and accelerate utility-scale battery storage solutions in South Africa. Overcoming barriers to financing utility-scale renewable energy and storage projects will set South Africa onto a cleaner growth path with a more diversified and sustainable energy mix.

The program is expected to generate the following additional benefits:

- Improved financial sustainability of state-owned utilities
- Economic recovery/growth and decarbonization
- Local employment
- Spillover effects (i.e., enhancing energy supply traded through the Southern African Power Pool)

Results Framework:

INDICATOR	TARGET	TARGET DATE	NOTES
CTF Core 1	GHG emissions reduced or avoided (MT CO2 eq.)	768,343	Annual, starting in 2023
		15,366,854 (direct)	2043 (over 20 years)
CTF Core 2	Volume of finance leveraged (USD)	540,000,000	2023
CTF Core 3	Installed capacity of renewable energy as a result of GESP interventions (MW)	300MW	2023
			Estimated installed capacity from intermittent renewable energy systems (i.e., solar and wind energy) as a result of GESP interventions

INDICATOR		TARGET	TARGET DATE	NOTES
GESP 1	Energy rating (MWh)	900MWh	2023	Energy rating measures the total amount of energy that can be stored or delivered at rated power by an energy storage system over time. In this case, the energy system aims to deliver an estimated 900 MWh of electricity at rated power. (Assume 1000 MWh of charge energy is absorbed by storage, and it stores 950 MWh, with 50 MWh associated with charge efficiency < 1 related losses. During discharge, there may be an additional 50 MWh related to discharge efficiency being < 1, and the storage delivers 900 MWh of electricity.)
GESP 2	Power rating (MW)	225MW	2023	<p>The power rating indicates the maximum continuous power absorbed or discharged by the storage system. It measures the rate of flow of electricity in and out of the storage system. For this project, the system aims to deliver or receive a maximum of 225 MW electricity at any point in time.</p> <p>The energy to power ratio can be calculated using values from GESP 1 and GESP 2 based on the equation: energy rating / power rating = duration (e.g., in this case, duration is estimated at 4 hours). Energy to power ratios compare the durations of different energy storage systems and allow learning-oriented comparisons among GESP projects by triangulating these ratios with the other operational experiences of energy storage systems across country, market, and regulatory contexts as the program evolves.</p>
GESP 3	Policies, regulations, codes, or standards adopted for energy storage issues	0	2023	This project does not have specific examples for "Policies, regulations, codes, or standards adopted for energy storage issues" (GESP 3).

INDICATOR		TARGET	TARGET DATE	NOTES
Project-Specific Indicator 1	Improved enabling environment for scaling up innovative solutions	Assessed qualitatively	2023	Overall, project activities aim to strengthen South Africa's regulatory framework and procurement practices needed to (1) scale up the adoption of energy storage systems at the country level, and (2) strengthen financial arrangements for storage technologies to attract more private sector participation in the market. (This is just one example of a project-specific indicator.)
[...]				Additional project-specific indicators can be included.
Co-Benefit Indicator 1 (Employment)	Number of direct jobs created (male vs. female)	250 (150, 100)	2023	Direct jobs created refers to the employment opportunities directly related to energy storage construction and/or operations and should be disaggregated by gender. (This is just one example of a co-benefits indicator that can be selected.)
[...]				Additional co-benefit indicators can be included if/when relevant.

EXAMPLE PROJECT B

Overview:

The program aims to scale up a wide range of energy storage technologies, including battery, thermal energy, and hydropower, by providing financing to address barriers of private sector project development in Cambodia, Philippines, Thailand, and Vietnam. The program works with local developers to develop storage projects that can help efficiently integrate higher levels of variable renewable energy into national grids.

Development Impact/Objectives:

The program and sub-projects are expected to contribute to transformational change in energy grids by demonstrating the potential for energy storage to support higher levels of variable renewable energy in selected South-east Asian countries. In addition to scaling up the potential growth of energy storage capacity, the program and sub-projects also support job creation during construction and operations, helping to contribute to improved livelihoods and poverty alleviation. The program will also contribute toward meeting nationally determined contributions (NDCs) targets in selected countries and help them pursue low carbon, sustainable development.

Results Framework:

INDICATOR		TARGET	TARGET DATE	NOTES
CTF Core 1	GHG emissions reduced or avoided (MT CO2 eq.)	118,000	Annual, starting in 2024	Annual monitoring
		2,369,000	2044 (over 20 years)	Estimate over the lifetime of project
CTF Core 2	Volume of finance leveraged (USD)	144,400,000	2024	Every dollar of CTF investment aims to leverage 4 dollars of co-financing. This indicator is further disaggregated by co-financing source.
CTF Core 3	Installed capacity (MW)	105 MW	2024	Estimated newly installed capacity from intermittent renewable energy systems (i.e., solar and wind energy) as a result of GESP interventions
GESP 1	Energy rating (MWh)	11 MWh	2024	Energy rating measures the total amount of energy that can be stored or delivered in a system over time. It can be thought of as the overall size of the energy storage system. In this case, the energy system aims to store an estimated 11 MWh of electricity.

INDICATOR		TARGET	TARGET DATE	NOTES
GESP 2	Power rating (MW)	11 MW	2024	<p>The power rating indicates how much power can flow into or out of the energy system in any given instant. It measures the rate of flow of electricity in and out of the energy storage system. For this project, the system aims to deliver or receive a maximum of 11 MW electricity at any point in time.</p> <p>The energy to power ratio can be calculated using values from GESP 1 and GESP 2 based on the equation: energy rating / power rating = duration (e.g., in this case, duration is estimated as 1 hour). Energy to power ratios compare the durations of different energy storage projects and allow learning-oriented comparisons among GESP projects by triangulating these ratios with the other operational experiences of energy storage systems across country, market, and regulatory contexts as the program evolves.</p>
GESP 3	Policies, regulations, codes, or standards adopted for energy storage issues	0	2024	This program does not set a target for the number of policies, regulations, codes, or standards. However, regulatory and policy framework is one of the key barriers for early market development in selected countries. Therefore, the overall project activities will encourage a supportive policy environment for energy storage market development.

INDICATOR		TARGET	TARGET DATE	NOTES
Project-Specific Indicator 1	Number of innovative energy storage and renewable energy sub-projects implemented	6	2024	New types of battery, thermal energy, and hydropower sub-projects are expected across different novel contexts in Cambodia, Philippines, Thailand, and Vietnam. Each sub-project should be tracked separately and reported for this indicator.
[...]				Additional project-specific indicators can be included.
Co-Benefit Indicator 1 (Gender)	Percentage of women in the total workforce of all companies implementing energy storage systems	40%	2024	This information should be presented in raw totals and as a percentage of the aggregated whole. It should be disaggregated by technical departments, management, and/or board level if feasible.
[...]				Additional co-benefit indicators can be included if/when relevant.

