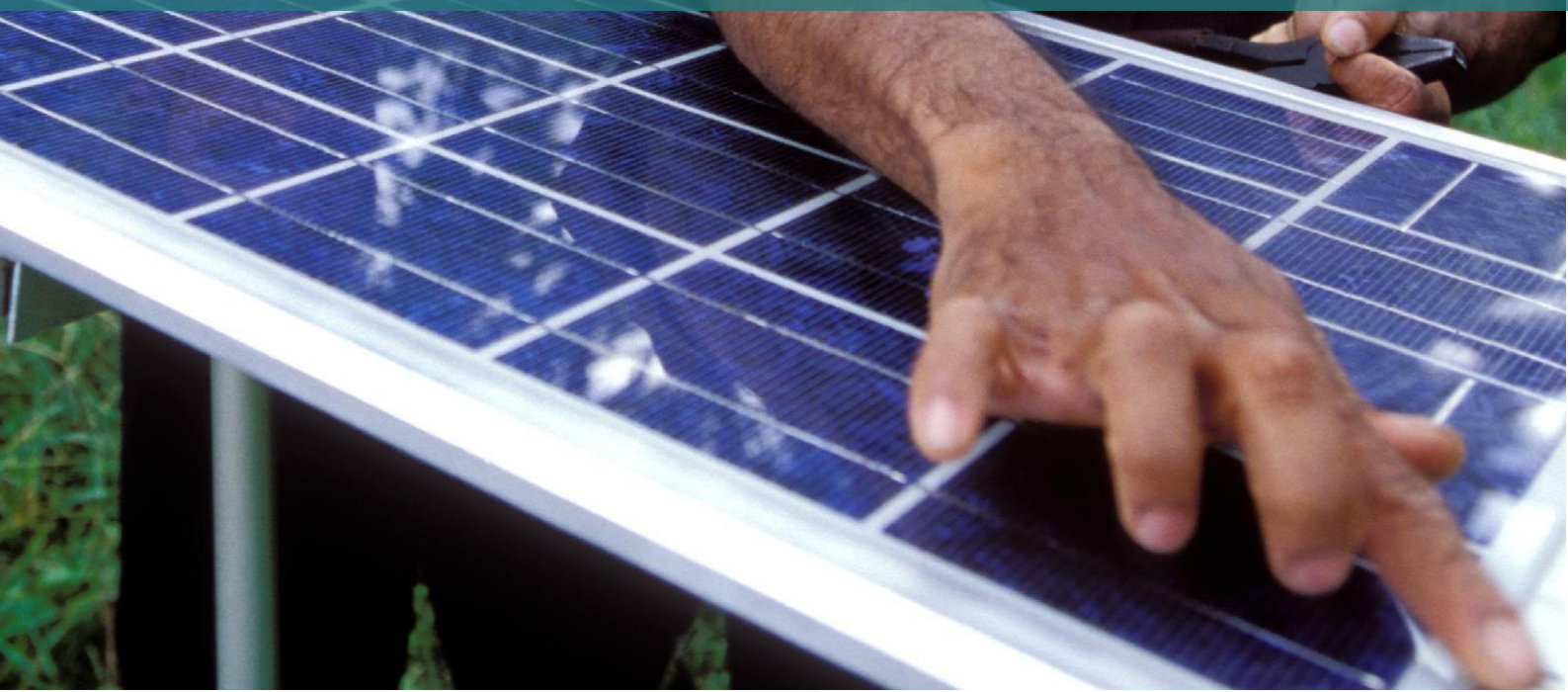
UK Government

Installed capacity of clean energy as a result of International Climate Finance (MW)

ICF KPI 7 Methodology Note

February 2023



Contents

Photograph from the World Bank Photo Collection, Sri Lanka.

Acronyms

CCS	Carbon Capture and Storage
CSP	Concentrating Solar Power
Defra	Department for Environment, Farming and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
FCDO	Foreign, Commonwealth & Development Office
ICF	International Climate Finance
IEA	International Energy Agency
IRENA	International Renewable Energy Agency
KPI	Key Performance Indicator
MW	Megawatt
MWe	Megawatt (output of electrical power)
MWt	Megawatt (output of thermal power)
PV	Photovoltaic
RE	Renewable Energy
SDGs	Sustainable Development Goals
tCO_2e	Tonnes of Carbon Dioxide Equivalent

Installed capacity of clean energy as a result of ICF (MW)

Purpose of the document

International Climate Finance (ICF) is Official Development Assistance (ODA) from the UK to support developing countries to reduce poverty and respond to the causes and impacts of climate change. These investments help developing countries to:

- adapt and build resilience to the current and future effects of climate change
- pursue low-carbon economic growth and development
- protect, restore and sustainably manage nature
- accelerate the clean energy transition**.**

ICF is spent by the Foreign, Commonwealth and Development Office (FCDO), the Department for Environment, Food and Rural Affairs (Defra), and the Department for Energy Security and Net Zero (DESNZ). This methodology note explains how to calculate one of the key performance indicators (KPI) that we use to measure the achievements of UK ICF. The intended audience is ICF programme teams, results leads, climate analysts and our programme implementing partners. Visit **www.gov.uk/guidance/international-climate-finance** to learn more about UK International Climate Finance, its results and read case studies.

Rationale

ICF KPI 7 is an output indicator that measures the increase in clean energy 'installed capacity' from ICF programmes. Low or zero carbon energy generation can partially or fully displace fossil fuel energy generation, depending on the type and scale of technology used.

This indicator demonstrates progress towards a transformed clean energy supply and monitors the 'installed' or full-load capacity of clean energy, which is different from monitoring energy generation. To distinguish between high-quality and low-quality instances of clean energy technology, an assessment should be made on the actual clean energy generated from programmes.

This indictor directly relates to Sustainable Development Goal 7.2, where the SDG framework refers to renewable energy rather than 'clean energy': By 2030, increase substantially the share of renewable energy [not electricity] in the global energy mix. Therefore, ICF KPI 7 data could readily be converted to 'SDG 7 contribution' data, with minor checking and corrections for any differences in definition/coverage between clean energy and renewable energy.

Other major players (particularly the Climate Investment Funds), as well as national governments and multilaterals (notably IRENA), already regularly report on installed clean capacity, and increases in renewable energy installations.

Summary table

Table 1: ICF KPI 7 summary table

Units	Megawatt (MW)
Headline data to be reported	Installed capacity of clean energy (MW) installed by ICF programmes in current year
Disaggregations	• Technology type • On-grid vs. Off-grid • Geography • Country (where available)
Revision history	February 2023: • The addition of a country disaggregation and additional guidance on reporting disaggregation summaries • Additional guidance on the application of adjustment factors for additionality and attribution • Formatting improvements September 2018: • Step-by-step methodological guidance
Timing	ICF programme teams will be commissioned to report ICF results in spring, according to department-specific processes. Report results for the most recent complete programming year. If reporting lags mean that results are only available more than a year after they were delivered, enter them under the relevant earlier year.
Links across the ICF KPI portfolio	ICF KPI 7 has strong links with other ICF KPIs: • ICF KPIs 11 and 12 monitor public and private finance which can be used to install clean energy capacity (ICF KPI 7). • ICF KPI 7 contributes to ICF KPI 6 (tCO2e). See ICF KPI 6 Methodology Note for details of how to convert ICF KPI 7 results into tCO2e. • ICF KPI 7 is linked with ICF KPI 2, which counts the number of individual and social institution beneficiaries from improved access to clean energy. • ICF KPI 7 is most useful when it is able to demonstrate transformational potential, linking to ICF KPI 15. Most 'clean energy' projects are more about demonstration benefits and linking to policy or market transformation and

	may not necessarily deliver the lowest cost or largest volume of MW.

Technical definition

This indicator measures total clean energy 'installed capacity' (in MW) from ICF programmes, including installed capacity from on-grid and off-grid networks. The key definitions of this ICF KPI follow:

- 'Clean energy': low and zero carbon energy generation sources, including but not limited to the following technologies: wind power, solar photovoltaic (PV), concentrating solar power (CSP), marine energy (including wave energy and tidal energy), hydropower, 'clean coal' using carbon capture and storage (CCS), second generation biofuels[1], clean cookstoves, and biomass boilers and kilns for process heating/drying. It does not include nuclear energy.
- 'Installed capacity (MW)': the rated power capacity of the clean energy technology when operational – in Megawatts (MW), either in electrical power (MWe) or thermal power (MWt). Power installations must be operational (e.g. technology is installed, and clean energy is being generated) for measurements to be included.
- 'On-grid': clean energy generation projects that are feeding into a national or regional grid. These projects will typically be utility-scale, in the order of tens or hundreds of MWs.
- 'Off-Grid': clean energy generation technologies that do not feed into a national grid but may feed into localised energy grids if that localised energy grid is not connected to the national grid. Examples may include a district heat network within an industrial estate, or solar PV projects with battery storage serving a small number of buildings (i.e. mini-grids or micro-grids).

[1] Second-generation biofuels, also known as advanced biofuels, are fuels that can be manufactured from various types of non-food biomass (plant materials and animal waste used especially as a source of fuel).

Methodological summary

The diagram below shows a step-by-step guide on how to report on ICF KPI 7. These steps are explained further in the **Methodology** section immediately below.

Figure 1: ICF KPI 7 Methodological Summary

ICF KPI 7: Clean energy installed capacity (MW) from ICF support
1. Check intervention fits within definition of 'clean energy' and classify whether intervention is on-grid or off-grid. 2. Obtain data from programme monitoring. 3. Where possible, use a third party to verify the capacity installed. 4. If necessary, adjust for additionality. 5. For jointly funded programmes, calculate the UK attribution of results in proportion to funding share. 6. Report disaggregated results.

Methodology

1. Check intervention fits within definition of 'clean energy' and classify whether intervention is on-grid or off-grid.

Definitions of clean energy and on-grid/off-grid are can be found in the '**Technical Definition**' and '**Methodological Summary**' sections above.

2. Obtain data from programme monitoring.

Obtain information on the installed capacity of clean energy (in MW) from the Delivery Partner (usually verified by a certified energy expert). Obtain information on whether this falls in urban or rural areas if not already known. For more information on disaggregations refer to **Annex 2: Data disaggregation**.

3. Where possible, use a third party to verify capacity installed.

As the monitoring and measurement of clean energy installed capacity can sometimes be complex, it is beneficial to use third-party verification. IEA country data can also be used to assess whether the share of clean energy installed is the right proportion.

4. If necessary, adjust for additionality.

Results are additional if they are beyond the results that would have occurred in the absence of the ICF-supported intervention (known as a business-as-usual counterfactual). To compare results with the counterfactual and account for additionality[2], the projected level of installed capacity of clean energy without the ICF intervention should be subtracted from the total. If you are not able to estimate what the counterfactual is, you can use an 'adjustment factor', which should be high (e.g. 95%) if you are confident your results are additional, and your data quality is good. A lower 'adjustment factor' (e.g. 50%) should be used if you have a lot of uncertainty about the quality of data, and additionality of results, for example if there are other partners in the area undertaking similar activities. See supplementary guidance on additionality and attribution.

5. **For jointly funded programmes, calculate the UK attribution of results in proportion to funding share**.

If the UK Government is the sole investor in a programme, the full amount of results is attributed to the UK.

If the UK Government is one donor among a number of development partners providing funding for a programme, claim results only in proportion to the UK donor share of public co-financing.

In instances where an ICF programme leverages public or private finance that helps to deliver programme results, the share of results associated with any leveraged finance should be attributed to the ICF. Count the leveraged public finance under ICF KPI 11 and the leveraged private finance under ICF KPI 12.

Some funds have multiple investment levels which allow investment both at the fund level and at the individual project level. This means that the initial UK investment in the overall fund blends with project-specific sources of finance further down the delivery chain. For these programmes, attribute results to the UK project by project, then sum these to give the total UK results. Where insufficient information exists on project-level finance, UK attribution can be calculated at the fund level.

See supplementary guidance on additionality and attribution.

6. Report disaggregated results.

Where possible, disaggregate according to the following parameters:

- Technology type (e.g. wind energy)
- On-Grid vs. Off-Grid
- Geography
- Country

For more information on disaggregations refer to **Annex 2: Data disaggregation**.

[2] See Annex 3 for definition of counterfactual and additionality.

Worked example

Worked example 1

Based on a fictitious programme where UK ICF provided 50% of the finance for two large wind farms in Lake Turkana, in collaboration with the Danish Government, as part of a clean energy programme in Kenya. The project is expected to contribute to the regional grid.

1. **Check intervention fits within definition of 'clean energy' and classify whether intervention is on-grid or off-grid:** This wind farm fits within the definition of 'clean energy'. It is classified as on-grid (definitions found in the '**Technical Definition**').

2. **Obtain data from programme monitoring:** Data on installed capacity of clean energy (in MW) obtained from a local certified energy expert. This project is Rural and in Kenya, as all project activities occur around the rural areas of Lake Turkana.

3. **Where possible use a third-party to verify capacity installed:** A certified energy & emissions evaluator was used to verify the capacity installed.

4. **If necessary, adjust for additionality**: To determine the installed capacity of this Denmark/UK ICF funded programme, the programme's monitoring team requested information on the wind farm's size from the Delivery Partner - the Government-owned energy utility. It is 100MW. However, the government-owned energy utility was already considering installation of wind turbines, and had approved investment for 30MW capacity, with final siting to be approved. The Government's original target of 30 MW is taken as the business-as-usual counterfactual. Subtract the 30MW installed capacity of clean energy without the intervention from the ICF target (assuming the host government's stated willingness to invest prior to UK ICF engagement): 100MW − 30 MW = 70MW.

5. **For jointly funded programmes, calculate the UK attribution of results in proportion to funding share:** As UK ICF funded 50% of the wind farm, 35MW was attributed to the UK.

6. **Report disaggregated results**: The data was disaggregated as follows:
   - Installed Capacity: 35MW
   - Technology: Wind
   - On-Grid vs. Off-Grid: On-grid
   - Rural vs Urban: Rural
   - Country: Kenya

Data quality

Some data will be available directly from programmes, for example from project-level monitoring. It is the responsibility of the recipients of ICF funding, or a third-party auditing entity, to collect data. This information will need to be kept up to date by liaising with programme managers.

IEA World Energy Outlook[3] data could be used to assess whether the share of clean energy generated is in the right proportion. For example, if we estimate that the new energy generation is 10% of the country's energy, we would expect this to match up with 10% of the IEA's energy generation figure. Country offices are advised to comment on the source of the underlying IEA data (if known), and its reliability.

Portfolio ICF results are published annually in autumn in **voluntary compliance with the UK statistics authority code of practice for official statistics**. This means that we make efforts to maximise the trustworthiness, quality, and value of the statistics.

To support ICF data quality, please:

1. Review ICF KPI results provided by programme partners, ensuring that methodologies have been adhered to, and calculations are documented and correct.
2. Ask a suitable analyst or climate adviser to quality assure ICF results before submission.
3. Submit ICF results following the instructions specific to your department. Include supporting documentation of calculations and any concerns about data quality.
4. A revision to historical results may be needed if programme monitoring systems or methodologies are improved, or historical data errors are found. Please update results for earlier years as necessary and make a note in the return. ICF results are reported cumulatively, therefore it is important to make these corrections.

Questions about results reporting can be discussed with central ICF analysts, who undertake a further stage of quality assurance before publication.

[3] IEA World Energy Outlook data

Annex 1: Further worked examples

Worked example 2

Based on a fictitious programme where UK ICF provided 40% of the finance for two Concentrated Solar Power (CSP) plants, one in India and one in China, in collaboration with the German government.

1. **Check intervention fits within definition of 'clean energy' and classify whether intervention is on-grid or off-grid:** This CSP project fits within the definition of 'clean energy'. Energy generated is expected to contribute to the existing local area grid, so the project is classified as on-grid (definitions found in the '**Technical Definition**').

2. **Obtain data from programme monitoring**: Data on installed capacity of clean energy (in MW) was obtained from a local certified energy expert. This project is rural in India and China, as all project activities in both target countries occurred in rural areas.

3. **Where possible, use a third party**: A certified energy & emissions evaluator was used to verify the capacity installed.

4. **If necessary, adjust for additionality**: To determine the installed capacity of the programme, the monitoring team requested information on the CSP plant's size from the project implementers: 75MW CSP plant + 50MW CSP plant = 125MW. Subtracting the counterfactual data of 25MW installed capacity of clean energy without the intervention (assumed from host government's stated willingness to invest prior to UK ICF engagement). 125MW − 25 MW = 100MW.

5. **For jointly funded programmes, calculate the UK attribution of results in proportion to funding share**: As UK ICF funded 40% of the wind farm, 40MW was attributed to the UK.

6. **Report disaggregated results**: The data was disaggregated as follows:
   - Installed capacity: 40MW
   - Technology: Concentrated Solar Power
   - On-Grid vs. Off-Grid: On-grid
   - Rural vs Urban: Rural
   - Country/Countries: India and China

Annex 2: Data disaggregation

- Technology Type
- On-Grid vs. Off-Grid
- Geography
- Country

Technology type

Disaggregate by technology type:

Technology Type	**Definition[4]**
Wind power	Energy derived from wind.
Solar photovoltaic (PV)	The technology of converting light energy directly into electricity by mobilizing electrons in solid state devices. The specially prepared thin sheet semiconductors are called PV cells.
Concentrated solar power (CSP)	Systems which use either lenses or mirrors to capture large amounts of solar energy and focus it down to a smaller region of space. The higher temperatures produced can operate a thermal steam turbine or be used in high-temperature industrial processes.
Mixed solar	A mix of Solar PV and Solar CSP.
Marine energy (including wave and tidal energy)	Energy obtained from the ocean via waves, tidal ranges, tidal and ocean currents, and thermal and saline gradients.
Hydropower	Energy derived from flowing water.
Carbon capture and storage (CCS)	CO2 from industrial and energy-related sources is separated, compressed, and transported to a storage location for long-term isolation from the atmosphere.
Biofuels	Any liquid, gaseous or solid fuel produced from biomass, for example, soybean oil, alcohol from fermented sugar, black liquor from the paper manufacturing process, wood as fuel, etc.
Clean cookstoves	More efficient cookstoves that materially improve energy efficiency.

[4] Full definitions are available from: IPCC Renewable Energy Sources and Climate Change Mitigation

Biomass	Combustion of material of biological origin (plants or animal matter), excluding material embedded in geological formations and transformed to fossil fuels or peat.
Process heating/drying	Process heating refers to the application of heat during industrial processes.
Multiple/Mixed Renewable Energy	Multiple or a mix of technologies.
Other	Renewable energy technologies which are not listed above.

On-Grid vs. Off-Grid

Disaggregate by grid connectivity:

- 'On-grid': clean energy generation projects that are feeding into a national or regional grid. These projects will typically be utility-scale, in the order of tens or hundreds of MWs.
- 'Off-Grid': clean energy generation technologies that do not feed into a national grid but may feed into localised energy grids if that localised energy grid is not connected to the national grid. Examples may include a district heat network within an industrial estate, or solar PV projects with battery storage serving a small number of buildings (i.e. mini-grids or micro-grids).

Geography

Results should be disaggregated by geography wherever possible, using two categories: urban and rural. In the absence of internationally agreed definitions of urban and rural, follow the definitions set by the national statistics office in the country the programme is operating.

Country

For the purposes of this indicator, a country is a legal entity that is recognised by the UK Government[5].

[5] A full list of officially recognised countries can be found here: Country Names.csv

Annex 3: Definitions

Additionality*:* Results are additional if they are beyond the results that would have occurred in the absence of the ICF-supported intervention under a 'business as usual' counterfactual (see definition below and supplementary guidance on additionality and attribution).

Attribution*:* Attribution refers to allocating responsibility for results among all actors that have played a causal role in their delivery. This is commonly done based on share of financial contributions. However, there are situations where greater nuance is needed, as with ICF KPI 11 and ICF KPI 12 on public and private finance mobilised, where a broader range of factors is considered. See supplementary guidance on additionality and attribution.

Causality: Causality refers to the assessment that one or more development actors bear responsibility for results, because of ICF-funded interventions.

Counterfactual: The situation one might expect to have prevailed at the point in time in which a programme is providing results, under different conditions. Commonly, this is used to refer to a counterfactual case that would have been observed if the ICF-supported intervention had not taken place.