



REI PROGRAM MONITORING AND REPORTING TOOLKIT

Operational Guidance on the REI M&R System

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M&R TOOLKIT SERIES //

Monitoring and Reporting Toolkit

**CIF Program: Renewable Energy
Integration**

TOPICS

- Monitoring and Reporting
- Renewable Energy Integration
- Results and Impact

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EXECUTIVE SUMMARY

The Renewable Energy Integration Monitoring and Reporting (REI M&R) System described in this toolkit is designed to set expected results and track progress toward the program’s main objectives: enhancing the flexibility of energy systems for a smooth integration of higher shares of variable renewable energy generation into the grid and increasing off-grid access to renewable energy. The toolkit builds on the theory and design features laid out in the *REI Integrated Results Framework* (CIF 2021a) and the *REI Program Design Document* (CIF 2021b) and provides detailed, comprehensive operational guidance on how the full REI M&R System is implemented.

The REI M&R System is united with other CIF M&R systems through a common framework of key elements, but it is adapted to fit the specific programming context of renewable energy integration. This includes specific roles and responsibilities for both REI recipient countries and implementing MDBs, as well as the CIF Administrative Unit (see Section 2). The REI M&R System comprises tailored approaches for country investment plan M&R, during design, endorsement, and implementation phases, and project-level M&R, during design, approval, implementation, and completion phases. While this toolkit focuses specifically on REI’s M&R function, REI M&R plays a role that is complementary to additional evaluation, learning, gender, and social inclusion approaches reflected in the multi-dimensional *REI Integrated Results Framework*.

Seven categories of indicators make up the REI M&R System: (1) CIF Impact Indicators, (2) REI Country Impact Indicators, (3) REI Core Indicators, (4) REI Co-Benefit Indicators, (5) REI Optional Indicators, (6) REI Project-Specific Indicators, and (7) Energy Storage Indicators. Some indicators, like CIF Impact Indicators and REI Country Impact Indicators, are situated at a high level of results and are designed to capture results relevant to CIF as a fund and to specific REI country investment plans.

The nine REI core indicators (Category 3) form the foundation of the system and are required to be reported by MDBs for all REI projects on an annual basis. The toolkit provides detailed guidance on each



of these nine core indicators, including an overview and rationale, precise definitions of their components, methodological guidance for baselines/expected results/achieved results, information on required and optional disaggregation per indicator, other considerations, anticipated data sources, and a bespoke reference list.

Co-benefit indicators are designed to capture additional social, economic, and environmental development outcomes that are not a central objective of REI itself. MDBs are required to identify and report on at least one co-benefit indicator per project. In addition, the CIF Administrative Unit will synthesize additional reporting made available by MDBs on REI optional indicators and project-specific indicators and will aggregate energy storage results common to both REI and CIF's Global Energy Storage Program (GESP).

Several additional features of REI M&R and related CIF approaches to results analysis complement the use of indicators. These include multi-stakeholder review mechanisms for country investment plans, signals and dimensions of transformational change, gender and social inclusion results and analytics, development impact modeling, Sustainable Development Goal mapping, narrative reporting, program evaluation, and capacity building and learning activities. (While covered briefly here, some of these areas are elaborated in more detail outside this toolkit.)

The REI M&R Toolkit concludes with practical guidance on how users can navigate the online CIF Collaboration Hub portal to fulfill their annual results reporting roles and responsibilities. As a living document, the REI M&R Toolkit is subject to future review and modifications following CIF's experience deploying the REI M&R System.

LIST OF ABBREVIATIONS

CCH	CIF Collaboration Hub
CIF	Climate Investment Funds
CSP	Concentrated Solar Power
ESMAP	Energy Sector Management Assistance Program
EVs	Electric Vehicles
GESP	Global Energy Storage Program
GHG	Greenhouse Gas
GWP	Global Warming Potential
IEA	International Energy Agency
IP	Investment Plan
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
IRF	Integrated Results Framework
JIM	Joint Impact Model
LSMS	Living Standards Measurement Study
MDB	Multilateral Development Bank
MEL	Monitoring, Evaluation, and Learning
MTF	Multi-Tier Framework for Energy Access
M&R	Monitoring and Reporting
NAPs	National Adaptation Plans
NDCs	Nationally Determined Contributions
ORR	Operational and Results Report
PV	Photovoltaic
RE	Renewable Energy
REI	Renewable Energy Integration Program

RISE	Regulatory Indicators for Sustainable Energy
SDGs	Sustainable Development Goals
STEM	Science, Technology, Engineering, and Mathematics
TFC	Trust Fund Committee
TWG	Technical Working Group
UNFCCC	United Nations Framework Convention on Climate Change
VRE	Variable Renewable Energy

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1. INTRODUCTION

1.1 Overview

CIF's Renewable Energy Integration (REI) Program was launched in 2021 to enhance the flexibility of energy systems for a smooth integration of higher shares of variable renewable energy generation into the grid and to increase off-grid access to renewable energy.

Under the program, CIF provides concessional climate finance to its partner multilateral development banks (MDBs), which support REI recipient countries in developing bespoke, multi-project investment plans aimed at supporting the integration of renewable energy into each recipient country's power systems through different, flexible solutions. REI country investment plans are expected to help accelerate the deployment of an integrated mix of supply and demand-side measures, which will balance opportunities from new and proven technologies with the need for different infrastructure requirements across the sector.

The explicit focus of REI is to address underlying technical, operational, and financial barriers hindering the integration of renewable energy generation into power grids, rather than focusing on accelerating the deployment of renewable energy generation itself. Eligible investment areas supported under REI include enabling technologies and infrastructure, electrification and demand management, and market design and system operations improvements. Experience in countries around the world with growing shares of renewable energy generation shows that unless these technical, operational, and financial barriers are tackled, they will continue to inhibit investments in renewable energy generation at the speed needed to achieve the goals of the Paris Agreement.

The REI Monitoring and Reporting (REI M&R) System described in this toolkit is designed to set expected results and track progress toward the program's outcome areas over time. It tests the soundness of the theoretical model and enables course-correction, learning, knowledge generation, and decision making. The system fosters accountability and supports countries and MDBs in strengthening their investments and implementation activities toward REI's ultimate program objectives.

1.2 REI Integrated Results Theory and Design

REI's underlying theory of change (see Figure 1) posits that if market design and system operations are improved, enabling technologies and infrastructure are provided, and new business models in renewable energy integration developed, then countries will increase the renewable energy penetration in their energy mix, achieve a more flexible and decentralized energy system, improve policies and capabilities, mobilize capital, increase renewable energy access, reduce systems costs, and foster renewable energy innovation. All of this

is expected to contribute toward CIF's ultimate mission to achieve accelerated transformational change and climate financing that enable progress toward net-zero emissions and adaptive, climate-resilient development pathways, in a just and socially inclusive manner.

FIGURE 1. REI Theory of Change

CIF IMPACT	Accelerated transformational change and climate financing that enable progress toward net-zero emissions and adaptive, climate-resilient development pathways, in a just and socially inclusive manner					
PROGRAM IMPACT	Flexibility of energy systems for smooth integration of higher shares of variable renewable energy generation into the grid and increase in off-grid access to renewable energy is enabled					
OUTCOMES	Increased penetration of variable renewable energy into power systems and maximized renewable energy potential of countries	Improved policies, plans, and institutional capabilities	Mobilized public and private capital	Increased renewable energy access	Reduced total system cost	Fostered renewable energy innovation
OUTPUTS	Improved market design and systems	Improved demand-supply management	Deployment of energy storage systems	End-use electrification solutions	Deployment of renewable mini and off-grid solutions	
ACTIVITIES	Market design and system operations	Enabling technologies	Enabling infrastructure	Electrification and demand management	New technologies and business models	
INPUTS	Scaled-up, flexible and predictable concessional finance for public and private sector interventions	Dedicated climate finance for driving innovation	Country-led, programmatic, participatory approach	Consideration of systems transformation and social inclusion at the outset	Multi-MDB technical expertise and coordinated climate action	Large-scale, coherent intervention packages

The [Renewable Energy Integration Program Integrated Results Framework](#) (REI IRF, CIF 2021a) is the approved governing document for REI monitoring and reporting (as well as evaluation, learning, and results-related aspects of gender) at the design stage. It serves to outline the program’s results chain based on the foundational theory of change. It also establishes an innovative, new approach to results management in climate finance that emphasizes holistic, multi-level, multi-dimensional results. The *REI IRF* presents a comprehensive view of REI’s expected results within a single design framework by fully incorporating elements related to the following areas:

- Evaluation and learning
- Transformational change
- Gender and social inclusion
- Just transition
- Sustainable Development Goals (SDGs)

- Development impacts/co-benefits
- Fundamental program results and corresponding indicators.

Figure 2 illustrates how this structure is set up. A vertical axis stacks **results levels** ranging from “Program Output Results” upward to “Program Outcome Results” and “Program Co-Benefits,” “Program Impact Results,” and “CIF Impact Results”, respectively. Each level contains several discrete results statements expected to be achieved by the program at that level. This is the same approach used in most results frameworks, albeit adapted to CIF’s programming context.

Along its horizontal axis, the integrated results framework contains both a **monitoring approach** (the center column following the results levels) and an **evaluation and learning approach** (the right-hand column). Each discrete results statement (in the left-hand column) thus corresponds both to a monitoring approach and an evaluation and learning approach. These dual approaches are designed to complement each other, leveraging different tools, methods, and forms of evidence, but strategically combining them when applicable. Other key results features, such as gender, social inclusion, and just transition components, are integrated throughout the framework in both the “monitoring” and “evaluation and learning” columns as applicable.

FIGURE 2. Structural Overview of CIF’s Integrated Results Framework and Key Features of Monitoring, Evaluation, and Learning Functions

RESULTS LEVELS	MONITORING APPROACH	EVALUATION AND LEARNING APPROACH
CIF Impact Results	<ul style="list-style-type: none"> • CIF-level indicators • Country-level indicators • Core indicators • Co-benefits/development impact modeling and monitoring • SDGs • Gender, social inclusion, and distributional disaggregation 	<ul style="list-style-type: none"> • Transformational change signals across dimensions • Just transition studies • Co-benefits/development impact evaluations • Gender/social inclusion analytics • Learning platforms • Other targeted evaluations and learning activities
Program Impact Results		
Program Outcome Results		
Program Co-Benefits		
Program Output Results		

As a whole, the integrated results framework comprehensively structures both the multi-dimensional results expected to be achieved through REI and how the program’s approach to monitoring, evaluation, learning, gender, and other key issue areas (e.g., SDGs and development co-benefits) attempts to capture these results at multiple levels. This approach is based on [CIF Monitoring, Evaluation, and Learning Policy and Guidance](#) (CIF MEL Policy, CIF, 2022), which in turn governs all CIF monitoring, evaluation, and learning activities across programs. Table 1 summarizes the complementary monitoring, evaluation, and learning functions used to assess each level of REI’s expected results.

TABLE 1. Summary of REI Monitoring, Evaluation, and Learning Approach

RESULTS LEVEL	SUMMARY OF MONITORING, EVALUATION, AND LEARNING APPROACH BY LEVEL
<p>CIF Impact: Accelerated transformational change and climate financing that enable progress toward net-zero emissions and adaptive, climate-resilient development pathways, in a just and socially inclusive manner</p>	<p>Anchored by CIF-level indicators and transformational change concepts that are relevant across CIF programs</p>
<p>REI Impact: Flexibility of energy systems for smooth integration of higher shares of variable renewable energy generation into the grid and increase in off-grid access to renewable energy is enabled</p>	<p>Country-driven approach based on REI investment plans, NDCs, national development priorities, and macro-level proxy reporting on the renewable energy sector</p> <p>Program evaluation(s) and targeted learning opportunities (e.g., REI learning platform)</p>
<p>REI Outcomes:</p> <ul style="list-style-type: none"> (A) Increased penetration of variable renewable energy into power systems and maximized renewable energy potential of countries (B) Improved policies, plans, and institutional capabilities (C) Mobilized public and private capital (D) Increased renewable energy access (E) Reduced total system cost (F) Fostered renewable energy innovation 	<p>Core indicators reported by MDBs on all REI projects with CIF aggregation of results at REI portfolio level;</p> <p>Targeted and thematic evaluation, learning, and gender approaches</p>
<p>REI Co-Benefits: Social and economic development co-benefits</p>	<p>At least one co-benefit reported by MDBs per REI project</p> <p>Additional analytics, evaluation, and learning activities led by CIF</p>
<p>REI Outputs:</p> <ul style="list-style-type: none"> (A) Improved market design and systems (B) Improved demand-supply management (C) Deployment of energy storage systems (D) End-use electrification solutions (E) Deployment of renewable mini and off-grid solutions 	<p>Provides a broad framework of results outputs expected under REI that can be incorporated into project-level M&E frameworks by MDBs as relevant;¹</p> <p>More limited, demand-driven evaluation, learning, and gender activities</p>

1.3 Objectives and Scope of REI M&R Toolkit

This toolkit serves as the implementing arm of the monitoring and reporting components² of the [REI IRF](#). Whereas the integrated results framework presents a blueprint of the main results the program expects to achieve, **this toolkit provides practical, step-by-step operational guidance on how to measure, monitor, and report on program results from start to finish.**

It is intended as a resource for a broad range of REI-specific and global stakeholders: MDBs, recipient countries, in-country stakeholders, contributor countries, civil society, observers, and others interested in how to monitor and report on renewable energy integration issues. It covers both minimum results reporting requirements for the program and flexible opportunities for enhancing results-based design, monitoring, and learning in targeted cases.

At its core, the toolkit outlines and establishes the REI M&R System. It consists of guidance and tools for monitoring and reporting on the progress and performance of REI project and programs³ via a combination of REI core indicators, co-benefit indicators, optional indicators, and project-specific indicators (all at the MDB project level), CIF-level indicators (tabulated by CIF based on available data from other indicators), and customized investment plan reporting (at the national level of each recipient country). The toolkit covers specific information on each of the indicator categories, indicator definitions, methodological guidance, stakeholders' roles and responsibilities, and annual reporting protocols, among other areas.

A separate toolkit, [Maximizing Transformational Impact](#), lays out key considerations surrounding REI's evaluation and learning approaches as they relate to transformational change, just transition, and development impacts.⁴ The evaluation approach can be deployed on a flexible and demand-driven basis to assess the merit, worth, value, or significance of REI interventions. The evaluation processes will draw on data generated by the REI M&R System but will also generate, analyze, and interpret additional information to support learning and change. The approach will be especially critical in enhancing complex systems-level design and analysis of REI, such as the program's contribution to **transformational change** and **just transition** processes.

Gender and social inclusion elements of REI are cross-cutting and are dynamically integrated throughout the monitoring and reporting approach presented in the toolkit, as well as in relevant evaluation and learning activities beyond the scope of this toolkit.

1.4 Key Elements of the REI M&R System

REI, like all CIF programs, deploys its own M&R system fit for purpose. This approach is intended to reinforce CIF's programmatic approach, while providing distinct mechanisms for reporting on country progress, investment plan implementation, and core project-level outcomes in the context of each program (CIF 2022, Section 5.1, Para 11).

In addition to having program-specific features, the REI M&R System is unified with other CIF M&R systems through a common framework of key elements:

- a. Integrated results frameworks:** Each CIF program is governed by a single framework that describes the key results the program intends to achieve; indicators to measure them; along with integrated evaluation, learning, and gender considerations. The integrated results frameworks are approved by the CIF Trust Fund Committee (TFC) at program inception. As "living documents", they can be adjusted over time at the request of the TFCs, based on CIF's experience implementing them.

- b. M&R toolkits (i.e., this document):** Each CIF program’s M&R system is comprehensively described through a unique M&R toolkit. Toolkits include, among other features, precise indicator definitions, methodologies, measurement guidance, and reporting protocols. Toolkits for newer CIF programs further integrate evaluation, learning, and gender considerations.
- c. Core indicators:** Each CIF program measures its primary results via a concise set of mandatory core indicators that are tracked and reported for all projects within the program. Typically reported by MDBs, core indicators are approved by the relevant CIF TFC.
- d. Expected results:** All core indicators and other indicators reported by CIF projects and programs must first establish their expected results (i.e., set targets). Expected results can cover annual, project lifetime, and/or investment lifetime periods, as defined per M&R toolkit. CIF measures the total results achieved for each project.
- e. Co-benefit indicators:** Defined per program, co-benefit indicators measure outcomes that are central to the economic, social, and/or environmental outcomes of a CIF investment beyond the primary climate and sector goals of the program.
- f. Optional or project-specific indicators:** These indicators measure project-specific outcomes that are central to a given CIF project’s objectives, although not captured in the core indicators. Some optional indicators are included in the integrated results framework as suggestions for projects to consider including. Project-specific indicators are included at the discretion of MDBs.
- g. MDB project reports:** CIF draws from and optimizes the use of MDBs’ own monitoring and evaluation (M&E) function(s) at the project level by collecting and collating project log frames, supervision reports, mid-term reviews, project completion reports, and other project M&E documents from MDBs.
- h. CIF Collaboration Hub (CCH):** Results from all of CIF’s programmatic M&R systems are reported online in the [CCH portal](#)—an integrated online information management system.
- i. Operational and results reports (ORRs):** Annual program results are aggregated, analyzed, and written up for CIF’s TFCs per program in a results report or operational and results report—the main annual outputs produced from the M&R systems.
- j. Qualitative and narrative reporting:** CIF’s M&R systems rely on qualitative and narrative reporting approaches to fill information gaps and complement the quantitative results reported.

Many CIF M&R key elements are further defined and customized to meet the specific needs of REI. For example, whereas all CIF programs utilize core indicators, several REI core indicators are different from those used in other CIF programs. The REI M&R System comprises seven categories of indicators overall (see Section 3) and a suite of complementary tools and methods (see Section 4).

The following program-specific features of the REI M&R System⁵ aim to enhance the program’s approach to M&R at the recipient country level:

Country impact indicators: A limited number of customized proxy indicators are selected in consultation with REI recipient countries to track each country’s overall progress toward the renewable energy integration objectives stipulated in the investment plan. These indicators are typically drawn from the national (or sectoral) M&E system; Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs); international monitoring initiatives, such as the World Bank Energy Sector Management Assistance Program’s (ESMAP) Regulatory Indicators for Sustainable Energy scores (RISE scores) and its Multi-Tier Framework for Energy Access (MTF), or other available data sources.⁶

Multi-stakeholder review mechanisms: REI recipient countries are expected to utilize multi-stakeholder review mechanisms as part of their REI M&R approach. The review mechanisms, which enable recipient countries to inclusively self-assess progress made on their investment plans, might include national workshops, South-South learning events, or other modalities. CIF encourages countries to deploy this flexible mechanism at least three times over the course of the investment plan’s implementation period (at baseline, mid-term, and end-line). CIF also aims to support recipient countries to implement the mechanism, in coordination with MDBs, on a demand-driven basis.

1.5 CIF Monitoring, Evaluation, and Learning Principles and Approach

Since 2022, CIF has adopted an integrated approach to monitoring, evaluation, and learning (MEL), with activities designed to complement each other in the pursuit of a cohesive body of evidence for results management, accountability, and learning (CIF 2022, Section 3, Para 7). While this toolkit primarily focuses on the monitoring function for REI, the activities and approach described herein all adhere to the following guiding principles of CIF’s monitoring, evaluation, and learning umbrella:

- Integrated MEL Approach
- Programmatic MEL with Country Ownership
- MDB Harmonization
- Multi-Stakeholder Engagement
- Applied Learning
- Inclusive Transformational Change
- Gender and Social Inclusion
- Climate and Development Alignment
- Innovation
- Timeliness and Cost-Effectiveness
- Ethical Execution
- Transparency

These principles are applied to the design of the REI M&R System and are adapted to meet REI’s unique programming context.





2. REI MONITORING AND REPORTING APPROACH

2.1 REI M&R Levels

CIF approaches monitoring of results as the systematic collection and analysis of information to track outputs, outcomes, and impacts from projects and programs throughout implementation, which fulfills dual accountability and applied learning functions at multiple scales (CIF 2022, Section 1, Para 3).

The central focus of the REI M&R System is situated at the outcome level. At this level, all REI-funded projects are required to report on **the program's nine core indicators** (if relevant to the project's objectives). The core indicators are designed to capture progress and achievements in the key results areas that the program expects to achieve across projects. MDBs are responsible for reporting on the core indicators on an annual basis through the CCH portal. Core indicators should be identified within each project's results framework at the time of CIF TFC approval, then refined and fully integrated into the project's results framework by the MDB Board approval stage.

The REI M&R System also features **co-benefit indicators** at the outcome level. While at the same level as the core indicators, co-benefit indicators relate to REI projects' achieved development outcomes that are not directly linked to REI's main objective, (e.g., to enhance the flexibility of energy systems for a smooth integration of higher shares of variable renewable energy generation into the grid and to increase off-grid access to renewable energy). REI-funded projects are required to propose at least one co-benefit indicator at the time of CIF TFC approval, and to include one or more of these indicators within the project's results framework by the MDB Board approval stage.

Optional indicators in REI are listed in the [REI IRF](#) and this toolkit to help guide MDBs in developing results frameworks for REI-funded projects. CIF will capture and aggregate their progress throughout REI as reported by MDBs. Optional indicators are situated at both the outcome and output levels.

Monitoring and reporting activities at the program output level are more limited. Under CIF's business model, MDBs are responsible for supervising on-the-ground implementation of all REI-funded projects, and the REI

M&R System is thus intentionally designed not to create duplicate or parallel systems from those the MDBs are already implementing at project level. REI output indicators are nonetheless included within the [REI IRF](#) to illustrate the results expected at this level, and they can be used by MDBs to help guide project design, monitoring, and evaluation considerations. CIF will primarily track **two output-level indicators within REI**, which both relate to the program’s contribution toward energy storage results.⁷

REI’s program impact-level monitoring approach will be tailored to each recipient country’s investment plan focus and national context. CIF will collaborate with REI recipient countries after their REI investment plan is endorsed to identify select impact-level indicators per country, which will be monitored and reported on by REI recipient country focal points over time. Recipient countries might draw from existing national statistics, NDCs, NAPs, macro-level proxy reporting on sector progress, international monitoring initiatives (RISE scores, ESMAP/MTF, The Living Standards Measurement Study (LSMS),⁸ etc.), or other sources to fulfill this level of monitoring. This flexible approach may be adapted over time as the program gains—and learns from—experience implementing it in different country settings.

At the CIF impact level, project results will be tracked and aggregated through the lens of **four CIF impact indicators: mitigation, adaptation, beneficiaries, and co-finance**. Together, these cover key aspects of CIF’s mission. In most cases, REI-funded projects will not need to list specifically these indicators within their own results frameworks. The CIF Administrative Unit is responsible for mapping available results data from core indicators, project-specific indicators, and other project data sources onto these four high-level CIF impact indicators to report results across programs where applicable. Some of the results data from REI core indicators will automatically feed upward into CIF impact indicators (e.g., GHG emissions reduced/avoided from REI will automatically feed upward into CIF’s total GHG emissions reduced/avoided. The number of people with new or improved energy access due to REI will feed upward into CIF’s total beneficiaries.) In other cases, REI’s contribution to CIF impact areas will only be applied if MDBs include a relevant indicator into the project-level results framework of an REI-funded project (e.g., in the area of adaptation). REI’s gender impacts are considered across the entire M&R spectrum in a cross-cutting manner (see Box 1).

BOX 1. Monitoring REI Progress on Gender Issues

REI progress on gender issues is another important element of REI’s implementation and results. It is assessed through a combination of approaches both within the REI M&R System and through separate mechanisms. Within the REI M&R System, gender-disaggregated core and co-benefit indicators are expected to contribute to the body of evidence on gender. MDBs also have the option to identify one or more gender-specific indicators under their co-benefit reporting (see Section 3.4). Additional approaches to assessing gender-related issues in implementation and results are expected to take place outside the main REI M&R System. See Section 4.3 for more comprehensive information on CIF’s multi-pronged approach to monitoring REI progress on gender issues.

2.2 REI M&R Roles, Responsibilities, and Process

The REI M&R System is the cornerstone of results management in the program. Implementing it is a minimum requirement across all recipient countries and MDB-approved projects. As in other aspects of CIF, the REI M&R System relies on the partnership of multiple CIF actors along the investment continuum. The CIF Administrative Unit, MDBs, REI recipient countries, and other program stakeholders all have a unique role to play in ensuring that the system functions effectively.

The CIF Administrative Unit is responsible for managing the system’s design and execution, monitoring and analyzing REI contributions to expected results (as outlined in the program’s theory of change) on an annual basis, and submitting achieved results to the CIF TFC for review.⁹

MDBs are responsible for ensuring that project-level REI indicators are identified and M&R data are collected, aggregated, and submitted for each REI project under implementation on an annual basis. Depending on the project type, i.e., public or private sector, REI M&R data are likely to be collected at the project level by project task managers (i.e., task team leaders or TTLs) in coordination with a national executing agency or a private sector implementer. Each MDB’s CIF coordination team should supervise the annual M&R process, but it may delegate certain tasks to project task teams as they see fit.

Recipient countries are responsible for national investment plan monitoring, evaluation, and learning activities with support and guidance from the CIF Administrative Unit. This includes identifying and reporting on select investment plan-level impact indicators; conducting evaluative multi-stakeholder review workshops, and/or other tools at key moments in the investment plan; and coordinating with MDBs to ensure that project-level results data feed into the investment plan’s results framework as required.

Finally, a range of **data producers** are most likely to generate and collect relevant data at the field level, such as line ministries, utility authorities, or project contractors. It is the role of MDBs and recipient countries to broker the data from where it is originally produced, collate it, and report it in a format that is suitable to the REI M&R System and its parameters.



Country Investment Plan Monitoring and Reporting

Investment plan-level monitoring and reporting (IP-level M&R) is overseen by REI recipient country focal points. It involves several distinct activities at key points within the investment plan lifecycle.

INVESTMENT PLAN DEVELOPMENT AND ENDORSEMENT

Investment plans are expected to include a full integrated results framework at the country level. This framework should be aligned with the program's overall approach to monitoring, evaluation, and learning as described in the [REI IRF](#) and this toolkit, but it should be adapted to fit the scope of the proposed investment plan, the national statistical ecosystem, and other country context. It should include country-specific impacts and investment plan-level impact indicators, in addition to being generally aligned with the [REI IRF](#) at lower levels of results. Data to inform baselines and targets can be sourced through national statistical systems, NDCs, NAPs, SDG monitoring platforms, international monitoring initiatives (e.g., RISE scores, ESMAP/MTF, World Bank LSMS, etc.), MDB support for primary data collection, and other data sources. The data sources selected should be clearly cited and referenced as they appear throughout the investment plan.

Upon designing the investment plan, REI recipient countries must also determine, in collaboration with CIF and MDB partners, which country-level impact indicators they will track throughout the course of their investment plan. These indicators might include national or sectoral statistics used as a proxy to illustrate progress related to the investment plan over time; important impact/outcome-level indicators related to objectives of the investment plan that are not well captured via core indicators (from the project level); or information available in the country related to NDCs, NAPs, or other national climate change-related monitoring systems. Such indicators should be reflected within the investment plan's integrated results framework and identified for tracking following the investment plan's endorsement.

Investment plans should further describe the overall monitoring, evaluation, and learning approach the country plans to follow (e.g., multi-stakeholder review workshops, analytics, evaluations, etc.). Within the investment plan document itself, the integrated results framework should thus be accompanied by a short M&R implementation plan, plus considerations of any evaluation and/or learning protocol, as guided by CIF's [Maximizing Transformational Impact](#) toolkit. Gender and social inclusion considerations should also be integrated into the proposed monitoring, evaluation, and learning approach, such as sex-disaggregated indicators and specific gender indicators relevant to the investment plan based on the country-level gender and social inclusion diagnostic, proposed interventions, and gender-related outcomes expected.

If the REI recipient country elects to conduct a diagnostic evaluation or other primary data collection to inform the investment plan and project design, baseline and other data from the diagnostics should directly feed into the investment plan-level integrated results framework and monitoring, evaluation, and learning plan proposed by the recipient country.

Recipient countries may also elect to implement an inception multi-stakeholder review mechanism (e.g., workshop) for the investment plan shortly before or after the initial projects have been approved by the respective MDB Boards. The objective of the review mechanism is to engage a broad constituency of stakeholders (government, implementers, MDBs, beneficiaries, civil society observers, women's organizations, private sector, etc.) involved with the investment plan to critically reflect and establish criteria for monitoring and evaluating the transformational objectives laid out in the investment plan.

ANNUAL INVESTMENT PLAN MONITORING AND REPORTING

On an annual basis (or as data are available), recipient countries should submit updates on the pre-identified investment plan-level country impact indicators to the CIF Administrative Unit, along with short narrative updates on any key progress, achievements, and challenges faced during the reporting year (see Section 3.2). Reporting will take place on the CCH portal and is the responsibility of the REI country focal point and/or delegated technical personnel on the REI country focal point team. REI recipient countries are expected to track three to five national and/or investment plan-level indicators identified at investment plan inception, in coordination with CIF and MDB partners. Although new results data may not be available for each investment plan-level indicator on an annual basis, recipient countries should report the latest available data annually and assess overall progress qualitatively.

Recipient country focal points are further encouraged to share nationally produced materials related to their REI investment plan, such as videos, photos, blogs, and country progress reports. They should also coordinate with the MDBs implementing the REI projects in their country to review project-level M&R and results data available to date.

Additional ways to share and learn from investment plan progress may become available in the form of South-South knowledge exchanges, targeted evaluation and learning activities, and other opportunities.

INVESTMENT PLAN REVIEW AT MID-TERM AND COMPLETION

As the implementation of a recipient country's investment plan advances, the country should, in coordination with MDBs, make use of the multi-stakeholder review mechanism at key inflection points in the investment plan timeline to assess and reflect on investment plan progress, challenges, and transformational objectives over time. This should be conducted around the mid-term of the investment plan (which can be determined by the recipient country, in coordination with MDB partners) and again as the investment plan reaches completion (when all or most projects in the REI investment plan are fully implemented). This mechanism is critical to collate the country's investment plan progress across multiple REI projects and to consider with a wide range of REI stakeholders the catalytic grid-level effects at scale.

Recipient countries are encouraged to make use of this mechanism on a more frequent basis should the demand and business case arise. The CIF Administrative Unit is available to support recipient countries and MDBs with this approach upon request.

Project-Level Monitoring and Reporting

MDBs work closely with recipient countries in the CIF business model and are responsible for designing and implementing project operations, including the project's core monitoring and reporting function. The REI M&R System is designed to absorb the differing M&R 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 REI portfolio results at the global level. Nonetheless, MDBs are still responsible for aligning their project results frameworks with dimensions of the REI/CIF objectives, core indicators, and theory of change, as well as to anticipate the overall monitoring and reporting data needs of the REI M&R System.

PROJECT DESIGN, APPRAISAL, AND APPROVAL

MDBs must ensure that all projects under consideration for REI funding fully integrate the required REI indicators into their project-level results framework. The most important aspect of this integration is to **ensure that all REI core indicators are included** (although core indicators that are justifiably irrelevant to a given project's context may be excluded. This is determined at the MDB Board approval phase.) MDBs can match the definition of these indicators using their own terminology, if necessary. However, the correspondence of the MDB-defined indicator to the REI core indicator should remain clear, and the measurement methodologies should remain compatible to enable the eventual aggregation of results reported across projects in the program.

In addition to incorporating the core indicators into project results frameworks, **MDBs must identify at least one co-benefit indicator per project** and include it within the project's results framework. Optional indicators may be included at the discretion of the MDBs, as well as project-specific indicators that the MDBs put forward in developing the project's full results framework through their project design and appraisal procedure (i.e., beyond the REI-specific M&R requirements).

Energy storage indicators must also be included within the project-level results framework if the REI project being appraised contains an energy storage component.

MDB Board approval triggers the formal requirement for REI projects to:

- a. Identify all applicable core, co-benefit, project-specific, and optional indicators and report their expected results (i.e., targets)**
- b. Begin reporting achieved results to CIF annually during the reporting period**
- c. Share the full project results framework (as devised by the MDB) with CIF.¹⁰**

MDBs can take these actions during the first annual results reporting cycle that follows the project's approval (i.e., it does not need to occur at the specific moment of the project's MDB Board approval). CIF will coordinate with MDB teams to ensure that all relevant indicators are identified in alignment with the REI M&R System and established within the CCH, where all results reporting for the program takes place.

ANNUAL MONITORING AND REPORTING

REI results reporting follows an annual cycle from January 1 to December 31. MDBs must submit updates every spring (approximately March 15) on results achieved by the end of the reporting period, i.e., December 31 of

the previous calendar year. **Actual results must be reported on all applicable core, co-benefit, optional, and project-specific indicators. Reporting must cover all REI projects that have at least reached the MDB Board approval phase by the end of the reporting period.**

Over time, actual results—annual and cumulative—should continue to be reported as projects advance in their implementation. Each REI 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).¹¹ All submissions should be made online through the CCH portal. MDB focal points for CIF and relevant project managers should be granted access to the CCH before the first results reporting period of the project(s).

MDBs should also endeavor to share information on results achieved with recipient country focal points and continue to engage in investment plan-level activities related to the country's REI programmatic approach. Project-level results are expected to serve as the foundation for investment plan -level results management and related activities and should be made available to flow upward to the investment plan level and national level as appropriate.

PROJECT MID-TERM, RESTRUCTURING, AND COMPLETION

At project mid-term, MDBs are requested to share with CIF any mid-term review reports conducted through the MDBs' own policies and procedures.¹² Potential changes made during mid-term review or project restructuring that affect REI projects' expected results, indicators, or implementation scope must be communicated to CIF, along with the justification and formal documentation of these changes. CIF will only adjust expected results and indicators within the CCH upon receipt of such formal documentation. The same policy shall apply to the monitoring and reporting of REI projects that are restructured following MDB Board approval.

At project completion, REI projects must report via the CCH the final results achieved on the relevant core indicators, co-benefit indicators, optional indicators, and project-specific indicators. MDBs should also share the project completion report generated through their respective MDB's protocol.¹³ As multiple REI projects reach completion, CIF will aggregate lessons learned across projects and analyze evidence garnered from the completion reports submitted.

2.3 Considerations for Quality at Entry

The following due diligence considerations at project inception can help facilitate the M&R process throughout an REI project's lifecycle: baseline data, high-level analysis, data collection and disaggregation protocols, and knowledge and learning development.

Baseline Data

REI core indicators and most other indicators measure “the contribution of REI” toward a specific outcome or output. As a result, the baseline value is implicitly set to zero (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 REI investment. MDBs should consider baseline data needs, relevant studies, and analyses that will feed not only into project design, but also into investment plan M&R needs and future monitoring and reporting. Likewise, many qualitative indicators, such as those related to the regulatory environment and marketplace, will require adequate baseline descriptions to measure results achieved during and after project implementation.

Whole-of-Energy-System or Grid-Level Analyses

REI investments can be deployed in multiple places within an energy system, such as at generation, transmission, and distribution points, as well as for stationary or mobile end use.¹⁴ The expected interplay between renewable energy integration investments and their broader interlinked systems suggests the need for a “whole of energy system” analysis during investment plan development or project baseline, which can be used as a reference point for a full range of specific outputs and outcomes that are to be monitored over the course of investment plan and/or project implementation. REI investment plans and/or projects are strongly encouraged to undertake—or draw from existing—grid-level analyses as feasible. This will enable a more comprehensive understanding of the impact of renewable energy integration interventions on energy systems, which will ultimately help strengthen the analysis of REI's impact on questions related to energy generation, access, security, and GHG emissions within specific energy system contexts, markets, countries, and regulatory environments.

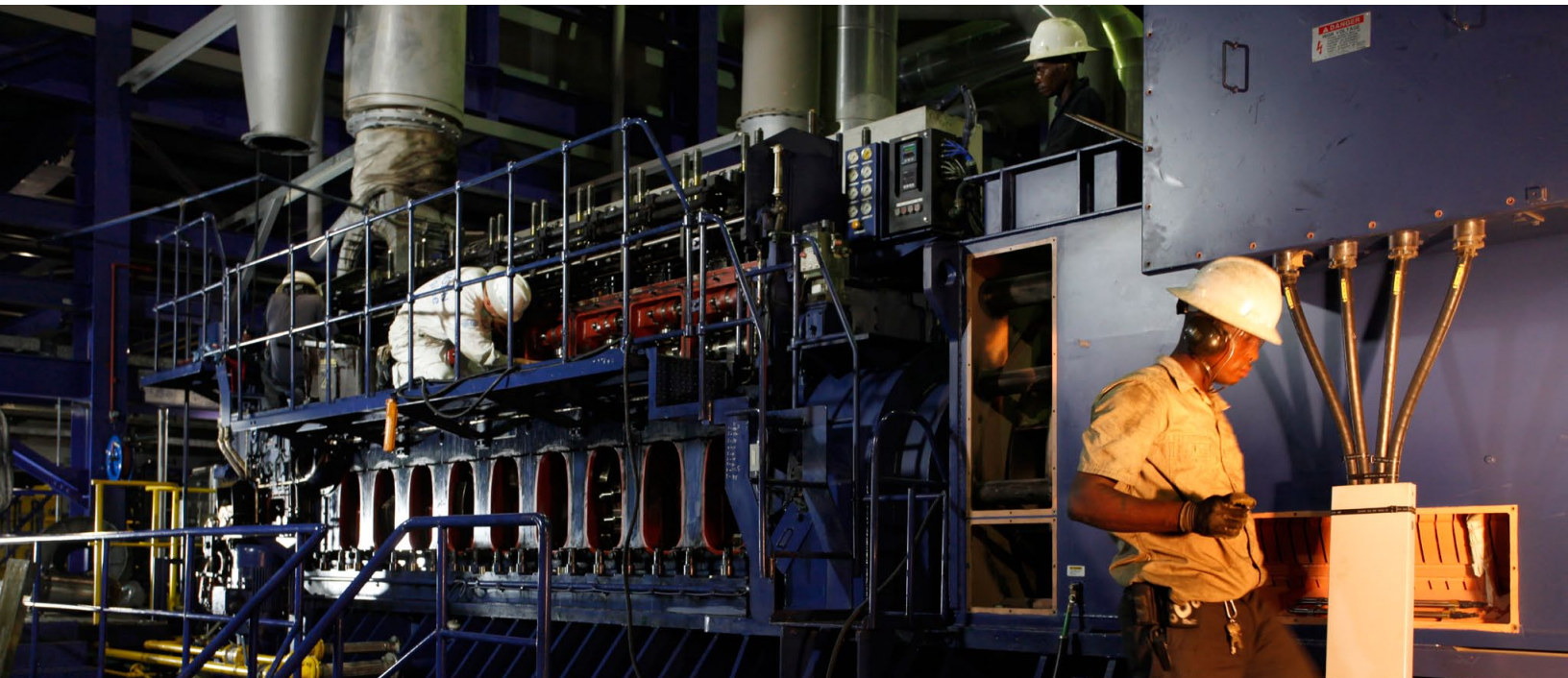
Data Collection Protocol

MDBs are encouraged to devise a full data collection protocol for their projects at the time of approval and to budget accordingly. 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 REI objectives.

Disaggregation by Gender and Other Factors

Whenever possible, all indicators should be disaggregated to improve the REI M&R System's analytical potential by sub-population and/or sub-category. For example, REI Core Indicator 2 should report the installed capacity by renewable energy type (i.e., wind vs. solar) and a co-benefit indicator on the number of jobs created should be disaggregated by the type of jobs created (direct vs. indirect) and by gender of employees. Specific guidelines on disaggregation are included for each indicator in this toolkit and are established in the structure of the CCH's online reporting pages for REI.

At the very minimum, all beneficiary-related indicators (e.g., REI Core Indicator 7) should be fully sex-disaggregated to allow for the analysis of gender gaps in key program outcome areas over the course of implementation (CIF 2022, Section 6, Para 33, Point G). Possible disaggregation by marginalized groups might include: ethnic, religious, and racial minorities; Indigenous Peoples and local communities; migrants; youth, persons with disabilities; and others.



Opportunities for Learning and Knowledge Development

REI 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. The integration of research and learning questions into project design and M&R systems can further strengthen the potential of REI to generate knowledge and evidence beyond the core indicators in a way that is beneficial to funded operations throughout their execution, as well as the emerging field of renewable energy integration more generally.



3. INDICATORS AND DEFINITIONS

The REI M&R System comprises **seven categories of indicators** from the impact level of the [REI IRF](#) (highest level) down to output level (lowest level). Each category is designed to cover a complementary aspect of the program’s M&R, implicating different REI stakeholders, data collectors, reporters, analytical potential, and results audience.

CIF impact indicators (Category 1) are the highest level of indicators in the program. They relate to CIF’s global results areas that are applicable to and aggregable across both REI and other CIF programming areas. CIF is responsible for reporting this information, which is fed from available data generated at different levels of the REI M&R System and other CIF programs’ M&R systems. **The REI country impact indicators (Category 2)** are reported at the national and/or investment plan level from each recipient country.

All REI core indicators (Category 3) are mandatory to report when applicable and remain constant across REI projects. The core indicators form the foundation of the REI M&R System and must be directly integrated into the project-level results framework devised by MDBs for every REI project approved (unless justifiably inapplicable to a project’s design). All REI projects must also report at least one co-benefit indicator (Category 4) selected from the options suggested in this toolkit or another co-benefit identified by the MDB.

Optional indicators (Category 5) are similar in nature to the core indicators but are not required to be reported, as these typically vary between different types of projects. CIF will track these indicators if and when they do occur in MDBs’ project-level results frameworks.

Project-specific indicators (Category 6) refer to the remaining indicators that MDBs independently elect to include within REI individual projects’ results frameworks. While these indicators are likely to vary significantly across REI projects, CIF draws from the information reported from the full project results frameworks in coordination with MDBs to identify additional areas for aggregation and avenues to better capture the program’s total achieved results.

Finally, the REI M&R System includes two **energy storage indicators (Category 7)**. These twin indicators are directly borrowed from CIF’s Global Energy Storage Program (GESP) and are required to be reported on by all REI projects that contain an energy storage component. The intention is to complement and strengthen CIF’s overall evidence base on this important emerging sub-field within the sector.

Table 2 provides a complete list of indicators used in REI. It is followed by detailed definitions and measurement methodologies for the indicators, in addition to overall guidance on reporting processes. **The most**

comprehensive guidance centers on the core indicators and co-benefit indicators (Categories 3 and 4), since these two categories constitute required monitoring and reporting for all REI projects. However, additional descriptions and examples are also provided for the remaining indicator categories to explain how the full REI M&R System is intended to function.

TABLE 2. List of Indicators for REI

INDICATORS	APPROACH
Category 1: CIF Impact Indicators (CIF Global)	
<p>CIF 1. Mitigation: GHG emissions reduced or avoided (Mt CO₂ eq)</p> <p>CIF 2. Adaptation: Strengthened climate resilience of land (ha), people (#), and physical assets (units) through a CIF-supported adaptation mechanism</p> <p>CIF 3. Beneficiaries: Number of women and men benefiting from CIF investments</p> <p>CIF 4. Co-Finance: Volume of co-finance leveraged (USD)</p>	<p>Aggregated by CIF Administrative Unit based on the REI core indicators and project-specific indicators that feed into them</p>
Category 2: REI Country Impact Indicators (Country Investment Plans)	
<p>At least 3-5 investment plan-related indicators per country;</p> <p>Selected in consultation with MDBs and CIF based on national M&E ecosystems/data availability;</p> <p>Varies per country investment plan (e.g., share of renewal energy generation in national energy mix, national RISE scores, national MTF energy access rates, national off-grid access, energy security ratings, etc.)</p>	<p>Identified and reported by REI recipient countries</p>
Category 3: REI Core Indicators (Projects)	
<p>REI 1 (→ CIF 1). Mitigation: GHG emissions reduced or avoided (Mt CO₂ eq) – direct/indirect</p> <p>REI 2. Installed Capacity: Installed capacity of variable renewable energy available to the grid (MW) – direct/indirect</p> <p>REI 3. Renewable Energy Production: Annual renewable energy output (MWh)</p> <p>REI 4. Grid Services: Increase in available grid services and improvements (#)</p> <p>REI 5. Policies: Number of policies, regulations, codes, or standards related to renewable energy integration that have been amended or adopted (#)</p> <p>REI 6 (→ CIF 4). Co-Finance: Volume of co-finance leveraged (USD)</p> <p>REI 7 (→ CIF 3). Renewable Energy Access: Number of women and men, businesses, and community services benefiting from improved access to electricity and/or other modern energy services – direct/indirect (# of people)</p> <p>REI 8. System Costs: Reduced total energy system cost (USD)</p> <p>REI 9. Innovation: Number of innovative businesses, entrepreneurs, technologies, and other ventures demonstrating a strengthened climate-responsive business model (#)</p>	<p>Must be reported by MDBs for all REI projects; directly integrated into project-level results frameworks</p>
Category 4: REI Co-Benefits (Examples for Projects)	
<p>REI Co-Benefit 1 (→ CIF 3). Employment and Livelihoods: Jobs created – direct and indirect</p> <p>REI Co-Benefit 2. Just Transition: Social inclusion and distributional impacts</p> <p>REI Co-Benefit 3. Policy and Planning: Coherence across sectors</p> <p>REI Other Co-Benefits proposed by MDBs for REI projects</p>	<p>Must be reported by MDBs (at least one indicator); varies per REI project</p>

Category 5: Optional Indicators (Projects)

OUTCOME LEVEL:

REI Optional 1: Increase in grid interconnections to accommodate higher shares of variable renewable energy (#)

REI Optional 2: Reduced curtailment (% or MW)

REI Optional 3: Reduced loss of load (% or MW)

REI Optional 4: Reduced reserve inadequacy (% or MW)

REI Optional 5: Reduction in unplanned energy system outages (#)

REI Optional 6: Increase in duration of planned household energy access per day (hours/day)

REI Optional 7 (=CCV 2): Number of innovative products, services, technologies, and processes that have entered a new market context

OUTPUT LEVEL:

REI Optional 8: Number of policies, regulations, codes, or standards supported to enhance the enabling environment for renewable energy uptake (#)

REI Optional 9: Number of technical/financial analyses completed to enhance the enabling environment for renewable energy uptake (#)

REI Optional 10: Number of persons trained on issues related to renewable energy markets and systems (#)

REI Optional 11: Number of supply management technologies, infrastructure, or other solutions deployed (#)

REI Optional 12: Number of demand management technologies, infrastructure, or other solutions deployed (#)

REI Optional 13: Number of energy storage systems installed (#)

REI Optional 14: Number of end-use electrification solutions deployed (#)

REI Optional 15: Number of women and men reached with new end-use electrification solutions (# of people)

REI Optional 16: Number of businesses reached with new end-use electrification solutions (#)

REI Optional 17: Reduction in number of outages due to new end-use electrification solutions (#)

REI Optional 18: Number of renewable mini and off-grids solutions installed (#)

Can be adopted by **MDBs** as they see fit; **CIF Administrative Unit** will aggregate information as available

Category 6: Project-Specific Indicators (Projects)

Independently selected by MDBs and organically included in the projects' individual results frameworks;

Varies per REI project

CIF Administrative Unit will aggregate information as available

Category 7: Energy Storage (Projects)

GESP 1. Energy Rating: Energy rating (MWh) of storage systems installed

GESP 2. Power Rating: Power rating (MW) of storage systems installed

Must be reported by MDBs for REI projects with energy storage components

3.1 CIF Impact Indicators (Category 1)

CIF impact indicators are monitored and reported at the CIF level, based on available results data provided by MDBs on REI projects and a pre-determined alignment of which program core indicators align with CIF impact indicators. For example, reporting on REI Core Indicator 7 (Energy Access) feeds into CIF Impact Indicator 3 (Beneficiaries). CIF impact indicators aim to measure the contributions of all CIF programs toward four key impact areas within CIF’s overall mission: mitigation, adaptation, climate/development benefits for people, and climate financing.

These indicators are the direct reporting responsibility of the CIF Administrative Unit with no direct action required from MDBs or REI recipient countries. Table 3 a short overview of the four CIF impact indicators with a focus on how they align with the REI M&R System.

TABLE 3. CIF Impact Indicators in Relation to REI M&R System

INDICATOR	UNIT OF MEASURE	DISAGGREGATION	INPUTS FROM REI	EXAMPLES OF OTHER CIF INPUTS	CONSIDERATIONS
CIF Impact Indicator 1: Mitigation					
Greenhouse gas (GHG) emissions reduced or avoided	Metric tons of CO ₂ eq. per year (annual)	None at present Direct (Scope 1) vs. indirect (Scopes 2 and 3) as feasible	REI Core Indicator 1	CTF Core Indicator 1	Flexibility needed for different methodologies across program types (e.g., energy sector vs. forestry and land use sector), sectors, projects, and MDBs, with appropriate caveats cited
	Metric tons of CO ₂ eq (cumulative)			SREP Co-Benefit Indicator 3	
	Metric tons of CO ₂ eq per year (lifetime)			FIP Reporting Theme 1.1a ACT Core Indicator 5	
CIF Impact Indicator 2: Adaptation					
Strengthened climate resilience of land (ha), people (#), and physical assets (#) through a CIF-supported adaptation mechanism ¹⁵	People (women/men)	By Gender	Potential contributions from REI Core Indicator 4 (physical assets), REI Core Indicator 7 (people), and optional/project-specific indicators as deemed relevant to adaptation	PPCR Core Indicator 5	Capturing adaptation results requires proactive tagging of the adaptation context of specific projects/interventions
	Hectares			PPCR MDB indicators on sustainable land management, and climate-resilient infrastructure	
	Number of physical assets			Potential contributions: FIP Reporting Themes 1.1b and 1.2, ACT Core Indicator 7 and optional/project-specific indicators deemed relevant to adaptation, NPC, and other CIF programs	Inputs to this indicator are likely to be highly decentralized

CIF Impact Indicator 3: Beneficiaries

Number of women and men benefiting from CIF investments	People (women/men)	By Gender Direct vs. indirect, as feasible	REI Core Indicator 7 Optional/project-specific indicators measuring beneficiaries	PPCR Core Indicator 5 PPCR MDB indicator on persons trained FIP Reporting Theme 1.2 SREP Core Indicator 2 CTF Core Indicator 4 ACT Core Indicator 3 Potential contributions: SREP co-benefit indicators, NPC, and other CIF programs	People counted under CIF 2 are also counted under CIF 3, but the reverse is not necessarily true (i.e., adaptation beneficiaries are a subset of all development beneficiaries) For REI, beneficiaries of grid improvements may also be considered as an input insofar as projects track these benefits. Only individuals, not businesses or organizations, are counted.
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CIF Impact Indicator 4: Co-Finance

Volume of co-finance leveraged	USD	Source of co-financing Mitigation vs. adaptation (or both or other)	REI Core Indicator 6	CTF Core Indicator 2 SREP Core Indicator 3 ACT Core Indicator 6 PPCR and FIP completed disbursement records Comparable indicator exists in all newer CIF programming areas	Methodologies are likely to differ across MDBs REI is expected to primarily contribute to mitigation finance
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3.2 REI Country Impact Indicators (Category 2)

REI country impact indicators are monitored and reported at the **national and/or investment plan level**, based on national and sectoral M&E systems, NDCs or NAPs, international monitoring initiatives (RISE scores, ESMAP/MTF, etc.), or other available data sources. They are intended to provide a high-level view of each country's progress on renewable energy integration, as relevant to the scope of its investment plan. They typically cover proxy results of REI investment plans, (i.e., REI projects *contribute* to these country impacts, but the country impacts are not *attributable* to REI alone).

The country impact indicators approach is critical in the context of REI, since many investments are expected to catalyze grid-level effects beyond the geographic and/or temporal scope of the discrete projects under implementation. For example, interventions that strengthen transmission and distribution, deploy new energy storage systems, or enhance grid-level management might aim to enable an increased share of renewables to come onboard the grid in the country (not simply a net increase in production from renewables). Yet, a country impact indicator like the share of renewables (%) in a country's grid is not well captured via a project-specific M&R approach.

In addition, the country impact indicator approach provides a direct mechanism for country focal points to be involved in the monitoring and reporting of results from REI (rather than attributing all roles and responsibilities to MDBs). This builds on the good M&R practices, experience, and lessons learned from earlier CIF programs and strengthens the programmatic approach throughout the implementation phase of investment plans. It also avoids developing a new set of program-level indicators that might not be well suited in the diverse country contexts involved in the program. Instead, countries have flexibility to draw from their existing national and sectoral M&E systems to identify what should be tracked, or to rely on well-established third-party monitoring, data, and research initiatives relevant to the scope of REI, such as the ESMAP Multi-Tier Framework for Energy Access (MTF) surveys or country-level RISE indicators. Increasingly, countries should also integrate data systems from their NDCs, NAPs, and other climate change policy instruments with investments like those in REI.

Approximately three to five country impact indicators are to be identified during the investment plan development and endorsement process through scoping discussions and agreement reached between the REI country focal point team, the CIF Administrative Unit, and MDBs. This can take place during the joint mission for investment plan development, during the drafting stage of the investment plan, or closer to the time of endorsement.



These indicators are the reporting responsibility of **REI recipient countries** on an annual basis using the CCH system. Additional qualitative narrative reporting related to the selected country impacts is also required. The annual reporting rhythm of country impact M&R should be complemented with more comprehensive multi-stakeholder M&R review mechanisms at key inflection points in the investment plan's implementation timeline (i.e., beginning, mid-term, and late-stage/close-out).

Examples of Possible REI Country Impact Indicators:

- Share of renewable energy generation in national, grid-connected energy systems (%)
- Increase in renewable energy generation assets at grid level (#)
- National Multi-Tier Framework for Energy Access rates (e.g., national, urban vs. rural, sub-national)
- SE4All Global Tracking Framework
- National off-grid energy access (%)
- National RISE Scores or other regulatory indicators
- Energy security/flexibility ratings
- Total energy system costs for national grid
- National electric generating capacity of renewables (GW)
- Registered electric vehicles in the country (# and/or %)
- GHG emissions reduced by 2030 (as compared to NDCs)

Potential Data Sources: National or sectoral M&E systems; National grid studies (MDB-supported, government-led, or third party); Household surveys or other primary data collection; Global data aggregators.



3.3 REI Core Indicators (Category 3)

REI core indicators are monitored and reported at the **project level**, based on MDBs' own M&E systems. They must be integrated into project-level results frameworks for all REI-funded projects and can only be omitted if they are inapplicable to the scope of a given project. REI projects must identify which of the nine REI core indicators apply during their CIF TFC approval submission and report indicative targets. The identification is to be finalized—along with the final target values—at the MDB Board approval phase. The core indicators that are relevant to each REI project are then entered into the CCH, including the target values, the necessary disaggregation, and the disaggregated target values. This set-up is the basis for all future results reporting required by that project.

These indicators are the reporting responsibility of **MDBs** on an annual basis.

The following section describes in detail each of the nine REI core indicators in detail. A summary box is included at the beginning of each indicator sub-section to highlight the headline M&R issues per indicator. Each indicator sub-section then provides an **overview** and rationale for how the indicator captures REI program objectives; **definitions** of the key terminology undergirding the full indicator; **methodological guidance** on what is needed for establishing a baseline, setting a target, and measuring achieved results; an explanation of the required and suggested **disaggregation** for the indicator; **other considerations** specific to each indicator; the **data sources** that projects can expect to draw from for the indicator; and a linked list of external **references** used and as a potential resource for REI M&R stakeholders.

REI 1: Mitigation

REI Core Indicator 1: Greenhouse gas (GHG) emissions reduced or avoided

Unit of Measurement: Metric tons of CO₂ eq. per year (annual); Metric tons of CO₂ eq (cumulative)

Disaggregation: Direct vs. Indirect; Additional disaggregation by GHG scope is optional

Reporting Scope and Frequency: Reported annually as an annualized achieved value (rate) against both annual and lifetime targets; Lifetime achieved values extrapolated/estimated¹⁶

Alignment with CIF-Level Indicators: Feeds into CIF Impact Indicator 1 (Mitigation)

Overview:

REI Core Indicator 1 measures the **net change in greenhouse gas (GHG) emissions reduced or avoided** due to REI interventions, relative to a pre-established GHG emissions reference scenario for the defined grid network or assessment boundary. Reduced or avoided GHG emissions are a core objective of REI, and they are expected to be achieved through the integration of higher shares of variable renewable energy generation (solar and wind) into the grid, as well as grid-flexibility solutions (e.g., battery storage, smart meters, other enabling technologies). GHG emissions reduced or avoided should be reported in terms of **metric tons of carbon dioxide equivalent (MtCO_{2e}) per year** for annual targets and achievements and **metric tons of carbon dioxide equivalent (MtCO_{2e})** for lifetime targets and cumulative achievements. Together, these metrics allow REI to track both how much GHG emissions *rates* are changing due to the program—including related metrics like the grid emissions factor—and the *total* level of mitigation that the program enables over time.

Definitions:

Greenhouse gases (GHG) refer to gases in the earth's atmosphere that trap or release heat and contribute to maintaining an average temperature of the earth's surface. There are six main greenhouse gases defined under the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydro fluorocarbon (HFC), and per fluorocarbon (PFC). For reporting purposes, all GHGs are converted to their equivalent in CO₂.

Emissions—combustion, process, or fugitive—refer to the release of GHGs into the atmosphere, typically due to anthropogenic, or human-led, activities over a defined period of time. For the purposes of this indicator, emissions are defined both on an annual basis (i.e., “annual emissions” or “emissions per year”) and a cumulative basis (i.e., “cumulative emissions” or “lifetime emissions”).

Reduced emissions refers to the process of diminishing or displacing existing emissions due to a new REI intervention. In the context of REI, this typically means that the power production of a pre-existing fossil fuel power plant on the grid is reduced or eliminated altogether after REI enables a new variable renewable energy source to generate power in its place.

Avoided emissions refers to the process of rendering obsolete the future emissions that would otherwise occur to meet comparable power demand in a counterfactual scenario¹⁷ wherein the REI intervention does not take place. For example, this might be in the form of a new fossil fuel plant that would have been constructed, or the continuation of grid inefficiencies or limited grid services for variable renewable energy.

Methodological Guidance:

CIF recognizes that MDBs have their own methodologies in place for estimating, monitoring, and reporting on project-level GHG emissions. MDBs should specify the methodology they have selected to use for each REI project when reporting to CIF. Whenever possible, MDBs are encouraged to utilize the “IFI Guidelines for a Harmonised Approach to Greenhouse Gas Accounting” and other international standards (UNFCCC 2021). For instance, the IFI technical working group (TWG), which was established in 2012, comprises approximately 25 organizations, including UNFCCC, GCF, and GEF. The IFI TWG periodically releases new methodologies, such as harmonized GHG accounting methodologies for renewable energy (2019), default grid factors (2022), and energy efficiency (2023).¹⁸

The following steps provide general guidance on the approach that projects can expect to take at different phases of the project cycle.

*Baseline*¹⁹: First, each project should identify its assessment boundary, which is the physical delineation or geographical area that includes significant emissions sources and emissions sources that will be significantly affected by the planned project. This might be the entire grid network, targeted communities for off-grid, or another well-defined area where REI is poised to intervene.

Sequentially, targets for REI Core Indicator 2 (Installed capacity of variable renewable energy available to the grid) and REI Core Indicator 3 (Annual renewable energy output) might be calculated before establishing expected results for REI Core Indicator 1, since these inputs can help inform GHG accounting methodologies. Grid-level studies, feasibility studies, and REI country investment plans can also be used to map out the current grid emissions factor, sources of emissions, and targeted deficiencies in grid services that limit the emissions reduction potential of existing renewables before REI intervention. In cases where the proposed interventions do not involve the co-location or direct installation of renewable energy generation assets, a theory of change and accompanying quantitative methodology are critical for articulating the causal pathway(s) linking renewable energy integration interventions and activity-level emissions and estimating the value of the targeted GHG emissions reduced or avoided.

Expected Results: REI projects should establish both an *annual target* of emissions expected to be reduced or avoided by the project completion date (i.e., annual net emissions reduced/avoided during the first year of operations) and a *lifetime target* of emissions expected to be reduced or avoided over the economic lifespan of the REI-supported assets. These target values should be established and reported at the MDB Board approval stage (see Section 5). While specific methodologies applied to REI projects may vary, in general, the following steps should be undertaken:

1. Determine the reference scenario (also known as the “baseline emissions” or “business-as-usual” scenario) based on the emissions profile for the grid or assessment area and a reasonable expectation of what would happen in the absence of an REI project over the same two target periods (i.e., by project completion and lifetime).²⁰
2. Identify which activities contributing to the emissions are targeted by an REI intervention and determine the grid emissions factors and/or other relevant emissions factor(s).²¹
3. Estimate the change in activity-level data resulting from the REI intervention(s).
4. Multiply the emissions factor for the activity by the new activity-level data to estimate the net change in GHG emissions in MtCO₂ eq.

5. For greenhouse gases other than CO₂, multiply the value by the Global Warming Potential (GWP) coefficient to convert to CO₂ eq. For CO₂, the coefficient = 1.
6. For lifetime estimates, multiply the annualized net reduction/avoidance of GHG emissions achieved by project completion by the economic lifetime of the asset.²²

$$\text{GHG emissions} = \text{Activity data} \times \text{emissions factor} \times \text{GWP coefficient (per unit of time)}$$

For reporting purposes, all assumptions on reference scenarios, changes in activity levels or fuel consumption, and emissions factors need to be clearly explained with methodology and data sources cited during the first year of reporting in the CCH (and updated if any changes occur thereafter).

Achieved Results: To monitor the real reduction or avoidance of GHG emissions due to REI interventions, projects should begin reporting annualized results (i.e., metric tons reduced/avoided per year) on an annual basis. Achievements are expected as of the first year that renewable energy generation assets become operational or grid-level renewable energy outputs are increased due to enhanced integration and grid support (e.g., improved grid services, interconnection, demand management, storage, etc.). Projects should rely on real operational data on energy generation in MWh and other measurable changes to the grid (or assessment area) following REI intervention to confirm or revise the estimated activity-level data used prior to REI intervention. This can then be applied to the emissions factor—also updated if necessary—to report on achieved results. Annual results should be reported until the project completion period. To report cumulative lifetime achieved results of the project,²³ the final year of emission reductions or avoidance are extrapolated through the economic lifetime of the asset(s) unless ongoing monitoring of achieved results is feasible.

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in one way: Direct vs. Indirect.

MDBs are invited to further disaggregate by the scope of emissions, if feasible.

Direct vs. Indirect Emissions: All projects are required to identify at project approval whether the targeted GHG emissions to be reduced or avoided due to REI are direct or indirect in nature. The terms “direct” and “indirect” in this context refers to a theory-based approach to determining causality and the proximity of effects from REI interventions. This is distinct from the notions of direct vs. indirect cited in the GHG emissions scopes (described later in this section), which relate to direct control over assets by an investee and associated supply or value chains.

- An example of direct GHG emissions reduced or avoided is when an REI project finances a co-located renewable generation asset, which begins production and directly offsets fossil fuel (current or counterfactual) elsewhere on the grid.
- Another example of direct GHG emissions reduced or /avoided relates to off-grid renewables that are directly financed by REI and offset higher emitting diesel generators in local communities.
- An example of indirect GHG emissions reduced or avoided is when an REI project finances grid services that optimize the real annual renewable energy production of pre-existing assets elsewhere on the grid, in turn reducing net grid-level GHG emissions.
- Another example of indirect GHG emissions reduced or avoided are REI-financed grid flexibility solutions that indirectly enable follow-on REI generation assets to integrate to the grid following REI’s interventions or project completion.

Scope of Emissions (optional): International standards for GHG accounting increasingly rely on differentiating scopes of emissions, as defined in the GHG Protocol.²⁴ In general, the scope of emissions refers to the level of control that a company or plant operator can exercise over activities that produce GHG emissions as a result of the project intervention. Based on guidance from the IFI Technical Working Group on GHG Accounting (UNFCCC 2021, 5), GHG accounting scopes are defined as follows:

- Scope 1: Direct GHG emissions from sources that are owned or controlled by the investee (i.e., REI plant/ grid operator or private company) and affected by the investment project
- Scope 2: Indirect GHG emissions from energy sources not owned or controlled by the investee but directly utilized by the investment project (e.g., emissions associated with electricity, heating, or cooling purchased for the investee activities)
- Scope 3: Other indirect GHG emissions from sources that are upstream or downstream of a value chain and not owned or controlled by the investee or private company

It is likely that most monitoring and reporting for REI Core Indicator 1 will correspond to Scope 1 emissions.

Other Considerations:

Prioritization of GHGs: Reporting of GHGs should focus on CO₂ and CH₄ (as converted to CO₂ eq). Other GHGs, such as N₂O, HFCs, and SF₆, can be considered when their contribution to overall levels of CO₂ emissions is expected to be significant.

Data Sources:

Policy documents, legislation, acts, laws, regulations, codes, standards, and related announcements.

References:

See [References](#).

REI 2: Installed Capacity

REI Core Indicator 2: Installed capacity of variable renewable energy (VRE) available to the grid

Unit of Measurement: MW

Disaggregation: Direct vs. Indirect; By Type of VRE; On-Grid vs. Off-Grid

Reporting Scope and Frequency: Reported annually as a cumulative achieved value against two targets (cumulative at project completion and lifetime)

Alignment with CIF-Level Indicators: Corollary to CTF and SREP installed capacity indicators

Overview:

REI Core Indicator 2 measures the **total installed capacity** of variable renewable energy (i.e., solar and wind) that has been effectively integrated into the defined power grid as a result of REI interventions. Importantly, enabling integration into the power grid is the qualifying feature of this indicator. The variable renewable generation assets may or may not have been directly installed and operationalized as part of an REI-funded project. This indicator is measured in terms of **MW** available to the grid cumulatively.

Definitions:

Variable renewable energy (VRE) consists of renewable energy sources that are variable or intermittent due their fluctuating nature and, therefore, not readily dispatchable or controllable. Specifically, VRE consists of wind and solar renewable energy sources, as opposed to other types of more controllable renewable energy sources, such as hydro, tidal, geothermal, and bio energy.

Installed capacity of variable renewable energy (VRE) available to the grid refers to the maximum power generating capacity that a wind or solar power plant can produce under normal conditions and make available to the grid. Installed capacity, measured in megawatts (MW), is also sometimes referred to as “nameplate capacity.”

Total installed capacity of a power system refers to the total combined power generation (production) capacity of all power plants that make up the power system (i.e., the grid). Each of these power plants is technology-specific, with different installed capacity limits depending on the type of energy source used.

Methodological Guidance:

Baseline: During project design, the grid network or assessment boundary must be identified and clearly defined by the MDB. The total installed capacity of the current power system (a non-zero value) is then determined as an input to the baseline value for this indicator and recalibrated to “0” for the purposes of REI M&R. In some cases, this information may already be available from the REI investment plan, diagnostics, or other recent grid studies.

Expected Results: The target value for installed capacity in MW is estimated using data collected as part of the due diligence work conducted through feasibility studies during the appraisal phase of the project and reported at MDB approval (see Section 5). For cases of direct installation of solar or wind assets, this target value can be clearly established as the nameplate capacity of the plant. However, for other types of REI interventions, MDBs should rely on the project’s theory of change to articulate how the interventions are expected to lead to increased installed capacity of VRE available to the grid. The target value(s) should be provided using a suitable

quantitative methodology in line with this theory. In addition, as relevant, MDBs are encouraged to establish two targets for this indicator: the first as a target at project closure, and the second as a lifetime target (i.e., additional VRE installed capacity expected to be enabled after project closure due to REI interventions).

Achieved Results: Results are reported annually, covering the period from January 1 to December 31 of the preceding year. Annual results refer to new or additional capacity of VRE installed during the reporting period, as evidenced through direct installation, technology and country-specific data, or other relevant operational data. Cumulative results cover all new or additional capacity installed over a project's implementation period. Although some projects may also be able to estimate a lifetime target beyond project closure, achieved results should only be reported as real installed capacity.²⁵ All data sources should be cited and specified at the time of reporting.

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in three ways: (i) Direct vs. Indirect, (ii) Type of VRE, and (iii) On-Grid vs. Off-Grid.

Direct installed capacity refers to VRE capacity that has been built or installed as a direct result of REI project interventions. Examples include the following:

- A new solar photovoltaic (PV) or wind project and battery storage with installed capacity of 200 MW of VRE integrated into the power grid for energy arbitrage to reduce peak-load needs in a power system.
- A new solar project and battery storage with installed capacity of 500 MW of variable VRE integrated into the power grid and co-located next to a hydropower dam to provide firm power or energy arbitrage for grid efficiency.
- Rooftop solar (combined with battery storage) with installed capacity of 100 MW of VRE connected into the grid and co-located with an electric vehicle (EV) bus depot and EV charging infrastructure. This rooftop solar + battery system will allow the off-grid power stored in the batteries to be used for EV bus charging during peak times in the grid while using on-grid power during off-peak times for optimal grid and EV charging efficiency.
- A solar mini-grid project (off-grid) and battery storage with installed capacity of 25–50 MW that is connected to a local distribution network (on-grid) to provide reliable power including better service to customers located at the edge of the grid. This hybrid model utilizes both on-grid (distribution network) and off-grid (distributed solar PV) technical solutions for VRE integration while optimizing the efficiency and use of both on-grid and off-grid assets.

Indirect installed capacity refers to renewable energy capacity installed (MW) as a secondary or follow-on effect from REI projects' direct interventions. Although termed "indirect" in the measurement sense, this type of result is not merely a co-benefit or positive spillover effect. Enabling the integration of third-party VRE installed capacity (relative to REI) is a core objective of the program, and indirect installed capacity a core result for this indicator. Examples include the following:

- A new transmission interconnection that connects a newly built 25–50 MW mini-grid solar PV plant (not funded by REI) as well as other new solar PV or wind plants that can be integrated into the power grid in the future due to this new interconnection

- Installation of smart-meters and advanced metering infrastructure (AMI) that can be used to connect new solar PV or wind capacity installations for VRE integration, as well as grid modernization.

The total VRE installed capacity targeted and achieved should be further disaggregated by type of VRE (solar²⁶ vs. wind vs. other) and whether it is on-grid or off-grid. Such disaggregation is identified within the CCH reporting platform during the first year of reporting and is maintained throughout the lifetime of each project.

Other Considerations:

National or Investment Plan-Level Grid Monitoring and Studies: REI project interventions focus on finite aspects or areas on and off the grid that are strategically selected to enable smoother integration of renewable energy generation at grid level. To adequately capture grid-level effects, REI stakeholders may need to employ approaches that enable monitoring at scales above and beyond the project level. The REI M&R System is designed to accomplish this, in part, through the use of country-identified proxy impact indicators (see Section 3.2) and the investment plan multi-stakeholder review mechanisms (see Section 4.1). Planning for other investment plan-level or even national grid monitoring studies can enable the program to better understand installed capacity (and other REI indicators and themes) beyond the geographic boundaries, operational purview, or implementation timelines of discrete REI projects. REI recipient countries and MDBs are encouraged to collaborate on such M&R activities when it is appropriate or useful to do so.

Data Sources:

Grid-level studies and analyses, national or sub-national feasibility studies, technology and country-specific data, power system operational data.

References:

See [References](#).



REI 3: Renewable Energy Production

REI Core Indicator 3: Annual renewable energy output

Unit of Measurement: MWh

Disaggregation: Direct vs. Indirect; By Type of Renewable Energy; On-Grid vs. Off-Grid

Reporting Scope and Frequency: Reported annually as a cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Corollary to CTF and SREP renewable energy output indicators

Overview:

REI Core Indicator 3 measures the **renewable energy-based electricity output in megawatt-hours (MWh)** that was actually delivered during a one-year period as a result of REI intervention(s). Specifically, it considers the actual net power generated and delivered to the grid or produced off-grid from a renewable energy source. Unlike REI Core Indicator 2, this can be from either a variable (wind, solar PV) or non-variable (geothermal, hydro, bioenergy, and tidal energy) source. Similar to REI Core Indicator 2, annual renewable energy output should also distinguish between direct and indirect forms of renewable energy production, both of which contribute to the core objectives of the program.

Definitions:

Renewable energy consists of both *variable and non-variable renewable energy sources* used to generate electricity output. Variable renewable energy (VRE) sources include solar and wind, which are intermittent and not readily dispatchable or controllable due to their fluctuating nature. In contrast, non-variable renewable energy sources—such as hydro, geothermal, bio energy, and tidal or wave energy—are more predictable in nature, thus making them more controllable sources for power generation.

Annual renewable energy output refers to the total amount of actual net electricity that a renewable power plant generates and delivers to the grid in MWh during a one-year period from January 1 to December 31. For the purposes of REI, it should always be measured in megawatt-hours (MWh) (converted from Wh, KWh, or GWh as needed).²⁷

Methodological Guidance:

Baseline: During project design, the grid network or assessment boundary must be identified and clearly defined by the MDB. The total renewable energy output of the current power system (a non-zero value in MWh) for a baseline year is then determined as an input to the baseline value for this indicator and recalibrated to “0” for the purposes of REI M&R. In some cases, this information may already be available from the REI investment plan, diagnostics, or other recent grid studies.

Expected Results: The target value for annual renewable energy output is estimated using data collected as part of the due diligence work conducted through feasibility studies and/or resource mapping during the appraisal phase of the project. For cases of direct installation of renewable energy generation assets, this target value can be calculated based on technology and plant-specific specifications, including consideration of expected operational parameters (e.g., solar irradiation and wind resource mapping, down-time for maintenance, probable

outages, etc.) However, for other types of REI interventions, MDBs should rely on the project's theory of change to articulate how the interventions are expected to lead to increased annual renewable energy production, as well as applying a suitable quantitative methodology to estimate the target value(s) in line with this theory. In addition, as relevant, MDBs are encouraged to establish two targets for this indicator: the first as an annualized target at project closure, and the second as a cumulative lifetime target (i.e., additional renewable energy production expected to be enabled after project closure according to the economic lifetime of REI-supported assets).

Achieved Results: Results are reported annually, covering the period from January 1 to December 31 of the preceding year. Annual results refer to the real delivery of renewable energy produced (as a result of REI) during the reporting period. Irrespective of the type of renewable energy technology used, annual renewable energy output can be calculated using the following formula:

$$\text{Annual renewable electricity output delivered to the grid (measured in MWh)} = \text{Actual renewable electricity capacity generated and delivered to the grid (measured in MW)} \times \text{Actual number of hours per day that MW capacity was delivered to the grid during a one-year period}$$

Annual renewable electricity production in MWh can be obtained through a smart-meter reading that is housed at each renewable energy plant site and tabulated over a one-year period. Plant-specific MWh data can also be verified and confirmed through an integrated systems operator overseeing the power system. For projects with a lifetime cumulative target, projects may elect to extrapolate the final reporting year's annual output in MWh over the economic lifetime of REI-supported assets.

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in three ways: (i) Direct vs. Indirect, (ii) Type of Renewable Energy, and (iii) On-Grid vs. Off-Grid.

Direct renewable energy production refers to both the variable and non-variable renewable energy output in megawatt-hours (MWh) that is delivered to the grid or produced off-grid as a direct result of REI project intervention(s). Examples include the following:

- A new solar PV power plant (variable renewable energy) with 100 MW of installed capacity exposed to sunlight on average for five peak-sun-hours per day could be expected to generate approximately 500 MWh of VRE electricity output on a typical sunny day (100 MW x 5 peak-sun-hours/day = 500 MWh). However, if the plant experiences 50 percent more cloudy days in the year than expected and is only able to operate at 50 MW of capacity for five hours daily on average, then the actual renewable energy produced (electricity output) and delivered is 91,250 MWh (50 MW x 5 hours/day x 365 days in one year).
- A new geothermal power plant (non-variable renewable energy) with 1,000 MW of installed capacity is expected to generate a maximum geothermal electricity output of 8,760,000 MWh each year (1,000 MW x 24 hours/day x 365 days = 8,760,000 MWh). However, if the plant only operates on average at 900 MW of power capacity over a 24-hour period due to temporary plant closures for maintenance repairs or unexpected weather conditions, then the actual geothermal electricity produced and delivered to the grid is only 7,884,000 MWh in total (900 MW x 24 hours/day x 365 days = 7,884,000 MWh or 7.884 GWh).

Indirect renewable energy production refers to renewable energy output in megawatt-hours (MWh) that is enabled as a secondary or follow-on effect from a REI project intervention. Although termed "indirect" in the measurement sense, this type of result is not merely a co-benefit or positive spillover effect. Enabling increased

production of third-party renewable energy generation (relative to REI) is a core objective of the program, and indirect renewable energy production a core result for this indicator. Examples include the following:

- A new transmission interconnection that enables additional electricity output to be delivered to the grid, which, in turn, results in the development of a new renewable energy project (e.g., 100 MW capacity solar PV or wind power plant) that generates new renewable energy outputs in megawatt-hours (MWh) delivered to the grid using this interconnection
- Geothermal exploration that leads to the development of a new geothermal plant (e.g., 1,000 MW capacity geothermal plant) used to offset VRE in the grid, which can generate new renewable energy electricity output in megawatt-hours (MWh) to the grid in the future
- Installation of smart meters or advanced metering infrastructure (AMI) to enable grid integration and modernization that results in the development of a new renewable energy project (e.g., solar or wind power plant) that generates new renewable energy to the grid in the future.

The total annual renewable energy output targeted and achieved should be further disaggregated by type of renewable energy (*solar vs. wind for VRE and hydro, geothermal, other for non-VRE*) and whether it is *on-grid or off-grid*. Such disaggregation is identified within the CCH reporting platform during the first year of reporting and is maintained throughout the lifetime of each project.

Other Considerations:

Share of Renewables in National Energy Mix: It is important to note that this indicator only captures net increases in renewable energy output, which are likely to occur in many countries even without REI intervention, due to the overall increase in generation capacity expected as economies continue to electrify. Tracking increases in the relative share of renewable energy output as a percentage of overall grid output (i.e., share of RE in the national energy mix) is another important metric, which can be covered through country-identified proxy impact reporting (see Section 3.2) to complement REI Core Indicator 3 with more precise information on how quickly renewable energy is being integrated nationally (or at grid level).

Data Sources:

Grid-level studies and analyses, feasibility studies, technology and country-specific data, power system operational data and smart meter readings.

References:

See [References](#).



REI 4: Grid Services

REI Core Indicator 4: Increase in available grid services and improvements

Unit of Measurement: Number (#) of grid services (i.e., function or activity) and improvements (i.e., units of infrastructure, technologies, systems, or other tangible assets); qualitative assessment

Disaggregation: By Unit of Measurement; By Location on the Energy Value Chain (generation, transmission, distribution, stationary end-use, mobile end-use); Distributed vs. Utility Scale

Reporting Scope and Frequency: Reported as an annual achieved value against a cumulative target. Qualitative reporting is also critical

Alignment with CIF-Level Indicators: No, program-specific

Overview:

REI Core Indicator 4 utilizes a flexible approach to measure the **increase in grid services and improvements to existing grid networks**—including ancillary services, flexibility solutions, the addition of new grid interconnections, and other improvements—as a result of REI interventions. Overall, the indicator aims to assess the extent to which REI is enhancing the flexibility of power systems, energy security, and grid resiliency through interventions that are expected to help improve grid management, integrate regional or national markets, and ultimately enable higher shares of VRE into the grid. This is measured based on the **total number (#) of new or improved grid services and improvements**, as compared to a pre-established baseline of existing grid services within a given power system (defined in the context of each REI project through qualifying sub-indicators).²⁸ Common examples of areas to track include technology-enabled upgrades to transmission and distribution networks, battery storage, digital developments, as well as new physical improvements like transmission lines.

Definitions:²⁹

Grid services refer to activities or functions that grid operators perform to maintain the balance of electricity supply and demand within a defined power system and optimize management of the electricity flow through its transmission and distribution networks. At a high level, grid services can include both ancillary services (e.g., frequency regulation, voltage control, inertial response, black start regulation, contingency reserves, etc.) and flexibility solutions (e.g., deployment of enabling technologies such as battery storage, demand-side management, electrification of end-use sectors, digital and ICT development, smart-grid solutions, dispatchable generation, demand-side management and distributed energy resources, EVs, vehicle-to-grid technology, etc.)

An increase in their availability refers to new grid services that were not available at baseline.

Improvements refer to other units of infrastructure, technologies, systems, or tangible assets deployed to enhance the effectiveness of a power system. This could correspond to two different scenarios. The first form of improvements refers to grid-level infrastructure, technologies, systems, or tangible assets that already existed at baseline but have improved their effectiveness due to REI intervention. The second form of improvements refers to other renewable energy integration-related improvements that do not qualify as grid services *per se*. For example, this second form of improvements could include innovative business models focused on demand-side management (e.g., aggregator, peer-to-peer energy trading, energy-as-a-service, community-based ownership models, or pay-as-you-go models for off-grid systems).

Table 4 illustrates a range of possible grid services and improvement expected under the REI program. Other grid services and improvements not captured in the table are also likely to apply.

TABLE 4. Potential REI Activities Qualifying as Grid Services or Improvements

Scaling up renewable energy-enabling technologies	Energy storage technologies, such as batteries, pumped hydro, and hydrogen, which can back up the variability of renewables and provide various services to the grid
	New technologies for real-time grid management that enhance electricity system flexibility and facilitate distributed generation, such as advanced metering systems, wireless network control, and demand side management, including outreach to women and men users
	Technologies that enable electrification of other sectors, such as EV charging infrastructure, to open doors to new markets for renewable generation and new ways to store the generation surplus
	Green fuels or e-fuels in sectors like transportation or heating
Enhancing infrastructure to be renewable energy-ready	Grid interconnection to integrate regional markets and increase their flexibility
	New and smart grids, both large and small scale, that complement each other and enable new ways to manage variable renewable energy generation
	Changes in the operation of existing hydropower plants to accommodate more penetration of variable renewable energy
Supporting renewable energy innovation	Business models that empower women and men consumers, turning them into active participants in demand-side management
	Innovative schemes that enable renewable energy supply, in both off-grid and connected areas
Enhancing market system and market design and operation	New regulations in the wholesale markets that encourage flexibility from market participants, better signal firming power supply's values, and properly remunerate their grid support services
	Design and regulatory change in the retail market that stimulate flexibility on the consumer/prosumer side, including on pricing structures
	New operation procedures that improve predictability of renewable energy, such as advanced weather forecast procedures ³⁰

Methodological Guidance:

Baseline: During project design, MDBs are responsible for determining the current availability of grid services for the defined grid network or assessment boundary. It is recommended to use a mixed-methods approach (qualitative and quantitative) to first comprehensively map and categorize all major grid services in place, before qualitatively assessing their functionality and quantitatively enumerating (or tallying) them per category. This exercise can be accomplished with information from the country's REI investment plan, diagnostics, or other recent grid studies or feasibility studies conducted for the intervention area.

Expected Results: MDBs must first identify the scope of grid services and improvements to be supported by a given project, as the expected results for REI Core Indicator 4 are likely to depend on the specific intervention activities planned per REI project. Many different sub-indicators related to grid services or improvements are possible. Each ancillary service, flexibility solution, or other improvement supported should be counted as one distinct unit, and when feasible to aggregate, the total target for the indicator should equal the sum of all grid services and improvements expected to be in place by the time of project completion. If the units are not possible to aggregate, the expected results can be reported per unit of measurement. Some examples include the following:

Number (#) of new **grid services** established

- # of new front-of-the-meter (utility-scale) battery storage systems installed
- # of new behind-the-meter (residential or commercial and industrial) battery storage systems installed
- # of new smart-charging EV stations installed
- # of new smart meters and/or advanced metering infrastructure (AMI) installed
- # of existing transmission lines and/or networks rehabilitated or modernized
- # of existing distribution lines and/or networks rehabilitated or modernized

Number (#) of new or rehabilitated **grid inter-connections**

- # of new transmission lines installed
- # of new distribution lines installed

In addition, if a grid service and an improvement have a close relationship based on the same intervention (e.g., battery storage as a function is a grid service and deployment of a battery storage system is an improvement) then the intervention should only be counted once. However, if an intervention is more complex and leads to multiple grid services with distinct functionalities, the grid services may be counted separately.

Qualitative targets can be drawn from the MDB project appraisal document, including the theory of change, to briefly summarize the grid service-related objectives expected to be achieved through each project's interventions. Targets are set at the MDB Board approval phase (see Section 5) and the first year of reporting will enable MDBs to briefly describe the context of each grid service or improvement when reporting in the CCH. MDBs are further encouraged to report on any of the optional indicators listed as proxies to REI Core Indicator 4 (see Box 2).

Achieved Results: Results are reported on an annual basis based on the cumulative new or improved grid services and improvements deployed over the course of project implementation. While projects should tally these new or improved grid services quantitatively, reporting should also include short, qualitative explanations of how the grid services have become functional and the real effects they exhibit on actual grid management in the context of the project. MDBs are encouraged to utilize the optional indicators listed in Box 7 to help demonstrate such effects from the new or improved grid services. All data sources should be cited and specified at the time of reporting.³¹

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in three ways: (i) Unit of Measurement, (ii) Location on the Energy Value Chain, and (iii) Distributed Storage vs. Utility-Scale Applications.

Because the project-specific sub-indicators that feed into REI Core Indicator 4 are likely to vary by *unit of measurement*,³² this is the first order of disaggregation required for this indicator.

The *location* on the energy value chain refers to generation, transmission, distribution, stationary end use, or mobile end use.

Distributed storage refers to systems installed in end-user facilities, such as public services, industries, households, or businesses (e.g., mini-grids, off-grid systems, and EVs). *Utility-scale* applications typically refer to the grid network.

Other Considerations:

Grid services and improvements is a broad indicator with significant flexibility to capture the discrete renewable energy integration interventions of diverse project types. Qualitative and narrative reporting is critical to further enhance the robustness of information available on how grid services and improvements are demonstrably increasing the effectiveness of grid systems in these diverse project settings.

Data Sources:

Grid-level studies and analyses, feasibility studies, technology and country-specific data, power system operational data

References:

See [References](#).

BOX 2. Optional REI Indicators Related to REI 4

- **Increase in grid interconnections to accommodate higher shares of VRE (#)**
To be reported annually based on the number of new national or regional grid interconnections over a 12-month reporting period.
- **Reduced curtailment (% or MW)**
Curtailment occurs when VRE output must be reduced because of the inflexibility of the systems, or because VRE generation exceeds the demand.
- **Reduced loss of load (% or MW)**
Loss of load occurs when the supply cannot match the demand and energy must go unserved.
- **Reduced reserve inadequacy (% or MW)**
Reserve inadequacy occurs when the reserve requirement cannot be met.
- **Reduction in unplanned energy system outages (#)**
Number of unplanned outages per month/year, due to the successful installation or implementation of solutions for grid flexibility.³³

REI 5: Policies

REI Core Indicator 5: Number of policies, regulations, codes, or standards related to renewable energy integration that have been amended or adopted

Unit of Measurement: Number (#) of policies, regulations, codes, or standards

Disaggregation: By Type; Gender-Responsive vs. Gender-Blind; National vs. Sectoral. vs. Local

Reporting Scope and Frequency: Reported annually as a cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Corollary to SREP and PPCR policy indicators

Overview:

REI Core Indicator 5 tracks the number (#) of **policies, regulations, codes, or standards** that have been amended or adopted to advance renewable energy market development, including renewable energy integration, following receipt of support from REI at any point in the policymaking and/or regulatory process. The different types of policies, regulations, codes, or standards reported under this indicator are intended to illustrate progress toward creating a robust enabling environment for the maturing renewable energy sector, reflective of changing market conditions, greater cost competitiveness, higher shares of variable renewable energy (solar PV and wind) in the power system, and positive signals to investors.

Definitions:

In general, *energy policies* are used by a government entity to achieve a set of energy planning objectives, including related economic, environmental, and social objectives. *Renewable energy policies* are a subset of such energy policies focused on the renewable energy sector, which may also overlap with international climate treaties like the Paris Agreement and other international climate change mitigation and environmental, social, and governance objectives.

For the purposes of this indicator, *policies related to renewable energy integration* refer to new legislation, laws, and acts adopted, or amendments enacted to existing energy policies to promote the construction, operation, and integration of new renewable energy projects/programs to the power grid. Such renewable energy policies might encompass financial incentives (such as tax credits, government grants or loans, feed-in tariffs, reverse auction mechanisms, and net metering) or *regulatory incentives* (such as renewable portfolio standards and carbon pricing mechanisms).

Renewable energy policies are interpreted through *regulations* on how they are to be implemented or applied using a specific set of rules, incentives, directives, codes, or standards. In essence, a regulation is a specific set of rules or incentives describing how the regulatory agency is expected to carry out the legislation.

- For example, a renewable energy policy of a government might establish a 20 percent annual minimum purchase in the share of renewables in the country's total energy mix. In this scenario, the policy measure established through a legislation (law or act) would use a renewable portfolio standard (RPS) as the mechanism to meet this requirement, while the regulation would specifically define the renewables (e.g., only wind and solar, not new hydroelectric) and other specifications used to meet this requirement.

Codes are typically administered as parameters for meeting specific regulatory requirements. For example, a grid code can help a power system regulator to “prioritize access of renewables into the grid” using a grid code that specifies a “priority dispatch merit order of renewables” over other energy sources, such as coal or natural gas.

Standards are similar to codes and typically establish minimum requirements or guidelines for meeting specific regulatory requirements and/or industry practices. For instance, a renewable portfolio standard (RPS) or net metering standard could both be considered as renewable energy policy measures or standards.

Methodological Guidance:

Baseline: Identifying whether an REI intervention affects a policy, regulation, code, or standard is the responsibility of the MDB at project inception. MDBs should apply this categorization in accordance with the policy ecosystem and terminology used in each country context.

Expected Results: Targets are set as the total number of policies, regulations, codes, or standards expected to be amended or adopted before the project conducts its completion report. Any policy, regulation, code, or standard for which REI provides direct support (e.g., technical assistance) qualifies under this indicator, regardless of the specific stage of policymaking or regulation during which REI intervenes. Not all REI projects will entail policy and regulatory interventions, so in these cases, the expected result for this indicator should be reported as zero (0) with clear justification provided on how the project scope is not relevant to addressing any enabling environment issues pertaining to the renewable energy sector.

Achieved Results: To report on this indicator, MDBs are expected to tally the total number of policies, regulations, codes, or standards that have been amended or adopted until the project reaches completion. MDBs are encouraged to complement this indicator with a qualitative assessment of how policies, regulations, codes, or standards have been implemented while providing evidence of direct and/or indirect effects of how REI interventions have impacted the enabling environment to promote the uptake of grid-connected renewable electricity.

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in three ways: (i) Type, (ii) Gender-Responsive vs. Gender-Blind, and (iii) National vs. Sectoral vs. Local.

As stated, MDBs should determine whether an REI intervention affects *a policy, a regulation, a code, or a standard* (i.e., the type). This determination should be made in accordance with the policy ecosystem and terminology used in each country context. Due to this variation, it is expected that there may be some fluidity across these sub-categories at the REI program level.

It should be further determined whether an REI-supported policy, regulation, code, or standard is *gender-responsive* or *gender-blind* in nature. Gender-responsive policies, regulations, codes, or standards take into consideration the differentiated needs of women and men, potential gender gaps, and actions needed to address them. *Gender-blind* policies, regulations, codes, or standards do not specifically take into consideration or address any of these issues. Examples of gender-responsive policies, regulations, codes, or standards relevant to REI might include the following:

- Human resources policies in energy utilities
- Policies that support gender equality or women’s employment
- Inclusion of safeguards against sexual exploitation and gender-based violence

Thirdly, the policies, regulations, codes, or standards should be disaggregated by the level of government to which they apply: *national, sectoral, or local*.

Disaggregation is identified within the CCH reporting platform during the first year of reporting and is maintained throughout the lifetime of each project.

Other Considerations:

Qualitative reporting is a critical aspect of REI Core Indicator 5 to enhance the robustness of monitoring progress on renewable energy integration policies, regulations, codes, and standards and related effects. The REI M&R System may also capture complementary information through the use of RISE scores as part of the country (proxy) impact indicators (see Section 3.2).



Data Sources:

Policy documents, legislation, acts, laws, regulations, codes, standards, and related announcements.

References:

See [References](#).

REI 6: Co-Finance

REI Core Indicator 6: Volume of co-finance leveraged

Unit of Measurement: USD

Disaggregation: Source of Co-Financing; Mitigation vs. Adaptation (or Both or Other)

Reporting Scope and Frequency: Reported annually as an annual and cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Feeds into CIF Impact Indicator 4 (Co-Finance)

Overview:

REI Core Indicator 6 measures the amount of **direct financing leveraged (i.e., co-financing)** from both public and private sources as part of the REI program. The concessionality of REI resources is designed, in part, to crowd in additional resources from both implementing MDBs and other sources of co-financing. This combination of catalytic REI financing and other resources forms the full financial package for each REI project. The amount of co-financing that actually materializes is tracked in **USD** over the course of REI program implementation to demonstrate the total amount of climate financing enabled through the program over time. REI Core Indicator 6 also directly feeds into CIF Impact Indicator 4, since leveraging co-financing is a common objective of the CIF across multiple programs.

Definitions:

Volume of co-finance refers to the total amount of resources mobilized separately from REI funding that is integrated into the financial package for a project being implemented as part of the program. Co-finance may come from MDBs, governments, the private sector, bilateral agencies, and other actors.

Leveraged refers to the mobilization process of non-REI resources for the financial package of projects implemented as part of the program. Although the concessionality of REI funding is intended to catalyze the mobilization of additional resources, for the purposes of this indicator, leveraging refers to all co-financing sources.

Methodological Guidance:

Baseline: N/A

Expected Results: Setting the target for the total estimated volume of co-financing takes place as part of the project origination and appraisal process (see Section 5). An initial estimate (in USD) should be included as part of each project proposal submitted to the CIF TFC. If another currency is used for the operation, the currency conversion rate should be clearly communicated along with the converted amount(s) in USD. Co-financing targets should be updated, finalized, and reported at the MDB Board approval stage for each project (see Section 5).

Achieved Results: While MDBs may adhere to different methodologies to report and track achieved co-financing, each MDB should inform the CIF Administrative Unit of its preferred reporting methodology and apply the methodology consistently to all projects in its REI portfolio. In general, it is preferable for achieved co-financing to be reported annually based on actual disbursement over the course of project implementation. MDBs are

strongly encouraged to draw from joint-MDB frameworks, such as the “Reference Guide by Joint-MDBs on Private Capital Investment Mobilization,” to promote harmonized reporting on climate finance (see References).

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in two ways: (i) Source of Co-Financing and (ii) Mitigation vs. Adaptation (or both or other).

CIF utilizes five main categories for sources of co-financing to which REI adheres for this indicator: *MDBs, government, the private sector, bilateral agencies, and other actors.*

All co-finance reported that qualifies as climate finance should be tagged as either *mitigation or adaptation finance*, in line with MDBs’ Paris Alignment assessments of project financing and the methodology used in the “Joint Report on MDBs’ Climate Finance” (see [References](#)). Although most co-financing in REI is expected to contribute to mitigation finance, any amounts considered by MDBs as adaptation finance should also be tagged when reporting on REI Core Indicator 6. Any amount of co-financing counted as both mitigation and adaptation financing should be reported as such. Any co-financing amount that does not qualify as climate finance should also be specified when reporting.

Other Considerations:

For private sector projects, confidential co-financing information can be reported as a confidential result in the “Uploaded Documents - Co-Benefits” section of the CCH and formally marked as “Confidential.” The document will then only be visible to members of the CIF Administrative Unit and the MDB responsible for the project.



Data Sources:

Financial data in MDB project proposals, appraisal documents, supervision, and completion reports.

References:

See [References](#).

REI 7: Renewable Energy Access

REI Core Indicator 7: Number of women and men, businesses, and community services benefiting from improved access to electricity and/or other modern energy services

Unit of Measurement: Number (#) of women and men (converted from households, if necessary), businesses, and community services (four separate units of measurement)

Disaggregation: Direct vs. Indirect; By Gender; By Women-Headed Households and Women-Owned Businesses, where possible

Reporting Scope and Frequency: Reported annually as an annual and cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Feeds into CIF Impact Indicator 3 (Beneficiaries) and corollary to SREP energy access indicator

Overview:

REI Core Indicator 7 measures **improved access to electricity and/or other modern energy services** (including new access) for **women, men, businesses, and other community services**. Improved access must come from an increased share of renewable energy sources (e.g., solar and wind) and as a result of REI interventions. This indicator is primarily intended to capture REI's targeted investments in off-grid energy access, although improved energy access due to other types of REI interventions should also be counted. Improvements might occur from various attributes of energy access, such as capacity level, availability of electricity, reliability, quality, affordability, formality, and health and safety issues (see Multi-Tier Framework in References).

Definitions:

For this indicator, *benefiting from improved access to electricity* is defined by MDBs based on the specific context of each project. According to the International Energy Agency (2020), some common aspects of energy access include:

- Household access to a minimum level of electricity
- Household access to safe and more sustainable (i.e., minimum harmful effects on health and the environment as possible) cooking and heating fuels and stoves
- Access to modern energy that enables productive economic activity, e.g., mechanical power for agriculture, textile, and other industries
- Access to modern energy for public services, e.g., electricity for health facilities, schools, and street lighting

The Multi-Tier Framework for Energy Access (MTF) is an international standard that assigns a tier level of energy access to targeted households or communities by taking into consideration a range of energy access attributes. For example, Tier 1 refers to "limited access to small quantities of electricity for a few hours per day, enabling the household to use electric lighting and phone charging."³⁴ If using the MTF, *improved* refers to any upgrade from a lower tier of energy access to a higher one (e.g., Tier 0 to Tier 1, or Tier 2 to Tier 4). Figure 3 illustrates the key criteria required to reach each tier of energy access (i.e., horizontal axis) in relation to each attribute (i.e., vertical axis).

FIGURE 3. Multi-Tier Framework for Measuring Access to Electricity

ATTRIBUTES		TIER 0	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
Capacity	Power capacity ratings (W or daily Wh)	Less than 3 W	At Least 3 W	At Least 50 W	At Least 200 W	At Least 800 W	At Least 2 kW
		Less than 12 Wh	At Least 12 Wh	At Least 200 Wh	At Least 1 kWh	At Least 3.4 kWh	At Least 8.2 kWh
	Services		Lighting of 1,000 lmhr per day	Electrical lighting, air circulation, television, and phone charging are possible			
Availability	Daily Availability	Less than 4 hours	At least 4 hours		At least 8 hours	At least 16 hours	At least 23 hours
	Evening Availability	Less than 1 hour	At least 1 hour	At least 2 hours	At least 3 hours	At least 4 hours	
Reliability		More than 14 disruptions per week			At most 14 disruptions per week or at most 3 disruptions per week with total duration of more than 2 hours	(>3 to 14 disruptions / week) or < disruptions / week with > 2 hours of outage	At most 3 disruptions per week with total duration of less than 2 hours
Quality		Household experiences voltage problems that damage appliances				Voltage problems do not affect the use of desired appliances	
Affordability		Cost of a standard consumption package of 365 kWh per year is more than 5% of household income			Cost of a standard consumption package of 365 kWh per year is less than 5% of household income		
Formality		No bill payments made for the use of electricity				Bill is paid to the utility, prepaid card seller, or authorized representative	
Health and Safety		Serious or fatal accidents due to electricity connection				Absence of past accidents	

Source: Reproduced from <https://mtfenergyaccess.esmap.org/methodology/electricity>

For REI, *electricity access* typically refers to circumstances where solar, wind, or other renewables have been installed or enabled through the REI program and resulted in the availability of improved electricity access to households, businesses, and/or communities.

Modern energy services refer to affordable, reliable, and sustainable energy services that meet the needs of households and businesses. Renewable sources like solar and wind have the potential to provide these services to households and businesses in a variety of circumstances. For example, modern energy services that can be specifically powered by off-grid rooftop solar PV systems might include the following:

- Lighting: LED lights in homes and businesses
- Heating and cooling: Solar thermal systems heating and cooling in homes and businesses
- Cooking: Electric cookstoves for clean cooking
- Water pumping: Solar-powered water pumps used to extract water from wells to provide clean drinking water to communities

- Telecommunications: Solar-powered cell towers and internet connectivity in remote areas

REI Core Indicator 7 measures the total number of men, women, households, businesses, and communities benefiting from modern energy services. The indicator does not measure the number of modern energy services added to a household, business, or community service.

Methodological Guidance:

Baseline: During project design, an assessment area must be identified by the MDB and the level of energy access within the assessment area established using a suitable methodology. The total number of households (women/men), businesses, and community services (a non-zero value) is then determined as an input to the baseline value for this indicator and recalibrated to “0” for the purposes of REI M&R. In some cases, this information may already be available from the REI investment plan, diagnostics, or other recent grid studies.

If feasible, energy access should be established using a multi-tier framework for energy access rather than a binary approach. Data from ESMAP’s MTF, RISE scores, the multi-dimensional energy poverty index, SDG-7 sub-indicator, or other national energy statistics are all good sources of information to report on energy access.

Expected Results: The target value(s) for households, businesses, and other community services (four separate units of measurement) with improved access to electricity or modern energy services are estimated using data collected as part of the due diligence work conducted through feasibility studies during the appraisal phase of the project. If a project is reporting on businesses or community services in particular, additional information should be provided on the nature and definition of these units within the context of the project reporting.³⁵ Overall, the target(s) should be provided in line with the project-level theory of change on how REI interventions are expected to affect energy access and include a suitable quantitative methodology.

Achieved Results: Results are reported annually, covering the period from January 1 to December 31 of the preceding year. They should reflect observed net changes in the energy access rate for the assessment area, as evidenced by primary data from household surveys or operational data from utilities. Cumulative results cover all new women, men, businesses, or other community services with improved access to electricity or other modern energy services over the project implementation period.

If the MTF approach is used, achieved improvements should count any upgrade from a lower tier to a higher one (e.g., Tier 0 to Tier 1 or Tier 2 to Tier 4). A household’s tier status is defined in relation to each of the attributes in the MTF (i.e., capacity, availability, reliability, quality, affordability, formality, health and safety). The overall tier status is measured by applying the lowest tier obtained for any of the attributes (see more on MTF in the References).

All data sources should be cited, and the methodology specified at the time of reporting.

Disaggregation:

Apart from the four sub-units of measurement that are already incorporated in the definition of the indicator, monitoring and reporting for this indicator must be disaggregated in two ways (and three if possible): (i) Direct vs. Indirect, (ii) By Gender, and (iii) By Women-Headed Households and Women-Owned Businesses, if possible.

Direct energy access refers to households, businesses, or other community services that have improved access to electricity either due to improved grid connections (e.g., extended transmission and distribution) or as a result of improved electricity production from renewable energy sources directly enabled by REI project intervention(s). Examples include the following:

- New grid connections from a REI project to provide electricity to 1,000 households in an area previously without any grid connections, via the creation of an off-grid connection with a solar-diesel hybrid system and a battery storage connection
- 50 businesses receiving improved access to electricity as a result of grid connection improvements
- 2,500 households provided with more reliable electricity as a result of projects integrating additional clean energy sources into the grid

Indirect energy access refers to households, businesses, or other community services that have improved access to electricity as a secondary or follow-on effect from REI projects' direct interventions. Examples include the following:

- Capacity building projects to foster policy changes, supported by the REI, which have led to additional energy access to over 100,000 people
- Enhancing the resiliency of existing grid connections, thereby enabling a knock-on effect for the private sector to further integrate renewable energy, not part of the REI project, to provide existing households on the grid with improved access to electricity

Gender disaggregation (i.e., the number of men vs. women) is required for all projects that specifically monitor households with improved access to electricity or other modern energy services. This disaggregation is fully incorporated in the definition of the indicator.

Disaggregating by the number of *women-headed households*³⁶ and *women-owned businesses* is strongly encouraged for all projects that monitor improvements in access to electricity or modern energy services at the household and business level, respectively.

Other Considerations:

Converting households to women and men: When energy access data available are reported in terms of households, the values should be converted to the number of men and women and the methodology for making this conversion cited during the first year of reporting. CIF suggests using country data (or sub-national data, if possible) on the average number of people per household, as made available by sources like the UN's Population Division.³⁷

Other national energy access metrics: As a complement to the information tracked in REI Core Indicator 7, the country-driven proxy impact reporting window of the REI M&R System is positioned to capture metrics such as national RISE scores, national MTF rates, and national off-grid access rates. This may be particularly suitable to project contexts where robust primary data collection (e.g., household surveys) is not possible at the relative scale of the project.

Information on one *optional indicator* closely related to REI Core Indicator 7 is listed in Box 3. MDBs are encouraged to complement their reporting on REI Core Indicator 7 with this optional indicator if feasible.

Data Sources:

Household surveys, national and sub-national energy statistics, ESMAP MTF data, SE4All Global Tracking Framework, operational data from utilities.

References:

See [References](#).

BOX 3. Optional REI Indicators Related to REI Core Indicator 7

- Increase in duration of planned household energy access per day (hours/day)

This indicator is intended to measure the increase in average daily hours of energy availability.³⁸



REI 8: System Costs

REI Core Indicator 8: Reduced total energy system costs

**Only applicable for projects with the explicit aim to reduce such costs*

Unit of Measurement: USD per year (converted to USD from local project currency if necessary)

Disaggregation: None

Reporting Scope and Frequency: Reported as an annualized achieved value for a 12-month period against an annualized target (at project completion). Results are reported on an annual basis, if feasible, or at project mid-term and completion

Alignment with CIF-Level Indicators: No, program-specific

Overview:

REI Core Indicator 8 measures the **total reduction in annualized, monetary costs of an energy system** or a defined portion of the system targeted by REI interventions (e.g., a specific power plant), for projects with the explicit aim to reduce such costs.³⁹

Reduced energy system costs are a core outcome objective of REI, which is expected to be achieved through increased energy efficiency and flexibility solutions (such as enabling technologies, improved demand-supply management, and other grid services) and the increasing cost competitiveness of renewables in local markets. REI Core Indicator 8 should be measured in **USD per year** based on the annualized net reduction of energy systems costs as compared to the baseline annualized energy system costs. While REI aims to reduce energy system costs for the total energy system (i.e., grid level), if systems cost data at this level are not available to—or are beyond the purview of—an REI project, the project may elect to define a portion of the system where it is intervening (i.e., assessment area) to monitor and report on this indicator.

Definitions:

Reduced refers to a net decrease in costs from a baseline scenario compared to the real observed costs at project completion (or over the lifetime of the intervention assets). This is also in line with the expectation that global market conditions will continue to increase the cost competitiveness of renewables in the future (IRENA 2021).

Energy system refers to the interconnected structure and function of all components involved in the production, conversion, delivery, and use of energy in a defined area (IPCC 2014). For some REI recipient countries, this could refer to the full national grid. In other cases, REI projects may prefer to define a smaller assessment area of the energy system (e.g., a power plant) more directly linked to their scope of interventions to measure this indicator.

*Total...costs*⁴⁰ refer to the real observed sum of costs for a power system to function annually. Comprehensive total costs would account for both construction and operating costs, such as capital, fuel, operations and maintenance, and transmission. For the purposes of reporting on this indicator, REI projects are encouraged to focus on annualized operational costs or another MDB-identified methodology.

Methodological Guidance:

Baseline: MDBs should first determine whether this indicator is applicable to a given REI project and its explicit objectives. If not, no reporting is needed. If so, MDBs should identify a project-appropriate methodology

to measure this indicator. Several methods or approaches can be used in coordination with independent systems operators to calculate the reduced total energy cost savings in a power system (i.e., grid) following REI interventions. Some include the following:

- **Levelized Cost of Energy (LCOE) Analysis:** This method calculates the lifetime cost of generating a unit of energy (usually expressed in cents per kilowatt-hour) for each type of energy source. The LCOE analysis considers the costs of building and maintaining the power plant, fuel costs, and other expenses associated with generating electricity. By comparing the LCOE of different energy sources, power systems operators can determine which sources are the most cost-effective.
- **Net Present Value (NPV) Analysis:** This method calculates the present value of all the expected costs and benefits of a project over its lifetime, using a discount rate to account for the time value of money. By comparing the NPV of different energy projects, power systems operators can determine which projects are most likely to be profitable.
- **Cost-Benefit Analysis (CBA):** This method compares the costs of implementing a project with the benefits that will result from it. In the case of renewable energy and battery storage, the benefits may include reduced fuel costs, reduced emissions, and improved grid stability. By comparing the costs and benefits of different projects, power systems operators can determine which projects are most likely to generate the greatest net benefit.
- **Production Cost Modeling:** This method uses computer models to simulate the operation of the power system under different scenarios, taking into account the costs and technical characteristics of different energy sources, the costs and benefits of enabling technologies like battery storage, and the constraints of the grid. By comparing the results of different scenarios, power systems operators can determine which combinations of energy sources and technologies are most cost-effective.
- **Life Cycle Assessment (LCA):** This method evaluates the environmental impacts associated with the entire life cycle of a product or system, including raw material extraction, manufacturing, operation, and disposal. By comparing the environmental impacts of different energy sources and technologies, power systems operators can determine which options are most sustainable and environmentally friendly.

Expected Results: Based on the selected methodology, REI projects should estimate the net difference between the total energy system costs identified for the baseline year (or moving scenario) and the new total energy system costs expected following the first full 12-month period after REI intervention(s).

Achieved Results: Total energy system costs should be measured annually, as observed by the independent systems operator or utilities based on the real performance of the energy system, grid, or other assessment area for a full 12-month period. The reported value should be the real net difference between the baseline year (or scenario) and each observed year of total energy system costs. It is expected that such data may only be available to report at project mid-term or completion. Projects are encouraged to incorporate additional narrative reporting on any other significant changes to the energy system that may affect the total energy systems costs during the implementation period. This could include qualitative analysis and/or theory-based information on the direct contribution of REI interventions to grid savings as compared to other factors at play.

Disaggregation:

N/A

Other Considerations:

National or Investment Plan-Level Grid Monitoring and Studies: REI project interventions focus on finite aspects or areas on and off the grid that are strategically selected to enable smoother integration of renewable energy generation at grid level. To adequately capture grid-level effects, REI stakeholders may need to employ approaches that enable monitoring at scales above and beyond the project level. The REI M&R System is designed to accomplish this, in part, through the use of country-identified proxy impact indicators (see Section 3.2) and the investment plan multi-stakeholder review mechanisms (see Section 4.1). Planning for other investment plan-level or even national grid monitoring studies can enable the program to better understand total energy system cost reductions beyond the geographic boundaries, operational purview, or implementation timelines of discrete REI projects. REI recipient countries and MDBs are encouraged to collaborate on such M&R activities when it is appropriate or useful to do so.

Systems Costs per MWh: It should be noted that an absolute increase in production in a given energy system could be expected to increase total systems costs. A useful related metric to consider in assessing systems costs is the (marginal) cost of an energy system's production per MWh. This is not used at the REI program level due to the challenges in aggregating such a metric across countries.



Data Sources:

Utilities and independent system operators' financial data, regulators, national system operators.

References:

See [References](#).

REI 9: Innovation

REI Core Indicator 9: Number of innovative businesses, entrepreneurs, technologies, and other ventures demonstrating a strengthened climate-responsive business model

Unit of Measurement: Number (#) of businesses, entrepreneurs, technologies, and ventures (separately)

Disaggregation: Built into the Definition based on the Four Separate Units of Measurement; By Women-Owned Businesses; By Gender of Entrepreneur (if individual level)

Reporting Scope and Frequency: Reported as an annual achieved value against a cumulative target; qualitative reporting on evidence of the strengthened business model

Alignment with CIF-Level Indicators: Corollary to innovation indicators in other CIF programs

Overview:

REI Core Indicator 9 aims to capture REI's contribution to **innovating business models within the renewable energy sector**, particularly by tracking private sector innovation and advancements with a direct link to climate action. For instance, some REI projects may support business model progress from ideation to prototyping, research and development, pilot testing, entry to market, or scaling up. Innovative business models will need to be specifically defined and monitored within the context of each operation. At program level, REI will track the number of businesses, entrepreneurs, technologies, and other ventures that are both directly supported by the program and can provide evidence to demonstrate their strengthening from one stage of business model development to the next. REI projects without this type of focus do not need to report on REI Core Indicator 9.

Definitions:

Innovative refers to a characteristically new practice or approach employed that differs from the business-as-usual scenario to meet a given objective. Ultimately, MDBs are responsible for determining what constitutes an "innovative" business model within the project contexts where they operate. MDBs are encouraged to draw from international standards, such as the Joint-IFI harmonized indicators for private sector operations (HIPSO), which defines firm-level business innovation as the adoption or operationalization of a product, internal process, technology, or financing structure that is new or not widely used in the domestic sector (see References).

Businesses, entrepreneurs, technologies, and other ventures are the four viable units of measurement that CIF employs to track this indicator.

- *Businesses* targeted can be at different scales, such as micro, small, and medium enterprises (MSMEs) or corporations.
- *Entrepreneurs* refers to individual or firm-level actors attempting to introduce a new business or business concept in a new market context.
- *Technologies* in this context refer to a wide range of tools and instruments used to advance targeted aspects of energy systems, e.g., battery storage, technologies that enable end-use electrification, digital and ICT developments, smart-grid solutions, and dispatchable generation technologies.
- *Venture* is an open-ended term that can be used to capture other activities or initiatives driving the innovation of targeted business models

Demonstrating a strengthened...business model refers to the provision of evidence that a given business model supported by REI has advanced from one stage of development to another (i.e., from ideation to prototyping, research and development, pilot testing, entry to market, or scale up). While *business models* can be defined according to each project's local condition and market context, some common examples relevant to the scope of REI include aggregators, peer-to-peer energy trading (i.e., P2P), energy-as-a-service (i.e., EaaS), community-based ownership models (e.g., community solar PV), and pay-as-you-go (i.e., PAYG) models for off-grid power systems.

Climate-responsive describes an entity or activity that specifically addresses one or more aspects of climate action relevant to mitigation and/or adaptation objectives. For example, most activities within REI would automatically qualify as climate-responsive due to the direct linkage of renewable energy issues with climate change mitigation objectives.

Methodological Guidance:

Baseline: The most important baseline consideration for this indicator is to define innovation within each REI project's context. In general, a business, entrepreneur, technology, or venture should be classified as innovative if it employs an altogether new concept for renewable energy integration, or if it is a first-time approach within the targeted power system or market context.

Expected Results: Each business, entrepreneur, technology, or venture that is both classified as innovative and receives direct financial and/or technical support from REI counts as one unit. The total number of units expected to strengthen their business model over the implementation period should feed into the expected results reported for this indicator.

Achieved Results: The units should be counted as having "achieved" a strengthened climate-responsive business model when direct evidence becomes available (qualitative or quantitative) that the business model has strengthened since the baseline scenario. Typically, this means that a business model has moved from one business development phase to the next. In practice, MDBs should use their discretion to declare the "tipping point" when this has happened and provide a short, descriptive narrative of how and why this is the case. It is likely that many projects will not be able to report achieved results on this indicator until mid-term or project completion.

Disaggregation:

Monitoring and reporting for this indicator is already disaggregated according to the unit of measurement in the definition (businesses, entrepreneurs, technologies, and ventures).

For businesses, further disaggregation should be used to capture women-owned businesses.

For entrepreneurs, further disaggregation should track firm-level vs. individual-level entrepreneurs, and for the latter, men vs. women individual entrepreneurs.

Other Considerations:

This indicator is primarily intended to support more innovative project models to track their level of support for new businesses, entrepreneurs, technologies, and ventures, which often carry a high level of risk. Qualitative narrative reporting is an important complement to enhance the robustness of progress achieved for this often context-specific area of work.

In some cases, an innovative technology counted under REI Core Indicator 9 may also qualify to be counted as a grid service or improvement under REI Core Indicator 4.

If an REI project does not focus on innovation, it does not need to report on REI Core Indicator 9

Information on one *optional indicator* closely related to REI Core Indicator 9 is listed in Box 4. MDBs are encouraged to complement their reporting on REI Core Indicator 9 with this optional indicator if feasible.

Data Sources:

Business plans and operational progress reports, routine project monitoring, qualitative assessments, and direct private sector feedback.

References:

See [References](#).

BOX 4. Optional REI Indicators Related to REI Core Indicator 9

- Number of innovative products, services, technologies, and processes that have entered a new market context (#)

This indicator is intended to measure the commercialization of innovative products, services, technologies, and processes. These should be defined similarly as for REI Core Indicator 9.⁴¹



3.4 REI Co-Benefit Indicators (Category 4)

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-benefit objectives. Funding must not only contribute toward Paris Agreement goals but also toward inclusive economic growth, SDGs, just transitions, and more. This approach further reflects the fact that MDBs, as both implementing entities for climate finance 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 REI projects, that are not directly linked to REI’s main objective of enhancing the flexibility of energy systems for a smooth integration of higher shares of variable renewable energy generation into the grid and to increase off-grid access to renewable energy. Examples of co-benefits might include the reduction of poverty in a REI intervention area, job creation, increased women’s empowerment, improved health and public safety, or economic growth. Overall, co-benefit indicators help demonstrate the wider development benefits of renewable energy integration projects and can be measured through both quantitative and qualitative means, including through modeling approaches (see Section 4.4).

Projects financed under REI are required to identify at least one quantitative co-benefit indicator and integrate it into their project-level results framework prior to MDB Board approval. Co-benefit indicators can either be selected from the illustrative list in this toolkit or identified by the MDB. MDBs must also provide a qualitative assessment of the co-benefit(s) as part of their annual reporting to better demonstrate the development context of the quantitative result achieved.

The following section describes some example indicators for the co-benefits expected to be achieved through REI projects, as set forth in the [REI IRF](#).

REI Co-Benefit 1: Employment and Livelihoods

REI Co-Benefit 1 Indicator Example: Jobs created – direct and indirect

Unit of Measurement: Number (#) of people (women/men)

Disaggregation: Direct vs. Indirect; By Gender; By Type of Job (if possible)

Reporting Scope and Frequency: Reported as an annual and cumulative achieved value against a cumulative target; Possibility for additional modeling of estimated job creation

Alignment with CIF-Level Indicators: Feeds into CIF Impact Indicator 3 (Beneficiaries)

Overview:

Job creation is an important co-benefit expected to be applicable to many REI projects. Monitoring and reporting on job creation should center on the types of jobs created (or losses avoided) and which sub-populations are gaining (or mitigating) employment opportunities. For example, this might include generating evidence on decent jobs created and plans for addressing jobs lost through skills development and economic diversification activities. Alternatively, it might include analyses of women's access to medium and high-skilled green jobs, STEM-education and vocational training, and school-to-work transitions.

Definitions:

Jobs created should be defined by each MDB in the context of the project. Some examples could include temporary construction jobs during installation of renewable energy integration infrastructure or permanent jobs created during the operational and monitoring of the grid.

Methodological Guidance:

Baseline: For new job creation, the baseline may already be set at zero (0). For changes in grid-level economic opportunities, the number of jobs may be available as part of the grid-level studies or other area-specific operational data.

Expected Results: The target value for new jobs created could be estimated as part of the due diligence work conducted through feasibility studies during the appraisal phase of the project. Economic modeling may also be available to estimate onward effects of job creation from renewable energy-driven economic growth.

Achieved Results: Results are reported on an annual basis, covering the period from January 1 to December 31 of the preceding year. Annual results refer to new jobs created during the reporting period, as evidenced through project operational data or economic studies. Cumulative results cover all new jobs created over the lifetime of a given project. All data sources should be cited and specified at time of reporting.

Disaggregation:

Monitoring and reporting for this indicator should be disaggregated in three ways: (i) Direct vs. Indirect, (ii) By Gender, and (iii) By Type of Job (if possible).

Direct jobs created refers to new jobs created as a result of REI project intervention(s). A few examples include the following:

- 250 people employed full-time to support the operation and maintenance of a newly completed mini-grid system
- 3,000 temporary jobs created during the construction of new grid connections to connect 500 households to the main grid.

Indirect jobs created refers to new jobs created as a secondary or induced effect from REI projects' direct interventions. For example, this could be 30 full-time jobs created as a result of businesses with improved access to electricity being able to expand their enterprises.

Gender disaggregation between the number of men and women is required for all projects that specifically report on job creation as a co-benefit.

Job type disaggregation is encouraged for all projects that specifically report on job creation as a co-benefit.



Other Considerations:

MDBs are encouraged to use existing economic models, such as the Joint Impact Model (JIM), which can quantify the overall economic effects of renewable energy projects. See Section 4.4 for more information on the modeling of job creation.

Data Sources:

Project-level tracking, local labor or employment databases, economic studies.

References:

See [References](#).

REI Co-Benefit 2: Just Transition

REI Co-Benefit 2 Indicator Examples: Indicators or results analyses that relate to social inclusion and/or distributional impact dimensions of a just transition

Unit of Measurement: Varies highly; Difficult to measure with standardized indicators

Disaggregation: Varies highly; By Gender or Other Vulnerable Groups (whenever the “number of people” is measured)

Reporting Scope and Frequency: Reported as an annual and cumulative achieved value (or qualitative result) against a cumulative target (or qualitative expected result); Significant potential for more targeted studies and analyses

Alignment with CIF-Level Indicators: Some indicators could feed into CIF Impact Indicator 3 (Beneficiaries)

Overview:

Just transition is a complex concept that applies a social and economic equity lens to the transformational change inputs, processes, and outcomes needed to address the climate crisis. Although there is no universally agreed-upon definition, one framework proposed through the CIF’s Just Transition Initiative⁴² identifies *social inclusion* and *distributional impact* as two important dimensions to consider, along with the notion of *transformative intent* as a cross-cutting element. These dimensions are illustrated in Figure 4.

Definitions:

Just transition elements should be defined by each MDB in the context of the project.

Methodological Guidance:

Potential just transition-related indicators should be selected with careful attention paid to the social inclusion and/or distributional impact context of each REI project. Due to the complex, context-dependent nature of just transitions, results in this area may defy universal measurement approaches, such as standardized indicators. REI projects are encouraged to focus on one aspect of just transitions, identify a related indicator or results measurement approach, and anchor this selection with an appropriate theoretical framework. Box 5 lists some examples of potential just transition-related indicators.

Disaggregation:

Reporting on just transition-related indicators should be disaggregated by: (i) Gender (men/women) and (ii) By Vulnerable Social Groups, whenever measuring the number of people. Other types of disaggregation should be applied at the discretion of MDBs.

Other Considerations:

Just transition elements may be further assessed through evaluative approaches, studies, and learning activities. Please refer to REI’s [Maximizing Transformational Impact](#) toolkit for more detailed guidance.⁴³

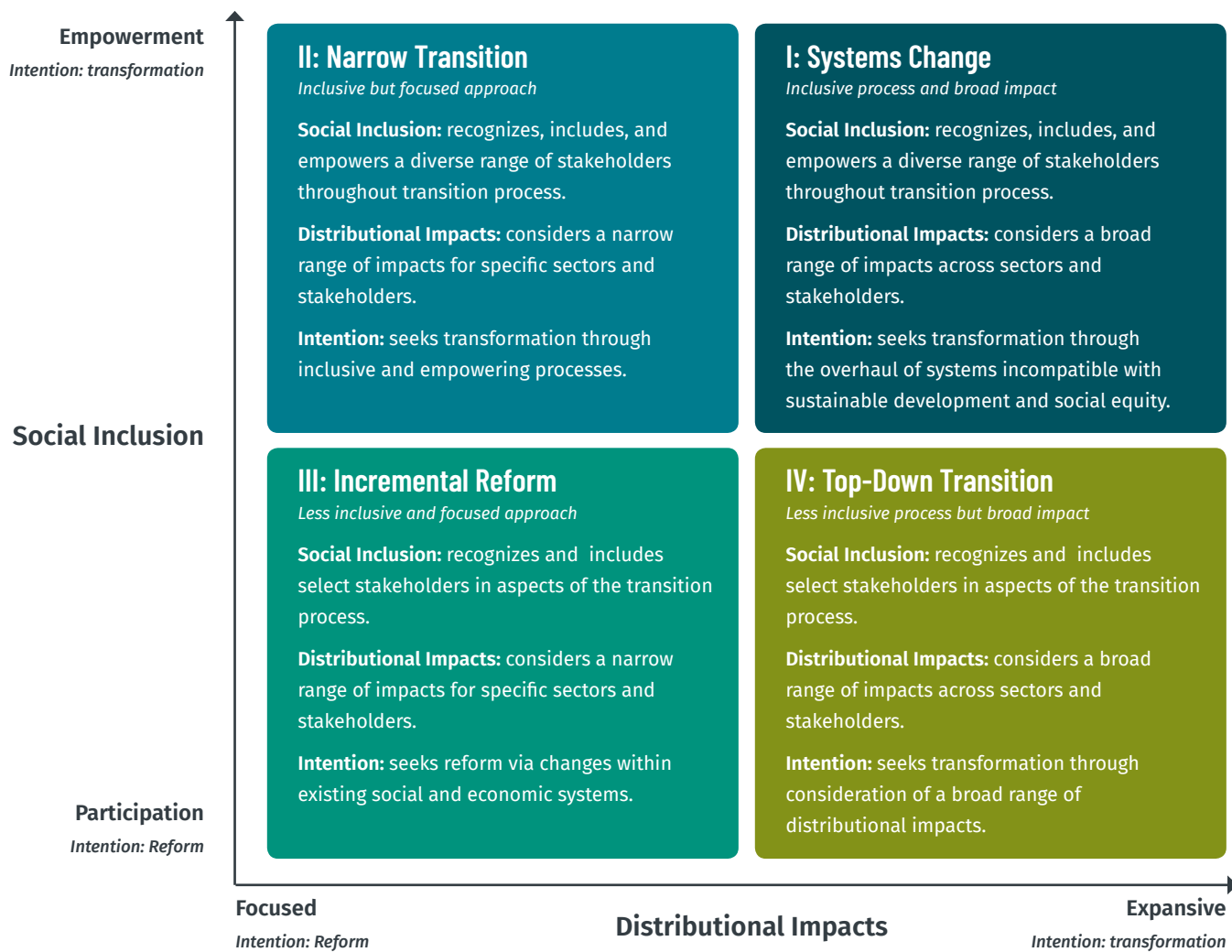
Data Sources:

Project-level tracking, local labor or employment databases, economic studies, social impact assessments, process data from stakeholder engagement activities.

References:

See [References](#).

FIGURE 4. Framework for Just Transitions



Source: Reproduced from <https://justtransitioninitiative.org/about-just-transitions/>

BOX 5. Framework for Just Transitions

Social Inclusion:

Measuring meaningful engagement with and empowerment of relevant stakeholders (including labor, business, civil society, and different levels of government) at national, sub-national, and local levels of government

- Categories of stakeholders involved (including percentage of labor and vulnerable community members relative to the project)
- Number of agreements reached with stakeholders in the context of the REI program and just transition processes

Distributional Impacts:

Measuring a range of potential positive and negative impacts on workers and communities that require identification, tracking, and redress

- Potential social and economic development impacts identified and tracked during project development and implementation
- Potential impacts (beyond education and skills development) identified and mitigated during project implementation

Measuring ways to create, provide, or support access to sustainable and decent employment through a just transition lens

- Number of net job opportunities directly created that are sustainable and decent jobs.

Measuring the proactive identification of existing and anticipated future skills and training gaps in the context of renewable energy integration

- Number of people (men/women) trained for employment in the renewable energy sector
- Number of people (men/women) in communities neighboring renewable energy integration infrastructure with improved livelihoods
- Number of workers or community members (men/women) who find employment (or achieve promotions) based on training provided by REI projects



REI Co-Benefit 3: Policy and Planning Coherence

REI Co-Benefit 3 Indicator Examples: Number of coherent policies or sectors and their degree of alignment

Unit of Measurement: Varies, e.g., number of policies or sectors; Qualitative

Disaggregation: National vs. Sectoral vs. Local

Reporting Scope and Frequency: Reported as an annual and cumulative achieved value (or qualitative results) against a cumulative target (or expected qualitative result)

Alignment with CIF-Level Indicators: Corollary to PPCR Core Indicators 1 and 2

Overview:

REI Co-Benefit 3 aims to address the extent to which renewable energy integration considerations related to REI projects are integrated into policies and planning processes both vertically (i.e., locally, sectorally, and nationally) and horizontally (i.e., harmonization across sectors, plans, or strategies at a similar level). For example, this could include the degree of alignment between NDCs, national policies and development strategies, and REI project-level approaches. Additionally, this co-benefit area might consider the extent to which other sectors were analyzed and representatives consulted during the development of REI project designs and approaches.

Definitions:

Policy and planning coherence refers to two or more policies, plans, or related processes that identify synergistic objectives, activities, and considerations. To qualify as coherent, the two or more policies, plans, or processes should not contradict each other on any matters related to renewable energy integration.

Degree of alignment might consider quantitative alignment, such as the measurable contributions of a specific project's expected results toward larger scale policy objectives. An example could be a renewable energy project, which is expected to add 50 MW of installed capacity from solar sources, aligning to the country's national energy goal of adding 2 GW of clean energy by 2030.

It might also consider qualitative alignment, such as the assessment of how synergistic the key objectives, activities, and considerations of the two or more policies, plans, or processes are in practice.

Methodological Guidance:

MDBs should identify an appropriate indicator, target, and methodology for each project reporting on this co-benefit. For example, the number of sectors, policies, or plans deemed coherent could be counted at baseline and at project completion and reported as a simple output indicator. However, this should be complemented with qualitative, narrative reporting that assesses the coherence achieved within the project's context.

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated by level of coherence: National vs. Sectoral vs. Local.

Other Considerations:

Policy and planning coherence may be further assessed above the project level, for example at the level of the REI investment plan. This level of policy and planning coherence can be considered as part of the multi-stakeholder review mechanism (see Section 4.1) or assessed through other evaluative approaches, studies, and learning activities.⁴⁴



Data Sources:

National government regulations on relevant sectoral or national policies, country's NDCs, REI investment plan.

References:

See [References](#).

REI Co-Benefits: Other

Other REI Co-Benefit Indicators: MDBs may propose any other co-benefit indicator that tracks social, economic, or environmental results beyond the scope of REI's primary objectives.

Example: Improvements in health as a result of reduced pollution

Unit of Measurement: Varies; e.g., USD per kg of local pollutants, or other metrics

Disaggregation: N/A

Reporting Scope and Frequency: Reported as an annual and cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Corollary to possible co-benefits in CTF and SREP

Overview:

Clean energy projects may promote a variety of health benefits through their removal of local pollutants like nitrous oxide (NO_x), sulfur dioxide (SO₂) and other total suspended particles from the atmosphere and improvement of air quality. This can be measured, for example, in terms of **USD per kg of a local pollutant**.

Definitions:

Health benefits refers to improvements in the health of the local population, such as those based on the monetized value of the health damaging pollutants (e.g., nitrous oxide, sulfur dioxide, or total suspended particles PM 10 or PM 2.5) avoided.

Methodological Guidance:

MDBs should identify an appropriate indicator(s), target, and methodology for each project reporting on this co-benefit.

One methodology that past CIF projects have employed is to estimate and track the reduced or avoided emissions of local pollutants using a baseline emissions reference scenario and changes in power production activity data due to project intervention.⁴⁵ The projects have then determined the *economic cost of local pollutants* in USD per kg based on the available healthcare studies and literature.

For example, in Indonesia, the coal damage costs of the three major pollutants emitted from a coal plant are as follows:

1. USD 0.95 per kg of NO_x
2. USD 0.0019 per kg of SO₂
3. USD 0.0062 per kg of PM₁₀

By multiplying the net change of pollutants with the cost per kg of the respective pollutant, the projects measured their estimated monetized health savings as a result of renewable energy interventions.

Disaggregation:

N/A

Other Considerations:

Health and other development co-benefits may be further assessed qualitatively and quantitatively using a variety of other indicators.

Data Sources:

Operational data from plant operators, healthcare studies (local or international standards)

Other Examples of REI Co-Benefits:

Additional potential results areas for which co-benefit indicators might be identified and tracked by REI projects include the following:

- Poverty reduction
- Macroeconomic improvements
- Strengthened regional development and/or integration
- Improved access to clean water
- Women's empowerment, voice, and agency
- Reduced gender gaps
- Reduced time poverty for household tasks or drudgery
- Climate resilience and adaptation⁴⁶
 - o Improved management of physical climate risks to power system assets/infrastructure
 - o Integration of hydrometeorological data and early warning response measures into renewable energy market design and energy demand and supply management
 - o Enhanced climate and disaster resilience of vulnerable communities through off-grid access



3.5 REI Optional Indicators (Category 5)

REI optional indicators are monitored and reported at the **project level**, based on MDBs' own M&E systems. They are intended to capture probable results expected to be achieved through the REI program and may be useful for MDBs to incorporate in their project-level results frameworks on a project-by-project basis (although this is not required). CIF will analyze the project results frameworks for all REI projects at MDB Board approval phase and identify which, if any, REI optional indicators are reflected in the MDB-approved project results framework. Upon agreement from the MDB, the selected optional indicator(s) are uploaded to the CCH alongside the core indicators for results reporting.

Optional indicators are reported by **MDBs** on an annual basis using the information already available in their own project-level M&E systems. Projects that have not incorporated any of the REI optional indicators do not require any further action during annual reporting.

Some REI optional indicators are situated at the outcome level and are closely linked to certain REI core indicators (i.e., REI 4, REI 7, and REI 9) in terms of the results area that they aim to capture (see Sections 3.3.4, 3.3.7, and 3.3.9). However, not all REI core indicators have corresponding optional indicators. Most REI optional indicators are situated at the output level, as they relate to the short-term intervention results of discrete projects. Box 12 comprises a full list of REI optional indicators.

BOX 6. REI Optional Indicators

OUTCOME LEVEL:

REI Optional 1: Increase in grid interconnections to accommodate higher shares of VRE (#), related to REI 4

REI Optional 2: Reduced curtailment (% or MW), related to REI 4

REI Optional 3: Reduced loss of load (% or MW), related to REI 4

REI Optional 4: Reduced reserve inadequacy (% or MW), related to REI 4

REI Optional 5: Reduction in unplanned energy system outages (#), related to REI 4

REI Optional 6: Increase in duration of planned household energy access per day (hours/day), related to REI 7

REI Optional 7 (=CCV 2): Number of innovative products, services, technologies, and processes that have entered a new market context, related to REI 9

OUTPUT LEVEL:

REI Optional 8: Number of policies, regulations, codes, or standards supported to enhance the enabling environment for renewable energy uptake (#)

REI Optional 9: Number of technical/financial analyses completed to enhance the enabling environment for renewable energy uptake (#)

REI Optional 10: Number of persons trained on issues related to renewable energy markets and systems (#)

REI Optional 11: Number of supply management technologies, infrastructure, or other solutions deployed (#)

REI Optional 12: Number of demand management technologies, infrastructure, or other solutions deployed (#)

REI Optional 13: Number of energy storage systems installed (#)

REI Optional 14: Number of end-use electrification solutions deployed (#)

REI Optional 15: Number of women and men reached with new end-use electrification solutions (# of people)

REI Optional 16: Number of businesses reached with new end-use electrification solutions (#)

REI Optional 17: Reduction in number of outages due to new end-use electrification solutions (#)

REI Optional 18: Number of renewable mini and off-grids solutions installed (#)

3.6 REI Project-Specific Indicators (Category 6)

The REI M&R System is designed to track project-specific indicators selected by the MDBs to monitor the goals, outcomes, and outputs of individual REI projects, based on their approved project-level results frameworks. CIF does not provide any suggested list of project-specific indicators. These indicators are entirely driven by the MDBs in a decentralized fashion. The CIF Administrative Unit's role is to review all REI projects' MDB-approved results frameworks with the aim to identify, harmonize, and capture commonly reported indicators that can complement the results reported through the core indicators and other indicator categories. The approach also helps to highlight notable achievements from individual projects as part of the annual results reporting process.



The **MDBs** should supply the CIF Administrative Unit with the full project-level results frameworks of individual REI projects at MDB Board approval. The most recently available progress reports or implementation status reports generated by the MDBs through their own project supervision protocol should also be submitted during each annual reporting period.

Identification and analysis of commonly reported indicators may take place at various stages of the program's lifetime, as new projects come onboard and the effectiveness of capturing results via the core indicators is iteratively reassessed.

3.7 Energy Storage Indicators (Category 7)

Energy storage indicators are monitored and reported at the **project level**, based on MDBs' own M&E systems. **They must be integrated into project-level results frameworks for all REI-funded projects with an energy storage component.** These two indicators on energy rating and power rating of storage systems are borrowed from CIF's [Global Energy Storage Program \(GESP\) M&R System](#). They are straightforward to measure and are specifically selected to allow results to be aggregated and learning to flow between GESP and REI. If an REI project does not include an energy storage component, it is not required to report any information under Category 7.

Energy storage indicators are the reporting responsibility of the **MDBs** on an annual basis.

GESP 1: Energy Rating

GESP Indicator 1: Energy rating of storage systems installed

Unit of Measurement: MWh

Disaggregation: Storage Technology Type (thermal, mechanical, electrochemical); Location on the Energy Value Chain (generation, transmission, distribution, stationary end-use, mobile end-use); Distributed vs. Utility-Scale

Reporting Scope and Frequency: Reported annually as an annual and cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Aligns with GESP Indicator 1

Overview:

This indicator tracks the **energy rating** of deployed battery or other energy storage systems in REI projects, as measured in **MWh**. It is intended to demonstrate the total increase in energy storage capacity deployed across all REI projects with an energy storage component and is designed to be aggregated with energy storage results from other CIF programs, notably GESP. Energy Storage Indicator 1 is required for all REI projects with an energy storage component.

Definitions:

The *energy rating* of an energy storage system indicates the maximum amount of energy that can be stored in the battery or storage system. It 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 Energy Storage Indicator 2 for more on power rating. In some settings, the terminology energy storage capacity is used interchangeably with energy rating.

Methodological Guidance:

In general, the following formula applies:

$$\text{Energy rating} = \text{Power rating (Energy Storage Indicator 2)} \times \text{Duration of energy storage discharge at the rated power in number of hours}$$

Baseline: N/A

Expected Results: Energy ratings should be estimated based on country or technology-specific standards expected within the targeted energy system. This specification is typically well known in advance of deploying an energy storage system.

Achieved Results: For annual monitoring and reporting, this indicator should report on the energy rating of a battery or energy storage system 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:

Monitoring and reporting for this indicator must be disaggregated in three ways: (i) Storage Technology Type, (ii) Location on the Energy Value Chain, and (iii) Distributed Storage vs. Utility-Scale Applications.

The storage technology *type* refers to thermal, mechanical, or electrochemical.

The *location* on the energy value chain refers to generation, transmission, distribution, stationary end use, or mobile end use.

Distributed storage refers to systems installed in end-user facilities, such as public services, industries, households, or businesses (e.g., mini-grids, off-grid systems, and electric vehicles). *Utility-scale applications* typically refer to the grid network.

Other Considerations:

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 REI energy storage projects in a learning context.

Data Sources:

Country-level data, technological specifications of battery or energy storage systems.

References:

See [References](#).

GESP 2: Power Rating

GESP Indicator 2: Power rating of storage systems installed

Unit of Measurement: MW

Disaggregation: Storage Technology Type (thermal, mechanical, electrochemical); Location on the Energy Value Chain (generation, transmission, distribution, stationary end-use, mobile end-use); Distributed vs. Utility-Scale

Reporting Scope and Frequency: Reported annually as an annual and cumulative achieved value against a cumulative target

Alignment with CIF-Level Indicators: Aligns with GESP Indicator 2

Overview:

This indicator tracks the **power rating** of deployed battery or other energy storage systems in REI projects, as measured in **MW**. It is intended to demonstrate the total increase in power capacity deployed across all REI projects with an energy storage component and is designed to be aggregated with energy storage results from other CIF programs, notably GESP. Energy Storage Indicator 2 is required for all REI projects with an energy storage component.

Definitions:

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.”

Methodological Guidance:

Baseline: N/A

Expected Results: Power ratings should be estimated based on country or technology-specific standards expected within the targeted energy system. This specification is typically well known in advance of deploying an energy storage system.

Achieved Results: For annual monitoring and reporting, this indicator should report on the power rating of a battery or energy storage system rendered operational during the 12-month reporting period.

Disaggregation:

Monitoring and reporting for this indicator must be disaggregated in three ways: (i) Storage Technology Type, (ii) Location on the Energy Value Chain, and (iii) Distributed Storage vs. Utility-Scale Applications.

The storage technology *type* refers to thermal, mechanical, or electrochemical.

The *location* on the energy value chain refers to generation, transmission, distribution, stationary end use, or mobile end use.

Distributed storage refers to systems installed in end-user facilities, such as public services, industries, households, or businesses (e.g., mini-grids, off-grid systems, and electric vehicles). *Utility-scale* applications typically refer to the grid network.



Other Considerations:

N/A

Data Sources:

Country-level data, technological specifications of battery or energy storage systems

References:

See [References](#).



4. OTHER KEY FEATURES OF REI M&R AND RESULTS

REI uses multiple, complementary approaches to monitor, evaluate, generate evidence, and learn from aspects of the program that are not easily captured through indicators. Many of these approaches are based on targeted and demand-driven research, analytics, and/or stakeholder engagement activities, which various teams in the CIF Administrative Unit oversee in close coordination with MDBs.

4.1 Multi-Stakeholder Review Mechanism for Investment Plans

Multi-stakeholder review mechanisms are an important tool for REI recipient countries to utilize as part of their REI M&R approach. They enable recipient countries to self-assess progress made on their investment plans with a diverse group of REI stakeholders and can include national workshops, South-South learning events, joint discussion of progress on the REI country impact indicators, and other modalities. CIF encourages countries to deploy this flexible mechanism at least three times over the course of the investment plan's implementation period (approximately at baseline, mid-term, and end-line of the full investment plan). CIF also aims to support recipient countries to implement the mechanism, in coordination with MDBs, on a demand-driven basis. Approaches may be customized per country and combined with other evaluative approaches and learning-oriented activities, such as those described in REI's [Maximizing Transformational Impact](#) toolkit.

Multi-stakeholder review mechanisms should be inclusive, with equitable participation of men and women, representation from civil society organizations (including organizations representing women), and participation from other marginalized social groups. The content discussed through this mechanism should take into account the differentiated impacts of REI projects on men, women, and marginalized social groups, as well as the differentiated needs and expectations of REI by gender and other social groups. Gender and social inclusion should be considered as cross-cutting themes to address throughout workshop discussions (or in the content of the selected mechanism).

4.2 Signals and Dimensions of Transformational Change

If feasible, recipient countries and MDBs are encouraged to incorporate the signals and dimensions of transformational change, including just transition elements, into aspects of their monitoring and reporting on REI results. This can take place during the implementation of the multi-stakeholder review mechanism (see Section 4.1), as part of narrative reporting (see Section 4.6), or through other avenues. A comprehensive description of transformational change is available in REI's [Maximizing Transformational Impact](#) toolkit.

4.3 Gender and Social Inclusion Results and Analytics

REI results related to gender and social inclusion are captured through an array of mechanisms that collectively build a body of evidence on progress toward the objectives of CIF's [Gender Action Plan](#).

First, within the REI M&R System, all indicators measuring the “number of people” are required to be sex disaggregated. This enables the CIF Administrative Unit and MDBs to better track projects’ contribution toward reducing gender gaps, to assess potential gender-differentiated outcomes, and to monitor the overall distribution of results achieved over time.

Second, MDBs have the option to include gender and social inclusion-related indicators as part of their co-benefits reporting (see Section 3.4). This could be as a part of the social inclusion dimension using a just transition lens or as a separate gender-related indicator, which is selected by the MDB for an REI project and monitored at CIF level over time.

Third, the CIF Gender Team and MDBs review the full project results frameworks of REI projects at MDB Board approval with the aim to identify gender and social inclusion-related indicators. Based on this exercise, the indicators identified are extracted and entered into the CCH Gender module for CIF to track and analyze REI’s annual progress on the *CIF Gender Action Plan(s)* throughout program implementation. The indicators should be linked to any gender gaps identified in the gender analysis and project activities designed to address those gaps. The reporting is carried out through the Gender Module of the CCH portal. The CCH Gender Module also records information on analyses of gender gaps and gender-focused project activities.

Encouraging projects to develop a gender action plan built on the social inclusion and gender analyses undertaken at the design stage can be an effective strategy for MDBs to monitor gender-related results and ensure that gender-related considerations are explicitly embedded in project design and implementation. REI projects should select gender indicators for which information is likely to be available and affordable to collect, using various data sources and methodologies to set baseline and target values for both sex-disaggregated and gender-specific indicators.⁴⁷ This approach promotes the inclusion of such indicators in projects’ results framework, in turn, enabling the CIF-level approach to extract and track such information.

In addition to quantitative data points, qualitative approaches at the project level are also critical tools to analyze the gender issues affecting projects. REI projects will often need to capture gender-related information through, focus groups, in-depth interviews, key informant interviews, and other qualitative methods. Teams should be prepared to adjust project implementation if monitoring reveals that women, men, boys, and girls do not benefit equally or as expected from activities or if there are harmful effects on women, men, boys, or girls. Project teams are also encouraged to report on lessons learned on gender reported in project progress and completion reports, as well as to explore opportunities for more in-depth studies on the gendered impact of the projects. For example, mixed-method evaluations are typically more effective at capturing gender-related results such as changes in norms, attitudes, and behaviors resulting from women and girls’ economic empowerment.

The CIF Gender Team is available to support MDBs and country teams based on demand and to provide targeted technical support on gender equality and social inclusion issues, such as inputs to analytical products exploring gender gaps, assessment of gender results, and capacity building events. In addition, the team facilitates meetings of the CIF Gender Focal Points Working Group to discuss challenges and opportunities related to gender integration in REI and enable peer support.

Finally, REI recipient countries are encouraged to incorporate deeper dive analyses of gender and social inclusion issues as part of their multi-stakeholder review mechanism for investment plans conducted around the beginning, mid-term, and end of country investment plan implementation (see Section 4.1).

4.4 Modeling

The CIF Administrative Unit utilizes economic modeling tools, such as the Joint Impact Model (JIM),⁴⁸ Employment Factors, and the International Jobs and Economic Development Impacts (I-JEDI) model, to estimate the larger social and economic impacts of its investments. For energy investments, CIF mostly employs the JIM model, which yields estimations of the direct, indirect, and supply chain impacts of investments on jobs, as well as economic value addition from project construction, operation, and via the forward effects of additional power generated in the investee economies.

Further model enhancements led by CIF aim to enhance the granularity and accuracy of estimates and expand knowledge on distributive impacts and the quality of jobs created. They focus on the following:

- Direct and Backward Effects, i.e., improving the ex-ante estimation of direct and backward supply-chain and induced effects
- Forward Effects, i.e., improving estimates of power-enabling or forward effects
- Distributive Impacts, i.e., investigating opportunities to calculate distributive impacts

The work differentiates impacts related to *technology types* (i.e., onshore wind, offshore wind, solar PV, CSP, large hydro, small hydro, green hydrogen, biomass, ocean, storage, etc.), *the location of investments on the energy value chain* (i.e., generation vs. transmission vs. distribution), and *utility-scale vs. distributed applications* (i.e., grid, off-grid, mini-grid, rooftop solar, and other distributed solutions). It increasingly considers the treatment of life-of-project analyses and construction vs. operational phases of renewable energy investments.

The expansion of modeling foci and tools also explores metrics for health co-benefits (see Section 3.4), such as impacts from reduced atmospheric pollutants associated with fossil-fuel emissions, the quantification of avoided health burdens, and benefits from preventing premature mortality. These areas of modeling help strengthen the collective understanding of development outcomes linked to CIF's energy sector financing, while providing potential metrics for similar investment types (such as those expected in REI).

Based on demand, MDBs and recipient countries are encouraged to exploit modeling tools—including through coordination and collaboration with the CIF Administrative Unit—to enrich their estimations of total expected results from REI projects.

4.5 Sustainable Development Goals (SDGs)

The CIF Administrative Unit catalogs REI through the lens of the SDGs by mapping each REI project to the SDGs that relate to its objectives and expected outcomes. These include SDG 1: No Poverty, SDG 5: Gender Equality, SDG 7: Affordable and Clean Energy, SDG 8: Decent Work and Economic Growth, SDG 9: Industry, Innovation and Infrastructure, and SDG 13: Climate Action. This enables the program to estimate how much of its total financing is contributing toward these SDG objectives and, as implementation progresses, to triangulate achieved results with the related SDGs.

4.6 Narrative Reporting

MDB project implementation narrative reporting is an important aspect of the REI M&R System. In addition to the narrative reporting that complements quantitative data for some of the core indicators (e.g., REI Core Indicators 4 and 5), MDBs should submit their own recent supervision reports (redacted where necessary) to the CIF Administrative Unit alongside their annual submission of quantitative results data. The REI M&R System makes further use of MDB operational reporting in the CCH that MDBs already undertake as part of CIF's portfolio management function (i.e., qualitative reporting on implementation updates). These types of narrative data help strengthen interim monitoring at the portfolio level before longer-term outcomes and impacts can be realized.

REI recipient countries are encouraged to share narrative reporting at the investment plan level with the CIF Administrative Unit on an annual basis, or when feasible. This can include national reports and other documents related to REI that are already being produced by the country (which can be uploaded directly to the CCH), as well as direct text inputs to the CCH alongside recipient country reporting on country impact indicators.

4.7 Program Evaluation

Per the [CIF MEL Policy and Guidance](#) document, the program evaluation function is separate from and complementary to the REI M&R System. In general, the CIF-wide Evaluation and Learning (E&L) Initiative covers REI alongside other CIF programs. Three different modalities are expected to be used to conduct REI-related evaluations and studies: (i) Commissioning of independent evaluation firms and/or individuals, in line with CIF procurement policies; (ii) CIF Administrative Unit-led evaluative studies; and (iii) CIF partner-led studies, including from MDBs and recipient countries (CIF 2022, 10-13 and 19-21).

A REI program-level mid-term evaluation is expected to occur approximately five to seven years into the program's implementation, when deemed appropriate and subject to approval from REI's governing TFC. A program level, end-of-term evaluation is expected to occur approximately 8-12 years into the program's implementation, also when deemed appropriate and subject to approval from REI's governing Trust Fund Committee.

Results data and other information generated through the REI M&R System are expected to help build an evidence base that can be used for and as part of REI-related evaluations and studies.

4.8 Capacity Building and Learning

Support for REI M&R-related capacity building is available upon demand from the CIF Administrative Unit, in close coordination with MDBs. For instance, REI recipient countries can undertake the multi-stakeholder review mechanisms for investment plans (see Section 4.1) without any CIF Administrative Unit involvement, with limited CIF Administrative Unit involvement, or direct CIF guidance and capacity building support for investment plan review. This mechanism is also an opportunity for a broad range of local stakeholders to strengthen their awareness and build capacity in M&R for renewable energy integration, in addition to the country focal point and project implementation teams who are typically involved in the M&R process.

Additional analytics and learning activities related to REI results are expected to occur through a variety of channels over the implementation lifetime of the program. These might include aspects related to gender, stakeholder engagement, development impacts, just transition, thematic or sub-sectoral deep dives, project delivery case studies, or other activities. Such activities are selected on a demand-driven basis in close coordination with MDBs.



5. REPORTING DEFINITIONS AND GUIDELINES

5.1 Reporting Definitions

The REI M&R System sets targets and tracks results based on whole projects implemented. *As a result of REI* refers to the effects of interventions and activities funded by REI, as well as those leveraged by the co-financing reported in REI Core Indicator 6. Typically, this refers to singular projects or programs structured through blended finance (CIF + MDB + other potential co-finance). Results are not pro-rated according to the REI share of financing.

The expected *reporting closure date* is the date when the MDB expects final, end-line results data points to become available for all approved project indicators. This can vary per MDB and may occur at financial closure, around physical completion of project implementation, or upon submission of a project completion report. MDBs may have different terminology 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, restructured, or terminated.

The *reporting year* for CIF refers to project performance from January 1 to December 31 of the year before results are submitted. In general, REI results are submitted by March 15 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 REI M&R System provides flexibility for 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.

5.2 Baselines, Expected Results, and Achieved Results

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

Expected results refer to the intended results to be achieved by a project by its end-line and are interchangeably referred to as *targets*. The REI M&R System does not track annual or mid-term targets. Targets are proposed in project proposal documents at the time of CIF 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-benefit indicators. MDBs and the CIF Administrative Unit jointly track targets via the CCH. In most cases, the standard *target* year refers to the year of project closure.⁴⁹

Achieved results are submitted by MDBs via the CCH during the annual results reporting period. They are submitted by March 15 of each calendar year and should cover the preceding reporting year (i.e., January 1–December 31). Data from MDBs' project-level monitoring systems must be used to report actual, observed results, rather than projections or ex-ante estimates.

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

5.3 Data Entry and Validation

For each project, MDBs must fill in the CCH sections covering REI core indicators. MDBs should also report data for the relevant co-benefit indicator(s) and all other indicators agreed to be reported for the corresponding projects, as established at MDB Board approval. A list of these indicators will be pre-populated for each reporting period after they are identified and entered into the CCH system during the first year that a project reports.

If a project is co-funded by two MDBs, the MDBs must agree which one will report on the project to the CIF Administrative Unit. Each project can only have one report (to avoid double-counting 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 is 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 and validate the data before uploading the annual results to the CCH.

The CIF Administrative Unit is responsible for communicating the annual results reporting deadline to all MDBs during each reporting period. Results data should be submitted by March 15 of each calendar year for the results achieved during the previous year, i.e., the reporting year.

5.4 Outreach and Stakeholder Engagement

MDBs and REI project teams are encouraged to invite stakeholders in the REI recipient 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 the multi-stakeholder investment plan review mechanism, CIF-sponsored learning forums, in-country renewable energy events, or other platforms.

5.5 Timing of Results Achieved

Given the nature of REI projects and the fact that all nine of the REI core indicators are outcome indicators, significant progress may only occur once projects have reached a mature stage of implementation or are completed.



Projects no longer need to report annual results once they have reached completion and have submitted their final results in the CCH, along with a copy of the MDB's project completion report.⁵⁰ Cumulative achieved results will be deemed final at this time. For annual achieved results (e.g., annual GHG emissions reductions and annual electricity production) the CIF Administrative Unit will continue to use the final year's result as an annual proxy for future reporting years unless otherwise notified by MDBs.



6. NAVIGATING THE CIF COLLABORATION HUB

Detailed guidelines on accessing the CCH and its general usage are presented within the *CCH Results User Guide*, which is available upon request. MDB personnel responsible for results reporting tasks should take the following key steps.⁵¹

Step 1: Identifying Indicators and Entering Targets for REI Projects

Timeline: Upon MDB Board approval for both public and private sector projects; no later than the first results reporting period to follow the project's MDB Board approval.

Procedure: First, MDBs should provide the CIF M&R Team with the full project results framework, as approved in the project appraisal document (i.e., project design document)⁵² at MDB Board approval. Both MDB and CIF M&R teams should review the results framework for each REI project, consult, and agree on the full list of indicators that are applicable to the REI M&R System (see Section 2.2).

Once this has been completed, MDBs are responsible for entering the agreed-upon indicators and their targets into the CCH.

- Users should go to the “Project Portfolio” section of the CCH, identify the project, scroll over the far-left column, and click on “Update Project.”
- Users should next, identify the “Results” section in the task bar on the left-hand side and click on “Targets.” After clicking on the “Targets” link, the user is navigated to the “Targets” screen, as shown in Figure 5.

FIGURE 5. Entering Targets in the CCH

Targets at MDB Approval ^

Add new row: +

Indicator *	Breakdown *	Units *	Annual Target *
Tons of GHG emissions x ▾	NA x ▾	Tons of CO2 x ▾	<div style="border: 1px solid #ccc; height: 20px;"></div>
Lifetime Target *	Comments		
<div style="border: 1px solid #ccc; height: 20px;"></div>	<div style="border: 1px solid #ccc; height: 20px;"></div>		

- Users can add indicators per category (“Core Indicator,” “Co-Benefit Indicator,” “Optional Indicator,” “Project-Specific Indicator,” and “Energy Storage Indicator” as relevant) and target values on the screen. The “Core Indicator” section is first, followed by the other indicator categories. These indicators can be selected via the dropdown function or entered manually if the indicator identified is not already reflected in the dropdown list.
- Users can enter multiple targets by clicking the “+” sign on the right side of each indicator line.
- Each indicator’s required disaggregation populates in the CCH structure once the indicator is selected. Users should select the appropriate disaggregation and populate all targets/sub-targets accordingly.
- When prompted, users should provide additional text or information on the methodology used.
- Users can enter co-benefit indicators and targets in the lower section of the page, as well as indicators from the other categories.
- Users must click “Save” at the bottom of the page once all the targets have been added, and the data entered will be submitted in the system (see Figure 6).
- Co-financing data are automatically transferred from the “Financials” tab.

FIGURE 6. Targets Entered in the CCH

Targets at MDB Approval ^

Add new row: +

Indicator *	Breakdown *	Units *	Annual Target *
Tons of GHG emissions x ▾	NA x ▾	Tons of CO2 x ▾	106,541.00 🗑
Lifetime Target *	Comments		
2,130,820.00	<div style="border: 1px solid #ccc; height: 20px;"></div>		

Changing Targets: 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 submit the relevant documentation validating the rationale, methodology, and new target value(s). The numbers will be changed by the CCH administrator.

Step 2: Entering Achieved Results for REI Projects

Timeline: 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 reporting period from January 1 to December 31 of the previous calendar year, regardless of differing fiscal years among MDBs. Exact reporting deadlines are communicated by the CIF Administrative Unit and may shift over time (in line with the timing of CIF TFC meetings). At the time of publication, the annual reporting deadline for MDBs is March 15.

Procedure:

- Each year, MDBs should go to the “Project Portfolio” section of the CCH, identify the project to be reported on, and click on “Update Project.”
- Users should identify the “Results” section in the task bar on the left-hand side and click on “Achieved Results.” After clicking on the “Achieved Results” link under the Results section, the user is navigated to the “Achieved Results” screen as shown in Figure 7.

FIGURE 7. Entering Achieved Results in the CCH

Achieved Results ^				
Reporting Year	Indicator	Breakdown	Units	Annual Target
2023	Tons of GHG emissions reduced or avoided	NA	Tons of CO2	106,541.00
Lifetime Target	Annual Results	Cummulative Results	Comments	
2,130,820.00	<input type="text"/>	<input type="text"/>	<input type="text" value="Comments"/>	

Reporting Year	Indicator	Breakdown	Units	Lifetime Target
2023	Installed capacity as a result of CTF	Total	MW	38.00
Annual Results	Cummulative Results	Comments		
<input type="text" value=".."/>	<input type="text"/>	<input type="text" value="Comments"/>		

- The “Achieved Results” screen is available for data entry during the first part of each calendar year. At other times, the screen is in “View Only” mode.
- The core indicators and all related fields are automatically populated from the “Targets” screen to the “Achieved Results” screen.⁵³ Users are not able to enter new indicators on this screen.

- Users have the option to enter values in either the “Annual” or “Cumulative Results” field; the CCH will automatically calculate the values for the other field.⁵⁴
- Users should enter results for all fields per core indicator: both total and disaggregated achieved results.
- Each core indicator line has the option to add comments in case further explanation is required for an achieved result reported.
- Some indicators may prompt the user to enter additional information on the related qualitative results, methodology, or other related information.
- Users must click “Save” at the bottom of the page once all achieved results have been added, and the data entered will be submitted in the system.
- Users should follow the same procedure for reporting achieved results on co-benefit indicators, optional indicators, project-specific, and energy storage indicators.
- These indicators are also automatically populated based on the information entered in the “Targets” tab at MDB Board approval. Users only need to enter the achieved results values for the corresponding reporting year.
- Qualitative results or explanation must be provided for the selected co-benefit indicator(s) and can be provided for other indicators on an optional basis.
- Users must click “Save” after each round of entering new data or text in the CCH.


Changing Achieved Results: Previous years’ results cannot be modified after results have been reported unless a formal restructuring has occurred or a documented error has been identified. 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. In the case of a reporting error identified from a previous reporting year, the values are corrected during the reporting year when they have been identified.

Step 3: Uploading Documents

Procedure:

- The “Uploaded Documents” link on the left-hand side of the page navigates to the screen, as shown in Figure 8.

FIGURE 8. Uploaded Documents Screen in the CCH

Upload Documents		
Uploaded Documents		
Document name	Comments	Document Type
EER - Rapport de supervision PDM-HYDRO- mai 2020.docx		Progress / Supervision report

- During the first year of reporting, MDBs should upload the full project results framework.
- During subsequent reporting years, MDBs should upload the most recently available document(s) with key updates on the project's implementation status and results, such as implementation status/supervision reports, mid-term reviews, and implementation restructuring documents.
- Since this function is open-ended, MDBs also have the option to upload other relevant documents in this section (e.g., methodological notes, explanatory documents, results highlights and communications products, recent case studies, etc.)

During the final year of reporting, MDBs should upload the project completion report⁵⁵ and confirm with CIF that achieved results are final.⁵⁶ Once this has occurred, the MDB is no longer required to submit annual results reporting updates on that project.

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ENDNOTES

- 1 One exception relates to the deployment of energy storage systems. REI projects with energy storage components must report on energy rating and power rating, since energy storage is an important result area for CIF already standardized in the Global Energy Storage Program (GESP).
- 2 This toolkit does not cover all aspects reflected in the [REI IRF](#). Instead, it focuses on operationalizing the core monitoring and reporting functions of the integrated results management approach. Other evaluation, learning, and gender aspects are described in more detail in additional documents. They are cross-referenced throughout this toolkit to illustrate connections where relevant.
- 3 REI 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 REI investments.
- 4 Forthcoming at time of publication.
- 5 And all other CIF M&R systems for new programming areas (but not in CIF’s PPCR, FIP, CTF, SREP programs).
- 6 For more information on ESMAP, see: <https://www.esmap.org/>. For more information on RISE scores, see: <https://rise.esmap.org/>. For more information on MTF, see: https://www.esmap.org/mtf_multi-tier_framework_for_energy_access.
- 7 Based on alignment with CIF’s Global Energy Storage Program.
- 8 For more information on the World Bank’s Living Standards Measurement Study, see: <https://www.worldbank.org/en/programs/lsms>
- 9 In the form of the *REI Operational and Results Report*.
- 10 As MDBs’ respective information disclosure policies allow.
- 11 As MDBs’ respective information disclosure policies allow.
- 12 As MDBs’ respective information disclosure policies allow.
- 13 As MDBs’ respective information disclosure policies allow.
- 14 As outlined in the REI program design document, the primary focus of investments is to facilitate greater integration of VRE into grids. So, for example, the focus of any generation financed under the program would be to balance and/or stabilize the variability of VRE sources, rather than simply adding generation per se.
- 15 “Land” here might also refer to the geographical area covered by ecosystems. For example, in addition to land systems, CIF adaptation investments may relate to coastal and marine systems and other ecological contexts.
- 16 For example, over 20, 25, or 30 years.
- 17 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.
- 18 See <https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies>
- 19 “Baseline” here refers to the M&E sense of the term, i.e., the defined situation before a project is implemented. To avoid confusion, the term “reference scenario” is used to refer to the current and anticipated GHG emissions levels in the absence of a project (which is otherwise sometimes referred to as “baseline emissions” in the GHG accounting literature).
- 20 Projects should take into consideration both “reduced” GHG emissions based on the displacement of existing fossil fuel power plant generation as new renewable energy capacity

- comes online and “avoided” GHG emissions based on the preclusion of new fossil fuel power generation that would come online in the absence of REI-supported renewable energy generation.
- 21 CIF defers to MDBs’ own protocols in identifying and applying relevant emissions factors. In general, MDBs are encouraged to be as precise as possible based on the available data at country, regional, and international levels (as applicable).
- 22 Alternatively, this can be computed based on a longer-term, dynamic reference scenario covering the full economic lifespan of the REI-supported asset(s).
- 23 CIF is responsible for extrapolating future achieved results following project closure, or as agreed with the MDBs per project.
- 24 See <https://ghgprotocol.org/>
- 25 It is likely that projects will not be able to report additional achieved installed capacity toward the lifetime target beyond their closure date. However, in some cases, additional national/ grid-level studies, investment plan-level monitoring, or evaluations conducted beyond the scope of project-level M&R could provide this information. The lifetime target is nonetheless a useful proxy estimate for how much total installed capacity the interventions are expected to enable over longer periods of time (i.e., expected contribution, not attribution). It will not be used for accountability purposes.
- 26 Solar photovoltaic (PV) or concentrated solar power (CSP).
- 27 1,000 watts of electricity generated and delivered for one hour to the grid is equal to 1 kWh. 1,000 kilowatts of electricity generated and delivered for one hour to the grid is equal to 1 MWh. 1,000 MW of electricity generated and delivered for one hour to the grid is equal to 1 GWh.
- 28 CIF Administrative Unit will pay careful attention during the analysis of this indicator’s results not to simply aggregate all reported achieved values, since it is likely that projects will be employing different units and approaches to measuring this flexible indicator.
- 29 It is recognized that significant overlap may occur between grid services (i.e., functions/ activities) and improvements (i.e., infrastructure units, technologies, tangible assets). Often an improvement is intended to fulfill a specific function. REI Core Indicator 4 does not aim to draw a sharp distinction between grid services or improvements. Both dimensions are included to provide flexibility to allow for reporting on diverse project types.
- 30 And potentially enabling enhanced climate resilience of the grid to natural hazards.
- 31 CIF Administrative Unit will pay careful attention during the analysis of this indicator’s results not to simply aggregate all reported achieved values, since it is likely that projects will be employing different units and approaches to measuring this flexible indicator.
- 32 And thus, inherently cannot be aggregated.
- 33 Per the *Renewable Energy Integration Program Integrated Results Framework*. These optional indicators are situated at the outcome level as a corollary to the same results statement served by the core indicator.
- 34 See <https://mtfenergyaccess.esmap.org/methodology/electricity>
- 35 As opposed to the number of women and men, which are universal units of measurements.
- 36 It should be noted that REI Core Indicator 7 does not directly measure households and, therefore, cannot disaggregate by the number of women-headed households. However, MDBs are encouraged to provide this information whenever such household-level data are available before being converted to the number of women and men.
- 37 See <https://population.un.org/household/#/countries/840>
- 38 Per the *REI IRF*. This optional indicator is situated at the outcome level as a corollary to the same results statement served by the core indicator.
- 39 It is recognized that not every REI project may aim to reduce energy system costs. Those projects without this explicit aim are not expected to contribute reporting on this indicator.

- 40 The official indicator text might be interpreted as either “Reduced [total energy system] costs” or as “Reduced total [energy system] costs.” This definition adopts the latter.
- 41 Per the [REI IRF](#). This optional indicator is situated at the outcome level as a corollary to the same results statement served by the core indicator.
- 42 See <https://justtransitioninitiative.org/>
- 43 Forthcoming at the time of publication.
- 44 As guided by REI’s *Maximizing Transformational Impact* evaluation and learning toolkit.
- 45 This is very similar to the methodology used for GHG accounting.
- 46 Although climate resilience is expected to be an integral part of CIF’s work across programs, some adaptation relevant indicators may be considered as co-benefits *in situ*.
- 47 Quantitative data might be drawn from national demographic and household surveys, administrative records, or collected as primary data using a project’s own M&E system.
- 48 See <https://www.jointimpactmodel.org/>
- 49 Some indicators also have lifetime targets that extend beyond the project closure date. Investment plans may also have target years that go beyond the implementation period of projects.
- 50 As MDB’s informational disclosure policies allow
- 51 Development of the CCH module and guidance for REI recipient country focal points is forthcoming.
- 52 Terminology for this document varies across MDBs.
- 53 At the time of publication, it has not yet been determined whether core indicators and other REI indicator categories will have separate sub-headings in the “Results” section for entering achieved results.
- 54 This function provides flexibility to MDBs to report achieved values based on the latest validated data they have available through their own M&R systems. In some cases, a validated value may be cumulative, and in other cases, it may be annual. In the case of a discrepancy, validated cumulative values should take priority over annual values. The CCH will calculate the annualized value as a proxy, and the discrepancy will be corrected as of the following reporting year.
- 55 As MDBs’ respective information disclosure policies allow.
- 56 From a results perspective, which may not be the same timing as the project’s financial closure date.

THE CLIMATE INVESTMENT FUNDS

The Climate Investment Funds (CIF) is one of the largest multilateral climate funds in the world. It was established in 2008 to mobilize finance for low-carbon, climate-resilient development at scale in developing countries. 15 contributor countries have pledged over US\$11 billion to the funds. To date CIF committed capital has mobilized more than \$64 billion in additional financing, particularly from the private sector, over 70 countries. CIF's large-scale, low-cost, long-term financing lowers the risk and cost of climate financing. It tests new business models, builds track records in unproven markets, and boosts investor confidence to unlock additional sources of finance. Recognizing the urgency of CIF's mission, the G7 confirmed its commitment to provide up to \$2 billion in additional resources for CIF in 2021.



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