



Deliverable 6.6

Data Management Plan



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101000132. This document only reflects the authors' views and EASME is not responsible for any use that may be made of the information it contains.



Multiple Impacts Calculation Tool

Abstract

The Data Management Plan (DMP) outlines how data are to be handled both during the project, and after the MICAT project is completed. The document describes what kind of data will be collected, and processed, and which methodology and standards will be applied during data collection and handling. Furthermore, the DMP includes information on how data aims to be findable, accessible, interoperable, and reused (FAIR data). It also defines procedures in relation to the General Data Protection Regulation (GDPR).

Lead partner for deliverable	ICLEI and WISE Europa
Document type	ORDP
Due date of deliverable	31.03.2021
Actual submission date	31.03.2021
Dissemination level	Public (PU)
Author(s)	Allison Wildman, Olga Krajewska, Niklas Mischkowski, Marcelo Lampkowski (ICLEI), Aleksandra Ziębka, Oliwia Gissel (WISE)
Reviewers	Jen Heemann (IECCP), Katharina Wohlfarth (Fraunhofer ISI)
Contributors	All partners

Cite as: Wildman, A; Mischkowski, N.; Lampkowski, M.; Krajewska, O.; Ziębka, A. and Gissel, O. (2021). Data management plan. MICAT - Multiple Impacts Calculation Tool (Deliverable 6.6)

Summary of MICAT

The Horizon 2020 Research and Innovation project, "MICAT – Multiple Impacts Calculation Tool", aims to develop a comprehensive approach and user-friendly online tool to estimate the multiple impacts or multiple benefits of energy efficiency measures. There is still significant potential to improve energy efficiency in all sectors and levels where efficiency measures can be applied. Facing the often cited “energy efficiency gap”, even the profitable potential is not fully exploited. Highlighting and quantifying the additional values of energy efficiency measures and investments considering the multiple non-energy impacts (economic, social and environmental impacts) could help close this gap and facilitate energy-relevant decisions and policy-making.

The goal of the MICAT project is to develop a comprehensive approach to estimate Multiple Impacts of Energy Efficiency. MICAT will enable analyses at three different governance levels (local, national and EU) to address a broad target group and interested actors. This allows simplified analyses to be carried out on the basis of different data and policy scenarios in order to compare and assess the relevance of the Multiple Impacts. The project will establish a sound scientific empirical basis for monitoring Multiple Impacts and provide a publicly available and user-friendly online tool (MICATool), which shall be developed in a co-creational manner with the respective governance levels. The national and local cases for monitoring Multiple Impacts of Energy Efficiency will be developed further in a broad stakeholder and dissemination approach to set a standard for future reporting on Multiple Impacts of Energy Efficiency.

Summary of MICAT's objectives

The main objectives of the MICAT project link science, policy and stakeholders in the field of Multiple Impacts of EE and can be formulated as follows. MICAT shall:

- improve scientific knowledge and provide a set of methods to analyse Multiple Impacts of energy efficiency measures;
- develop a comprehensive approach and tool for estimating Multiple Impacts of Energy Efficiency;
- allow facilitated assessments of core policy scenarios and specific policies at EU, national and local levels estimating the outcomes of Multiple Impacts;

- establish a culture of underlining the importance and assessment of Multiple Impacts in connection with climate action scenario approaches and policy evaluations on EU, national and local level.

MICAT Consortium Partners

Organisation	Type	Country
Fraunhofer ISI	Research institute	Germany
IIECP	Research institute	The Netherlands
Wuppertal Institute for Climate, Environment and Energy	Research institute	Germany
WiseEuropa	Think-tank	Poland
E3M	Private consulting company	Greece
IIASA	Research institute	Austria
ICLEI European Secretariat	Association of local governments in Europe	Germany

Table of Contents

1.	Introduction and overview.....	1
1.1	General overview of data collection activities in MICAT.....	1
1.2	Purpose and scope of this document.....	1
2.	Data summary.....	2
2.1	Purpose of data collection.....	3
2.2	Types and formats of collected/generated data.....	9
2.3	Size of data.....	11
2.4	Data utility.....	12
3.	Fair data.....	12
3.1	Making data findable, including provisions for metadata.....	12
3.2	Making data openly accessible.....	13
3.3	Making data interoperable.....	14
3.4	Increase data reuse (through clarifying licenses).....	14
4.	Allocation of resources.....	15
5.	Data security.....	15
6.	Ethical aspects.....	16
7.	ANNEX 1 - Information Sheet and Consent form.....	18

1. Introduction and overview

1.1 General overview of data collection activities in MICAT

The MICAT project aims to develop a comprehensive approach to estimate Multiple Impacts of Energy Efficiency (MI) by providing a publicly available, easy to use and scientifically sound online tool (MICATool), to enable holistic analyses of MI at the European, national and local level. It builds on the work of previous projects with a comparable scope of MI: COMBI and ODYSSEE-MURE's MB:EE.

The online tool developed in MICAT will go beyond the approaches of these two projects by combining their findings into one tool that covers an even wider range of MI to also cover both ex-ante and ex-post calculations. It will also take advantage of other related specialised modelling, like GAINS (IIASA) and PRIMES (e3m), and the inputs from partners. Furthermore, MICAT will carry out robust analyses based on different policy scenarios in order to compare and assess the relevance of the MI at the three governance levels (EU, national, local). A meaningful, repeated involvement of stakeholders at different stages of the tool's development and on each of the three levels shall ensure the quality as well as the transferability and applicability of the tool across the EU. This may establish the MICATool as a semi-standard tool for evaluating energy efficiency policies with respect to their non-energy impacts.

1.2 Purpose and scope of this document

The Data Management Plan (DMP) provides a comprehensive overview of all data types collected in MICAT, including mapping data collection activities in different WPs (Section 2). Section 3 of this document is dedicated to the principles of FAIR data; that is, how data aims to be findable, accessible, interoperable, and reused in order to conform to the Open Research Data Pilot (ORDP). The ORDP aims to improve and maximise access to and re-use of research data generated by Horizon 2020 projects and takes into account the need to balance openness and protection of scientific information, commercialisation and Intellectual Property Rights (IPR), privacy concerns, security as well as data management and preservation questions. Section 4 outlines the costs and responsibilities associated with

making data FAIR. Section 5 addresses data security issues. Finally, Section 6 describes ethical standards and GDPR procedures involving the collected research data.

Future revisions of the DMP will be undertaken during the course of the project in case of significant changes.

2. Data summary

The results to be obtained within the MICAT project rely on efficient data collection from several sources, which allow us to assess the relevance of the Multiple Impacts of Energy Efficiency. Specifically, the MICAT team will collect and/or generate both quantitative and qualitative data that will be used to:

- compare and assess the relevance of the Multiple Impacts
- set a sound scientific empirical basis for monitoring Multiple Impacts
- provide a publicly available and easy to use online tool (MICATool)
- set a standard for future reporting on Multiple Impacts of Energy Efficiency

To accomplish this, the MICAT project will rely on the following types of data:

- data from the previous projects with a comparable scope of Multiple Impacts (e.g., COMBI, ODYSSEE-MURE)
- Micro data from pan-European household surveys (EU-SILC and HBS)
- related specialised modelling (e.g., GAINS and PRIMES)
- several key national (e.g., NECP) and EU scenarios, as well as the customised scenarios on a local level
- Workshops and training sessions (WP5)
- Survey (WP5)
- Stakeholder mapping (WP6)

2.1 Purpose of data collection

To meet the objectives required in the MICAT project, different data will have to be collected and processed. This includes especially data needed to assess the indicators representing the multiple impacts of energy efficiency on each governance level, and personal data from stakeholders. MICAT will not collect and process any special category of personal data¹.

Specifically, the data collection will take place in the following activities:

- 1.** Data gathering for the framework and assessment of MI of EE (WP2 and WP3)
 - Data taken from previous work on COMBI/ MB:EE
 - Data from different model families like PRIMES at European level, modelling at national level for recent National Energy and Climate Plans (NECPs), regional or local models
 - Data from policy specific evaluations on local, national and European levels
 - Data from pan-European household surveys (EU-SILC and HBS)
- 2.** Data and expert input derived from workshops and training sessions (EU, national, local level) (WP5)
- 3.** Core stakeholder survey data (WP 5)
- 4.** Stakeholder data for communication and dissemination purposes (WP6)

¹ According to Art. 9 of the GDPR, special categories of personal data include data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation.

In the following section, data collection points and their purpose are listed and briefly described for each WP.

WP1: Project Management

WP1 encompasses the general management activities conducted to guarantee that the project meets its time plan, budget and quality requirements. This also involves:

- Monitoring that agreements of the DMP are met
- Quality control and progress monitoring
- Monitoring the compliance with all 'ethics requirements'

WP2: Framework for the Assessment of Multiple Impacts of EE

WP2 develops the conceptual framework for the assessment of Multiple Impacts of EE. It builds closely on previous work on literature research, impact modelling and quantification tool conceptualisation done in the two preceding H2020 projects COMBI and ODYSSEE-MURE (MB:EE), synthesising knowledge and drawing on methodological approaches.

WP3: Assessment of Multiple Impacts of EE

In this work package, data from scenario runs (top-down) and policy evaluations (bottom-up), based on various models, will serve as input for quantifying the Multiple Impacts of EE. Data from different model families like PRIMES at European level, modelling at national level for recent National Energy and Climate Plans (NECPs), regional or local models will be used to define input data for the analysis of Multiple Impacts in the framework developed in WP2.

We briefly discuss here the data sources which we will focus upon at the three different governance levels:

At **the EU level**, the focus will be on scenarios provided by the PRIMES model built and operated by the project partner e3m. The model is run for each Member State (with the whole EU as an aggregate) and provides details on sectors, fuels, and end-uses as required

for a full analysis of MI. In addition, the model is already well linked with the important GAINS model used in WP2 to improve the empirical basis of a number of indicators.

Finally, the model is also capable of providing details on a number of important policies at the European level, in order to allow for bottom-up analysis of MI. The most recently published projections from this model, by Member State, date from 2016. However, the team from e3m is currently working on updates of these scenarios and there could be the opportunity to carry out the MI analysis on the most recent scenarios for PRIMES to be published in 2020 or 2021 and discuss in such a manner directly with the European Commission whether the present work could support this analysis and publication (see WP5).

At the **national level**, the focus is on scenarios and policy analyses in relation to National Energy and Climate Plans in three countries (Germany, Poland, Italy).

Note that PRIMES provides input data at national level (see above). However, for the MICAT country case studies, the focus will be on the models used by national stakeholders at the policy level in order to interact as closely as possible with them on their national approaches and national models, and how MI can be evaluated in this context (see WP5). The national context for each participating MS is characterized as such:

- In **Germany**, the focus will be on scenarios and policy evaluations provided by PROGNOSES AG for the German Ministry of Economic Affairs BMWi. Fraunhofer ISI contributes to these national evaluations. This detailed data will be available through subcontracting with PROGNOSES (Germany).
- In **Poland**, the focus will be on scenarios and policy evaluations. This detailed data will be available through subcontracting with the Energy Market Agency (ARE).
- In **Italy**, the focus will be on scenarios and policy evaluations. This detailed data will be available through subcontracting with Ricerca Sistema Energetico (RSE).

At the **local level**, MICAT project partners will implement a process to identify suitable municipalities as “MICATool Pilot Cities”, who express interest in the approach and its use at local level, and who can provide a reasonable amount of data on local scenarios/policies

(see WP5). At the time of the first DMP submission (March 2021), the Pilot Cities have been selected through an Open Call for Services with municipalities in Spain and Estonia. A fourth municipality in The Netherlands will also participate in the project at the local level, but not as a MICATool Pilot City.

WP4: Tool development and validation

The MICATool, for which the frontend and backend are developed in WP4, will be published on the project's website (<https://www.micat-project.eu>). Data produced in WP2 and WP3 will be stored in several databases, which form the foundation of the online tool. For this database, the aim is to use open source/FOSS technologies, if these are deemed particularly suitable.

A validation process (Task 4.3) is in place to ensure the highest possible methodological quality of the tool and to further improve the user experience. This process will run twice during the project duration (M20 and M25) and involves internal and external experts, so that a wide range of feedback can be incorporated. The General Data Protection Regulation (GDPR) privacy rules will be respected in the procedure of interaction with external experts. Their agreement will be confirmed with them from the project start with personal emails or phone calls.

WP5: Engagement of stakeholders for customization of policy assessments

In WP5, core stakeholders from the three governance levels (EU, national and local) will engage in regular exchanges to develop and test the MICATool in a co-creational manner. Task 5.3 will be implemented in three steps for each governance level, accompanied by interactive (physical or online) workshops.

Step 1: online workshop² - Orientation and set-up of the tool. The data to be analysed are defined in Task 3.1, based on the governance levels.

- **EU level:** one workshop in Brussels, as well as multiple interviews and conversations with stakeholders.

² Originally envisioned as an in situ workshop, but modified in response to the current public health restrictions due to COVID-19 in spring 2021.

- **National level** (Germany, Italy, Poland): one national workshop per involved country (total of 3 workshops), and additional interactions when needed.
- **Local level**, one local workshop per involved municipality (total of 3 workshops) plus additional interactions where needed.

Step 2: focus groups with relevant stakeholders on all levels for their feedback and validation of the MICAT tool, as well as interviews with the most relevant stakeholders.

Step 3: in situ workshops to present the online tool and to train stakeholders from the three governance levels. It is planned at least:

- one workshop at the EU level,
- one workshop for each participating MS (3 workshops)
- one workshop for each participating local municipality (3 workshops).

The workshops will involve a wide range of stakeholders, such as policymakers, citizen groups, market players, technical experts on all governance levels, and other stakeholders involved throughout the project.

While the stakeholder mapping will be done in Task 6.1, additional activities are foreseen for the local level. ICLEI (Task 5.2 lead) organised a call for tender for city participation as “MICATool Pilot Cities”. At the time of writing (March 2021), three European cities matching the project’s goal have been selected and subcontracted to support the tool’s development. During the course of the project, MICATool Pilot Cities will deliver available information on their current climate neutrality strategy, as well as the reporting/monitoring outcomes, host two workshops, participating in focus groups/interviews, and attend a training session. The feedback from the MICATool Pilot Cities co-creation process will provide input for the development and implementation of the tool.

A final survey of the core stakeholders involved in WP5 activities will provide detailed feedback about how they appropriate the MICATool (and to what extent), how they perceive it (e.g., about credibility, reliability, usability), about the added value it can bring to their work (e.g. planning, policy making), and in their communication towards other

stakeholders and larger audiences. The results of this survey will provide testimonies and practical examples that will then be used for the dissemination actions in WP6. The survey will be carried out by IEECP.

WP6: Communication and dissemination

WP6 is strongly interlinked with WP5. While WP5 is focused on core stakeholders covering the three governance levels (EU, national and local), WP6 in Task 6.1 will deal with general stakeholder involvement and dissemination activities to increase MICAT's outreach. The general stakeholders' mapping will help identify other stakeholders willing to be involved closely in the project and serve as a larger multiplier group. In the creation of a stakeholder matrix, the RASCI method³ will serve as a guidance, where all stakeholders will be divided by groups, identifying those who should best be targeted to scale up the use of the MICATool.

The stakeholders list will be continuously updated and their engagement will be monitored (Task 6.3) to verify that the views of the Stakeholder Community are taken up in the project development and the MICATool has addressed policy makers and stakeholders' expectations. This will ensure proper monitoring of stakeholder engagement and the impacts that such targeted engagement creates. The General Data Protection Regulation (GDPR) privacy rules will be respected in interactions with stakeholders. Their agreement to be in such a mapping and file will be checked with them from the project start, with personal emails or phone calls.

Furthermore, WP6 is responsible for communication and dissemination of the project's outcomes. To reach this goal we will use several tools and channels, such as a website, newsletters, and social media. Deliverables that will not publish stakeholders' data include D6.2 Stakeholder database (M3) and D6.6 Common approach to data management established within the Data Management Plan (M6).

³ The RASCI Responsibility Matrix is a method used to assign and display responsibilities of individuals or jobs (people) in a task (project, service or process) in the organization. (See e.g. <https://managementmania.com/en/rasci-responsibility-matrix>, last accessed 18.03.2021)

2.2 Types and formats of collected/generated data

As further described in Section 3.3, open formats and machine readable data formats will be preferred before others when possible, in order to enhance the interoperability and re-use of collected data. In general, the following types of data collected in the MICAT context can be differentiated:

- Data collected for the assessment of indicators (i.e. statistical data, data taken from modelling, scientific results from other studies etc.)
- Data gathered by direct input (i.e. interviews, workshops, surveys, other stakeholders engagement activities)
- Data collected in communication and dissemination (i.e. newsletter, MICAT website etc.)
- Data collected through other management or coordination actions.

These types of data are described in the following subsections below.

Data for indicator assessment

The assessment of Multiple Impacts of EE measures within MICAT will partially rely on the work of previous projects with a comparable scope of Multiple Impacts, namely:

- **COMBI** (Calculating and Operationalising the Multiple Benefits of Energy Efficiency) quantified five key types of multiple benefits (health, resource, social welfare, macroeconomic impacts, and energy security) of energy efficiency in Europe. This project has comprehensive data on direct costs and direct and indirect benefits of representative energy efficiency improvement actions in the residential, commercial, industry and transport sectors.
- **ODYSSEE-MURE** (MB:EE) - Tool was developed as part of the Odyssee-Mure project and represents a quantitative indicator approach to measure multiple benefits of energy efficiency (MB-EE). These are classified into three groups: environmental, economic, and social-related MBs.

For the work developing the MICATool, data from the national partners (e.g. Prognos, ARE, RSE) will be incorporated, for example, concerning the scenarios of the respective NECPs. Furthermore, the project partner e3m will provide data on the scenarios at the EU level. These data are mostly available in the published NECPs or in their annexes. Data provided by the models of the national partners beyond that may be subject to confidentiality. In that case, agreements on use are made with the individual partners. These data would then only be used to validate the tool but will not be published.

Specific details on data needs will be described in M2.1 (Conceptual Framework Approach) and D 2.1 (Quantification Concept).

Data gathered by direct input

To ensure the highest possible methodological quality of the MICATool and to further improve the user experience, a validation process (Task 4.3) is established. This process will be run twice during the project duration (M20 and M25) and involves internal and external stakeholders, so that a wide range of feedback can be incorporated.

Through the stakeholder engagement activities organised by MICAT consortium partners (such as workshops, focus groups, and surveys) and for mapping stakeholders, the partners will collect personal data (e.g., name, e-mail, organisation, etc.). Captured data will be both quantitative and qualitative in nature and will be stored in a standard spreadsheet (.xlsx). This dataset will be updated throughout the project. During the activities, stakeholders' ideas and relevant feedbacks are expected to be fully utilised and written up by means of notes and minutes in text documents. Photographs of stakeholders might also be taken. MICAT will respect General Data Protection Regulation (GDPR) privacy rules, and the stakeholders will provide informed consent for data collection.

Data collected during communication and dissemination

MICAT will utilize several tools and channels to support communication and dissemination of the project's outcomes. These can include, but are not limited to, a website, newsletters, and social media, that will collect subscribers' e-mail contacts, data on the number of website visitors, and social media followers (see table below). Any personal contact information will be treated with respect to the GDPR.

Table 1: Types of data collected

Tool	Data format	Storing
Website	Website statistics	Hosting platform and Google Analytics / XLS file (ad acta)
E-Newsletters	e-mail addresses	Revue platform / XLS file (ad acta)
Social Media	Number of followers, reactions and reach	Social media platform / XLS file (ad acta)
Workshops	Signed participation lists	Workshop organizer archives
Webinars	e-mail addresses of participants	Webinar software / XLS file (ad acta)
Podcasts	Number of times the podcasts were streamed	Podcasts streaming platform / XLS file (ad acta)

Other coordination actions

Other coordination actions include the data collected during the management and coordination actions, e.g. the names and e-mails of the consortium. Data will be stored the form of .pdf, .docx and .xlsx files.

2.3 Size of data

The MICAT project will not work with data or data formats that require an above-average amount of storage space. Data sharing should also remain possible via typical means, like e-mail or sharing via sharepoints. Apart from exceptions unknown at this point in time, the data expected to be collected, processed, and produced within MICAT is estimated to be below 50MB. It must be noted that this figure is a rough estimate and a more accurate number will be available with the progress of the project. The DMP will be updated accordingly at that time.

2.4 Data utility

Although the produced data would be useful to many stakeholder groups, it is believed that policymakers and scientists are the ones to utilise them the most. Other potential users of the data are NGOs, city networks, energy agencies and civil society.

3. Fair data

This Data Management Plan will be implemented in order to ensure that the MICAT project applies the ECs FAIR principle, whereby data should be **Findable, Accessible, Interoperable and Reusable (FAIR)**. To do so, MICAT Consortium Members have agreed on establishing a series of criteria to make data available to other users.

3.1 Making data findable, including provisions for metadata

Enabling other researchers, policy makers, and stakeholders to find and reuse the MICAT research data is essential to increase the outreach of the project. Data published in MICAT will be organized and stored in files and folders with appropriate metadata records to facilitate sharing and re-use.

Metadata will include standard English language descriptors following the DataCite schema, including: Identifier; creator; title; publisher; publication year; resource type; subject; date of collection/creation; language; size; format; version; rights; description; and funding reference. Where appropriate, the sources of the datasets and methodologies used to generate and analyse them will also be included on the record.

Metadata will be made available to depository catalogues and other appropriate portals or databases, including where relevant institutional data portals for the consortium members. To facilitate ease of identification and sharing, data files produced in MICAT will follow a standard naming convention, viz: (WorkPackage)_(DataType)(Number)_(Partner)_(Date YYYYMMDD)_(VersionNumber).(FileType)

For example: WP1_Interview00218_FISI_210310_v1.doc

Easy-to-use search keywords will be used in MICAT for tagging the data collected/generated and its content. In general, the keywords will comprise terms related to the topics related to MICAT, such as energy efficiency, multiple impacts, multiple benefits, energy transition, climate protection, as well as keywords specific to the project, such as MICAT, H2020EE, EU_H2020. The keywords will accurately reflect the content of the datasets and avoid words used only once or twice within them.

3.2 Making data openly accessible

Data produced or used in MICAT may be shared at three levels:

1. Data may be shared between consortium partners for the purposes of analysis and/or preparation of outputs, except where expressly prohibited by the terms of access to existing datasets (for secondary data) or terms of agreed informed consent to provide data (for primary data). Data will be shared via access restricted Microsoft Teams project site at Fraunhofer ISI; secure file transfer service, such as Microsoft OneDrive; or encrypted thumb-drive or external hard drive.
2. Data resulting from the stakeholder engagement activities, and/or data from earlier research required to provide context or as a discussion point for these activities, may be shared with participants, subject to agreed terms and conditions.
3. Where appropriate, data produced in MICAT may be made available to the wider public as open access data.

Data produced in MICAT will be assessed for its suitability for sharing as open access data according to criteria including: informed consent provided by research participants (see Annex I); terms of access or use of data (for pre-existing datasets); data protection and confidentiality legislation in the states in which data has been produced and/or is stored; presence of personal data, and/or reasonable effort required to anonymise personal data and/or redact personal data.

All scientific publications and policy briefs resulting from this project will be made available open access and will be published on the MICAT project website or the EC's Open Access Publishing Platform or the Horizon Results Booster. Data produced during the project duration will be made available, within the ethical constraints of guarantees of

confidentiality and anonymity offered to research respondents. The MICATool, as a main product of the project, will be publicly available and usable, allowing in- and output of data.

Some data used in the project will be derived from existing models that are property of the partners. All previously existing datasets and model parts are explicitly excluded from this open access strategy.

In the MICAT project all deliverables, except D6.2 Stakeholder database, are public and will be made accessible through the MICAT website if considered of interest to the general public.

3.3 Making data interoperable

Data produced in MICAT will be saved in standard, widely-available data formats to facilitate sharing and re-use internally by consortium partners, and externally by other users where appropriate. Interoperability of the data (i.e. allowing data exchange and re-use of the research data between researchers, institutions, organisations or countries) is facilitated by following good practices and standards for research data.

In the course of the project, it will be necessary to define suitable data formats regarding e.g. temporal resolution, spatial resolution (i.e. EU, national, local level), units and file types to guarantee a smooth tool development for the interfaces between the WPs 2 to 4. The same goes for the input data of the finalized tool to make it usable and customizable for the users and allow to the input of data in different common units and formats.

3.4 Increase data reuse (through clarifying licenses)

MICAT products and deliverables will be made available as open access and/ or will be shared under a creative commons license (such as CC BY or CC BY-NC). Potential interested parties will be alerted to the availability of the data via disseminated deliverables, workshops, conference papers, scientific publications, and the project website.

Data underpinning publications resulting from MICAT will, wherever appropriate (see section 3.2. for potential exclusions and restrictions) be made publicly available. Data will

be catalogued either on the publication of relevant papers, or on the completion of the project, whichever is sooner, with the metadata immediately available. However, the data itself may be embargoed until the end of the grant period, or to some other date, to permit a period of fair use by the MICAT researchers or for reasons of data sensitivity. Publications will include a statement on how data can be accessed. All publications will acknowledge the receipt of funding from the Horizon 2020 programme.

Data deposited on the website will remain available for at least 5 years after the end of the MICAT grant period, or according to the policy of the used repository.

4. Allocation of resources

The costs for making MICAT research data FAIR (i.e. findable, openly accessible, interoperable, and reusable) while securing any personal data collected, are detailed in the Grant Agreement. These costs have been covered by the project's financial budget, and include Open Access (OA) publications, purchase of data, and ICT services such as secure servers and Internet domains.

5. Data security

All collected data will be stored for the entire duration (three years) of the MICAT project. These data gathered during the research will be stored securely (e.g. password protected) and backed up using common practices for the storage and backup of small and medium-sized datasets in cloud-based environments by all partners.

All project partners are responsible for data being processed within their private servers and will ensure that this data is protected, and any necessary data security controls have been implemented, to minimize the risk of information leak and destruction. This case refers to the data that will be closed and therefore will not be shared and/or re-used within the framework of the project.

With regard to the EU-SILC and HBS micro data used in the framework of indicators from Wuppertal Institute, the confidential data will be stored on a password-protected computer with daily updated Antivirus software without cloud-based back-up. Access to the data is restricted to the authorized researchers/ project partners named in the research proposal. Intermediate results of analysis containing confidential data will be stored on the same computer and will be solely used on the premises of the research entity. Access to the logfiles from the website is restricted by login and password. Concerning the project website and project newsletter the information will be stored solely by WISE Europa to ensure that the data is protected.

6. Ethical aspects

The ethical standards and guidelines of Horizon 2020 will be rigorously applied in the MICAT research, regardless of the country in which the research is performed. The research will also fully comply with all existing EU regulations and guidelines, like the European Code of Conduct for Research Integrity and the General Data Protection Regulation. Many of the requirements set forth by European directives have formed part of national laws and guidelines; compliance with this is set out below.

Shall external stakeholders be involved in the project, they will be asked for their participation and informed about the collection of personal data (see Annex 1). In MICAT, data is collected/generated only for specified, explicit and legitimate purposes relative to project's objectives. Moreover, all project partners tasked with processing data during MICAT fully abide with their respective applicable national as well as EU regulations.

MICAT does not raise any of the ethical issues referred to in the ethical issue table in the administrative proposal form, and is not subject to any specific national legislation on ethics. The project will process data that are not included in any special category of personal data (i.e. non-sensitive data). The collection/generation of data from individuals participating in the project's activities is based upon a process of informed consent. As a project involving substantial engagement and collaboration with stakeholders beyond the core consortium, we will ensure compliance with GDPR. The MICAT website will publish that the project recognizes GDPR and take care of data security, as pointed out above.

The MICAT team must respect the fundamental principle of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity. Fraunhofer ISI, as coordinator, will be responsible for ensuring ethical conduct in the project. Individual participants are responsible for obtaining approval from their own institutional research ethics committees for research that they are directly responsible for undertaking, with copies of approvals collated by Fraunhofer ISI. Fraunhofer ISI is committed to providing all of the necessary support in assisting and facilitating the ethical delivery of the project, in collaboration with consortium participants.

MICAT will involve the participation of several (groups) of persons and thus collect respective, also personal, data. This will include the following elements:

- Focus groups with regional experts (WP5)
- Interviews with a variety stakeholders and actors (WP5)
- Workshops with different stakeholders (WP5)
- Surveys with MICATool Pilot City participants (WP5)

Personal data collected in stakeholder engagement activities include: Name, Institution, Affiliation, Contact details (e-mail and phone), geographic scope (city, country). Further details on the interaction with stakeholders can be found in the stakeholder strategy, deliverable D5.1.

7. ANNEX 1 - Information Sheet and Consent form

MICAT Information Sheet and Consent form v1.0 (February 2021)

We would like to invite you to take part in an activity being carried out by MICAT, a 3-year project funded by the European Union within the framework of the H2020 Research and Innovation programme.

Please take some time to carefully read this information sheet and ask questions about anything you do not understand.

About MICAT

There is significant potential to improve energy efficiency in all sectors and levels. However, facing the often cited “energy efficiency gap”, even the profitable potential is not fully exploited. To help closing this gap and facilitating energy-relevant decisions and policymaking, MICAT aims to highlight and quantify the additional values of energy efficiency measures and investments considering the Multiple non-energy Impacts, such as the economic, social, and environmental impacts.

The goal of MICAT is the development of a comprehensive approach to estimate Multiple Impacts of Energy Efficiency.

MICAT will enable analyses at three different governance levels (local, national and EU) to address a broad target group and interested actors. This allows simplified analyses to be carried out on the basis of different data and policy scenarios in order to compare and assess the relevance of the Multiple Impacts.

The project sets a sound scientific empirical basis for monitoring Multiple Impacts while providing a publicly available and easy usable **online tool (MICATool)** which will be developed in a co-creational manner with the respective governance levels. The national and local cases for monitoring Multiple Impacts of Energy Efficiency will be developed further in a broad stakeholder and dissemination approach to set a standard for future reporting on Multiple Impacts of Energy Efficiency.

The project "MICAT – Multiple Impacts Calculation Tool" is coordinated by Fraunhofer ISI (DE) and implemented together with the European partners IEECP (NL), Wuppertal Institute (DE), WiseEuropa (PL), E3 Modelling (GR), IIASA (AT) and ICLEI EURO (DE).

Useful Information

Your participation in the project's activity is voluntary

If you decide to participate in a MICAT activity, we will ask you to **sign a MICAT Informed Consent Form** (provided in the next section) to collect and process your data. The project will last for 36 months but your involvement would only be for as long as you wish.

What data we'll collect from you

Note: In this section the specific project activity and its purpose should be briefly explained. The following paragraph serves as a template, which can be modified as much as necessary.

We would like to learn more about your opinion on _____. Your feedback will help us identify _____ for the development of _____.

To effectively conduct this, we need to process some of your personal data:

- Your name and contact details;
- Some basic demographics (age, gender);
- Your professional information (organisation, job position, field of expertise);
- Your opinions on the subject matter.

What will we do with your data

The information you provide will be **confidential**. Your consent form will be kept separate from the observations collected during the course of the project activity. We will share your data with a few other MICAT project partners that are involved in the data analysis and

reporting process. Once the data is analysed, a report of the findings may be submitted for publication. The project's deliverables that will be derived by this activity will not include your personal data or any other information that could identify you. The results of this project activity may be also shared with European Union representatives (e.g., the Project Officer evaluating the project's progress, auditing EU agencies). Only broad trends will be reported, and **it will not be possible to identify any individuals.**

Detailed information on how MICAT project handles data is provided at the **MICAT Privacy Policy** document that was shared with you *or* can be found online here: *link to online pdf*.

There are no risks involved with your participation in MICAT

You can always ask to access your data, delete your information, or withdraw from the project

According to General Data Protection Regulation (GDPR), you have the right to ask us to:

1. Give you a copy of your data,
2. Correct your data, if you think they are not accurate,
3. Erase your data,
4. Limit or stop processing applied to your data, or
5. Give you your data in an appropriate format and to transfer them to another organisation.
6. Withdraw your consent and, therefore, your participation at any time without consequences.

Anonymous data already collected will be used because we cannot trace the information back to you. No further data would be collected, or any other procedure would be carried out in relation to your information.

In case you wish to verify the personal data that we store, have it modified, corrected, deleted or request a consent withdrawal, you may communicate with the responsible partner listed below and ask how to proceed.

If needed, please contact the following partners:

MICAT partner conducting the project activity		MICAT project coordinator	
Partner name:	Please include contact details of partner conducting the activity	Partner name:	Fraunhofer Institute for Systems and Innovation Research ISI (FRAUNHOFER – ISI)
Contact person:	--/--	Contact person:	Katharina Wohlfarth
Phone:	--/--	Phone:	+49 721 6809 162
Email:	--/--	Email:	katharina.wohlfarth@isi.fraunhofer.de
Website	--/--	Website	https://www.isi.fraunhofer.de/en/competence-center/energiepolitik-energiemaerkte/mitarbeiter/wohlfarth.html

MICAT Informed Consent Form

I confirm that I understand that by ticking each box below I am consenting to this element of the study. I understand that it will be assumed that unticked boxes mean that I DO NOT consent to that part of the study. I understand that by not giving consent for any one element, I may be deemed ineligible for participating in this project’s activity.

I confirm that I have been given a full **explanation of the purpose** of the project’s activity. I have read and understood the Information Sheet which I was provided with or listened to an explanation about the project by a project partner.

I have had an opportunity to **consider** what information will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction.

I agree to appear in **pictures/videos** that may be taken during the activity as evidence of the activity itself and as possible promotional material for the MICAT project. I understand that these pictures will not be provided to any organisations for commercial purposes. However, they may be processed by third parties as a consequence of their dissemination at international level through the project’s social media and website. I understand that the consortium has no control on the images after dissemination.

I agree that my **anonymised research data** may be used by others for future research
 (I will not be identifiable when this data is shared).

I understand that my **participation is voluntary** and that I am **free to withdraw** at any time without giving a reason, and that any data after the time of which it is withdrawn will be no longer be included as part of any future reports, unless I agree otherwise.

I understand that my personal data will be held and processed in confidence and in accordance with the principles laid out by **GDPR**.

I am aware of whom I should contact if I wish to lodge a complaint.

I confirm that I have read and understood the above and freely consent to participate in this project's activity. I have been given adequate time to consider my participation.

Future activities

If you would like your contact details to be retained so that you can be contacted in the future by the project researchers who would like to invite you to participate in **further activities of this project**, or in future studies of a similar nature, please tick the appropriate box below.

Yes, I would be happy to be contacted in this way*

No, I would not like to be contacted

Contact details

Full name: _____

E-mail: _____

Date: _____

Signature: _____