D8.4
Risk Assessment
and Mitigation Plan

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Executive summary

Identifying risks and being able to assess them in a systematic way to mitigate the impact of various risks is vital to any project. Thus, a set of procedures, templates and guidelines is needed to enable the project to reach its objectives and to perform well and to deliver high-quality deliverables.

Section 1 introduces the purpose of the deliverable and presents the glossary of main terminology used in the deliverable.

Section 2 focuses on risk management as an umbrella term. It includes the high-level view of dealing with the risks. It illustrates the processes GRETA has adopted for its risk management.

Section 3 reviews the risk management implementation in greater detail. It shows how the risks are assessed, identified, dealt with and mitigated in the context of GRETA's work. In essence, it illustrates the work to be carried out in each WP but also in Task 8.3.

Project information

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Summary (for dissemination)	This deliverable outlines the GRETA risk assessment and mitigation plan. It describes the modules of risk management and lists the identified risks per severity. Furthermore, the deliverable introduces the implementation of risk management and illustrates the use of a wiki-page as a space for easy access and use in order to both perform and maintain the risk assessment and mitigate the risks.
Keywords	Risk management, risk assessment, quality assurance, project management

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0.1	2021-07-23	First draft
0.2	2021-08-03	Second draft
0.3	2021-08-15	Third draft for the internal review
0.4	2021-08-19	Fourth (final) draft
1.0	2021-08-27	Final version

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Abbreviations and acronyms

CA: Consortium Agreement

CDE: Communication, Dissemination and Exploitation

COVID: Acronym of the Pandemic

CTP: Community Transition Pathway

Dx.x: Deliverable number

DMP   Data Management Plan

DoA: Description of Action

E-COM: Executive Committee

EEAB: External Expert Advisory Board

EU: European Union

GA: General Assembly

GIS: Geographic Information System

GRETA: GReen Energy Transition Actions

KPI: Key Performance Indicator

Mxx: Month identifier, project month

QA: Quality Assurance

Rx :   Risk number (identifier)

Tx :   Task number (identifier)

WP: Work Package

WPx: Work Package number (identifier)

1   Introduction

GRETA is expected to provide both high-quality results and deliverables. All work entails risks that may be internal or external. As D8.2, Project Guidelines and Management Plan already illustrated, risk identification and assessment are part of the quality control that will be later described in D8.3, due in M6. Risk management aids GRETA to reach its objectives while ensuring success and quality of the work done in the various tasks by implementing risk mitigation measures. These measures include (a) forecasting of potential unknown risks that require special attention for prevention or immediate resolution in addition to (b) dealing with risks identified already in the DoA. This is fundamental to efficient project management, as monitoring of risks is most important in any project. Thus, the Project Coordinator needs to set up a risk monitoring procedure to oversee if, for example, deviations emerge, so that corrective actions can be undertaken to avoid any emerging failure.

Risk monitoring is carried out in several ways in GRETA, as described also in D8.2, Sections 3.4 and 7.1. These sections relate to the GRETA deliverables and internal project reporting. As illustrated there, each ongoing task will be presented in the project's monthly meetings, with a 2-slide template, where the latter slide contains a table to report deviations, delays and risks, if they arise, and related contingency plans. Figure 1 illustrates the relation of Risk Management to both Project Management (outlined in D8.2) and Quality control (to be outlined in D8.3).

Figure 1. Risk Management in relation to GRETA's Project Management and Quality Control.

Project management is presented in a highly detailed manner in D8.2. In relation to the present deliverable, the most relevant sections in D8.2 concern the project management structures and the decision-making in those (Section 2) and the Work Plan (Section 3). Section 2 helps to illustrate the roles when the risk management is implemented, and Section 3 gives the context and content for the risk identification and risk assessment.

Quality control is the operative part of quality management. It sets the boundaries and criteria for when the quality requirements of GRETA's result, e.g., a deliverable, are achieved. It has two parts, already explained in D8.2, i.e., progress reporting that is carried out each month and deliverable review. This present deliverable focuses on the golden box in Figure 1.

1.1   Risk related glossary

Table 1 illustrates the main related glossary used in this deliverable.

Table 1. Risk-related glossary.

Glossary word	Explanation
Risk Assessment	Risk assessment aims to establish a prioritization of project risks for subsequent treatment. It also allows us to establish a general risk classification of the project, which provides us with information on trends that indicate actions to be taken to manage the risk (mitigation).
	Risk identification is first made through a systemic approach based on the project objectives. WP leaders and task leaders will oversee the risk identification of their WP. Risk Gatekeeper continuously monitors a single individual risk for further risk assessment.
	Risk assessment is done only for identified risks. It can be considered as the management of risk mitigation and contingency plans associated to the risk.
Risk Identification	A subset of both risk assessment and risk monitoring. As soon as a risk is identified 'as a risk', it is processed as one, and continuously monitored.

Risk Management	An umbrella term that includes all the other glossary terms. It is the high-level term of a management process of dealing with all risks. Risk manager is responsible for this process.
Risk Monitoring	A periodic review of the status of each task's achievement in relation to risks is continuously carried out. This monthly review and assessment contain risk monitoring. If, based on this assessment, a risk is found or an existing risk has changed, a mitigation plan will be constructed. Each risk has an assigned risk gatekeeper.
Risk Mitigation	End-result of a Risk Assessment. It suggests a way to mitigate an identified risk to not trigger it or change its likelihood or impact to worse.

1.2 Objectives of the deliverable

The purpose of this deliverable is:

- To illustrate the motivation and importance of risk management and its procedures.
- To empower and encourage WP teams (and task leaders) to implement these procedures whilst performing their tasks and activities.
- To visualize risk management and its processes and practices.

This deliverable is at the same time a guide and a tool for all GRETA partners. It covers Risk Management as a fundamental part of Project Management and as a part of Quality Assurance (QA).

2   Risk Management

It is fundamental to ensure success and quality of tasks performed to achieve the expected objectives of the project. That is the primary key for the development of a risk management plan that includes both the implementation of mitigation measures (use of a template) and forecasting (a process and a template) of potential unknown risks. This plan explicitly aims to prevent that a risk would trigger an action by passing a threshold. The plan also explicitly aims to ensure that a risk would get an immediate/timely resolution. Figure 2 below outlines the relationships and details of the two 'modules' of Risk Management. Risk management entails (1) Risk identification process and (2) Risk assessment, i.e., an assessment procedure itself and mitigation planning.
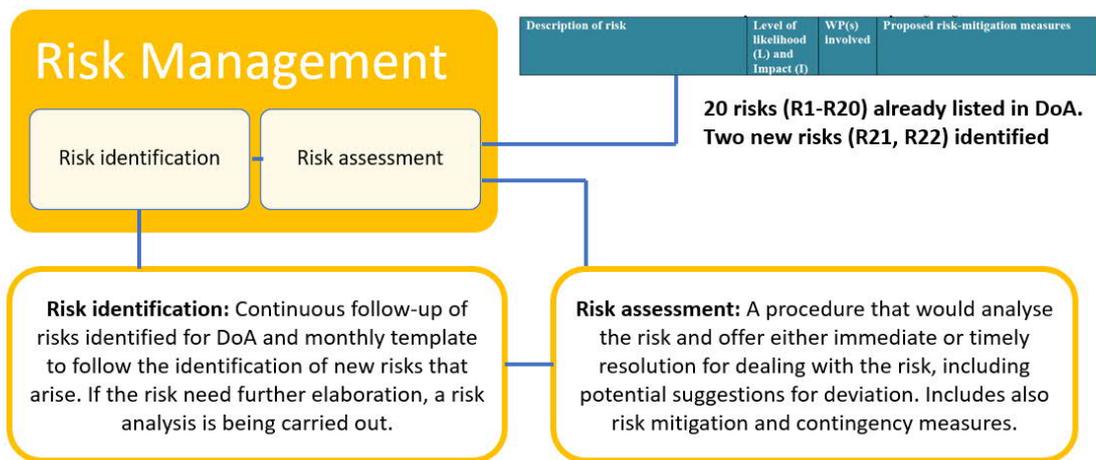

Figure 2. Risk Management overview.

Essentially, risk management follows this risk management plan. The plan has the same two modules but includes a detailed risk description and related responsibilities and roles. Figure 2 illustrates the high-level definition of both risk identification and risk assessment.

2.1   Risks identified in the DoA

GRETA's DoA already contains twenty (20) risks that were proactively identified. An example risk is shown in Table 2 but with one additional column and a time-dependant row below each risk. The added column names, for the risk management purposes, a person in charge for every risk. This person will monitor the status of that risk, i.e., is a risk gatekeeper. The risks identified for the DoA are presented in Annex 1, and one risk as an example is shown in Table 2 below.

Table 2. Preliminary risks identified in the DoA – <u>Example</u> of one risk.

Description of risk and identifier (Rxx)	Level of risk likelihood (L) and impact (I)	Involved WPs	Proposed mitigation measure	Risk gatekeeper
R1: Lack of alignment between the GRETA framework for energy citizenship emergence (D1.1) and planned GIS modelling (WP4) and transition pathway (WP5) activities.	L: low I: medium	WP1, WP4, WP5	WP1 has planned for two joint partner workshops on the definition (T1.3) and alignment (T1.4) of the framework, which will take place during second and third General Assemblies (GAs).	WP1 leader Set at M2 Sign-off at M30

<u>Risk management actions taken:</u>

10.06.2021 (M2): WP5.1 task leader and WP1 partner (UNIBO) suggested bi-monthly meetings in addition to the workshops as a proposed mitigation plan.

08.07.2021 (M3): No new risk related action.

12.08.2021 (M4): No new risk related action.

2.2   Risk identification template for collecting arising risks

A risk identification template has been created and adapted for the purposes of GRETA. The template is presented in every monthly meeting by the leaders of all ongoing tasks to collect risks that have arisen while carrying out the work. The template is illustrated in Figure 3 below. The template includes a table with two 'sections'. The upper section ('Main deviations / delays') should be filled in when the task leader expects deviations or/and delays. The details of the deviation (as compared to the DoA) or delays in the implementation should be documented here so that its effect on the work and the other Work Packages could be identified. The lower section ('Identified risks') will collect a list of new risks beyond those 20 that were identified for the DoA. Figure 3 shows two examples from Task 5.1 – Taxonomy of levels for the emergence of Energy Citizenship. The first one was not in the DoA but the second one is related to Risk no. 1. As the task leader has identified the new risk, a person/ organization in charge of that risk will be named as risk gatekeeper for that risk. In addition, the risk needs an explanation concerning a contingency plan. In the example, the contingency plan for the new risk (numbered as R21) is (a) to use already existing databases from other case studies and (b) to utilize open data platforms. An additional contingency element is listed for the existing risk (R1) in addition to the existing one, i.e., the workshops already planned.

Main deviations / delays			
Currently, no deviations have been found.			
Identified risks	Responsible partner	Included in the DoA	Contingency plan
Availability (and lack of harmonisation) of data for Energy Citizenship emergence levels	UNIBO	[NO]	▪ Use of already built databases on EU case studies, including results of other EU projects ▪ Use of open data platform of Municipalities
Link to R1: Lack of alignment between the GRETA framework for energy citizenship emergence (D1.1) and planned GIS modelling (WP4) and transition pathway (WP5) activities.	UNIBO	[YES]	▪ Monthly bi-lateral meetings

Figure 3. Risk identification template with an example from M2 meeting (Task 5.1).

At the time of submission of this deliverable (M4), no deviations have been found but two new risks (R21, R22) have been identified and added to the list of risks.

2.3 Risk assessment

Risk assessment is the process that will be triggered when a risk is identified or/and when a risk gatekeeper informs the risk manager of its necessity. It is done predominantly by Task and WP Leader(s) and, if needed, by the E-COM, if the WP Leader(s) do not agree with the results of the assessment. In essence, the risk assessment can be considered as the management of risk mitigation and contingency plans associated to the risk. It can be seen as part of the project's quality assurance, to be later illustrated in D8.3.

Even if the quality control and project management oversee that the project is kept aligned with its objectives, the risk identification and assessment are also linked to that holistic procedure. As the project is expected to deliver high-quality outputs, and not only deliverables, also risks that jeopardize reaching that high quality may arise. Risk assessment is at the heart of that.

Risk assessment is a background process carried out also when the project management is assessing both the past and future performance in the project work. Any known risk's impact needs to be continuously analysed. As an example, out of twenty risks identified in the DoA, four (4) risks were considered as having 'high impact' and thirteen (13) risks were considered as having 'medium impact', and only three (3) were considered as having 'low impact' on the project. Each of these types is analysed in the following sections.

2.3.1 High impact risks

Let us analyse those four (4) high impacts risks in greater detail. Those risks were R6, R12, R13 and R14. All four risks were related to the COVID-19 pandemic. Those are presented in Table 3 below.

Table 3. High impact risks identified in the DoA.

Risk description	Original mitigation plan	Assessment (at M4)
R6: Case study stakeholders change minds about GRETA participation due to fears related to COVID-19 pandemic	While GRETA case studies have been carefully selected for uniqueness and complementarity, the project would remain viable if alternative sources (studies, reports, surveys with similar energy communities) could be captured.	No change. Recent project performance does not indicate lower or higher risk.
R12: New outbreaks of COVID-19 require	The C&D activities of the project will still be ensured, adapting contents, messages, and	No change. Recent project performance

		does not indicate lower or higher risk.
R13: Unforeseen COVID-19 developments prevent realization of planned physical GRETA communication and dissemination activities, including project promotion, and awareness raising among the relevant actors	GRETA's Communication, Dissemination (and Exploitation) Strategy will be revised to prioritize online communication and social media. In preparation for such an event, the GRETA project already envisions a social media strategy (under T7.1) and will engage case study stakeholders via the GRETA Community (under T7.2).	No change. Recent project performance does not indicate lower or higher risk.
R14: Unforeseen COVID-19 developments prevent realization of GRETA's exploitable results, affecting individual and project-joint exploitation strategies	KAS will work with the consortium partners to revise their individual exploitation strategies, as well as GRETA's joint exploitation strategy, if deemed necessary. This can be done periodically if pandemic impacts persist.	No change. Recent project performance does not indicate lower or higher risk.

2.3.2 Medium impact – medium likelihood risks

Let us further analyse also the fourteen (14) medium impact risks in greater detail – based on clustering them either on the basis of severity or likelihood. The first cluster illustrates six (6) risks (see Table 4) that have medium impact with medium likelihood.

Table 4. Medium impact – medium likelihood risks identified in the DoA.

Risk description	Original mitigation plan	Assessment (at M4)
R8: Technical delays in development and/or testing of spatial models (T4.6) compromises cross-	GRETA accommodates well the complex interplay between this suite of tasks, firstly by ensuring leadership harmonization (both T4.6 and T5.2 are led by GESIS), and secondly by	No change. Recent project performance does not indicate lower or higher

level analysis (T5.2) and further creation of CTPs (T5.3)	giving both the cross-level analysis and the CTP establishment (T5.3) a continual iterative nature with T4.6.	risk. Further meetings have been suggested.
R10: Synthesis of results (T6.2) is affected by delays in progress of case studies and implementation work packages (WP3, WP4, WP5)	FhG will promptly advance with citizen workshops (T6.3). If delay lasts, FhG may initiate policy workshops (T6.4) depending on available information.	No change. Recent project performance does not indicate lower or higher risk.
R16: Changes in partners' staff delays progress, consequently affecting quality of results	Guidelines for handling partner staff changes will be included in the CA. Moreover, GRETA's DMP (D8.7) will define processes for storing the project documentation, so to assure continuity. LUT will continuously monitor those processes in T8.3.	No change. Recent project performance does not indicate lower or higher risk.
R18: Lack of engagement of targeted stakeholders in the project activities (EEAB, case studies, citizen workshops, policy workshops, etc.)	KAS, with support from LUT, will manage in T7.5 a continuous stakeholder engagement operation inspired in user-driven innovation. The guidelines for this approach will be defined from onset in the common stakeholder engagement framework for GRETA (D7.1, M3).	No change. Recent project performance does not indicate lower or higher risk.
R19: Unforeseen COVID-19 developments restrict international travel and limit ability of the project to deliver physical gatherings, impacting project realization, planned participatory processes, case study visits and events, and other physical project activities	GRETA has been designed with the versatility and the budget contingency for accommodating both physical and online meetings, either for regular partner assemblies or participatory activities. If necessary, all physical meetings can switch to fully online mode. Standard guidelines for such an event will be produced early in the project by a task force established by the E-COM. The GRETA Community (T7.1) will facilitate realization of participatory processes under these circumstances.	No change. Recent project performance does not indicate lower or higher risk.
R20: Privacy concerns of citizens and/or other	Development of a comprehensive DMP in line with internal and international policies and practices, where privacy aspects are tackled, technical anonymization of customer data via	No change. Recent project performance does not indicate

stakeholders in the project create general delays	abstraction management layers, anonymization in all deliverables and reports where involved users are mentioned. Additionally, informed consent will be used with all participants, verified through ethics review and tailored to language the audience will understand. These matters will be continuously monitored by the Ethics, Privacy, and Data Manager. The human-data interaction approaches of the project will be used to identify privacy concerns as well as possible biases of data used in the project. Lastly, the GRETA Multinational Study will be outsourced to a reputed experienced company using data panels where privacy concerns are dealt with already and off the scope of GRETA.	lower or higher risk.

2.3.3 Medium impact – low likelihood risks

The second cluster illustrates eight (8) project work related risks (see Table 5) that have been estimated to have medium impact.

Table 5. Medium impact – low likelihood risks identified in the DoA.

Risk description	Original mitigation plan	Assessment (at M4)
R1: Lack of alignment between the GRETA framework for energy citizenship emergence (D1.1) and planned GIS modelling (WP4) and transition pathway (WP5) activities.	WP1 has planned for two joint partner workshops on the definition (T1.3) and alignment (T1.4) of the framework, which will take place during second and third General Assemblies.	No change. Recent project performance does not indicate lower or higher risk. Further meetings have been suggested.
R2: During T1.3 workshop, partners cannot reach consensus on the structural and dynamic features of the GRETA framework for	The GRETA consortium will invite members of its EEAB, as well other energy citizenship experts, to the framework	No change. Recent project performance does not indicate

energy citizenship emergence (D1.1), compromising project developments	definition workshop (in T1.3), who will offer key advice and facilitate the activities.	lower or higher risk.
R3: Bad quality or missing social media data from case studies, to support developing data interaction approaches	GRETA consortium has access to additional data that can be used to supplement the missing data.	No change. Recent project performance does not indicate lower or higher risk.
R5: EU survey is ultimately not realized due to external reasons (no viable service provider is identified, reserved budget turns out to be insufficient, etc.)	In this case, expected inputs to WP4, WP5, and WP6 would have to come from other, less comprehensive EU surveys, and from the case studies only.	No change. Recent project performance does not indicate lower or higher risk.
R7: Partners unable to align their views on combination of modeling approaches and its interdependences, delaying definition of modeling framework	In GRETA, the definition of the modelling framework is seen as an iterative exercise, taking place in coordination with both data processing and model development. Even if approaches integration is not fully complete, and as long as required data is flowing into the WP (T4.1), modeling tasks T4.3-T4.6 can initiate model construction activities.	No change. Recent project performance does not indicate lower or higher risk.
R11: Lack of availability or lack of interest from policymakers to engage in drafted policy recommendations' review (T6.4)	The registration of policymakers in the workshops will be done several months in advance. If number of registrants remain low, FhG will recruit GRETA EEAB members/others to participate.	No change. Recent project performance does not indicate lower or higher risk.
R15: Inadequate preliminary KPI definition, potentially affecting project progress assessment	While KPIs are to be delivered in M3 (D8.1) these can be revised/updated by LUT anytime until M6. From M6 onwards, further changes in existing KPIs can take place exceptionally, if deemed necessary by the E-COM.	No change. Recent project performance does not indicate lower or higher risk.

R17: Partner leaves Consortium	Robustness and competence diversity of the consortium is such that it will allow normal activities to continue until a substitute partner is selected. LUT will monitor any imbalances and correct them accordingly.	No change. Recent project performance does not indicate lower or higher risk.

2.3.4 Low impact – low likelihood risks

Lastly, let's analyse the two (2) low impact risks in greater detail; see Table 6 below.

Table 6. Low impact – low likelihood risks identified in the DoA.

Risk description	Original mitigation plan	Assessment (at M4)
R4: Unforeseen challenges in commissioning, scientific design, or execution of GRETA multinational survey, delay data collection from this activity	GRETA's project structure and timeline account for certain timing flexibility in data collection activities. T4.1, which will integrate and process survey data, spans from M08 to M16, while the EU survey, which is transversal to GRETA, is expected to start at around M07 and could finish somewhere between M14 and M16. This covers unforeseen delays.	No change. Recent project performance does not indicate lower or higher risk.
R9: Community or incumbent actors do not recognize or comprehend binding nature of ECCs, putting at risk the fulfilment of established community transition roadmaps	ECCs are designed exactly to ensure transition actions are realized by adoption of trust-based mechanisms and fair distribution of benefits. Yet, their very novel nature, makes it difficult for people to relate to them. To address this, not only has UNIBO planned intro workshops on CTPs and ECCs, as they will co-design them with each case study community.	No change. Recent project performance does not indicate lower or higher risk.

2.3.5 New risks – identified throughout the project lifetime

All new risks will be added to the table at the time they have been reported in the monthly meetings or in other meetings in which the consortium is made aware of the risk. Thus, within the first four months, two additional risks (see Table 7) have been reported.

Table 7. New risks arisen so far in GRETA.

Risk description	Suggested mitigation plan	Assessment (at M4)
R21: Availability (and lack of harmonization) of data for Energy Citizenship emergence levels	Use of already built databases on EU case studies, including results of other EU projects. Use of open data platforms on municipalities.	New risk identified in M2.
R22: Difficulties in gathering qualitative data on case studies lead to delays in the creation of pathways	Bi-lateral meetings with the case-study owners when necessary to identify reasons behind difficulties and develop strategies for mitigation. Periodic reminders for needed data.	New risk identified in M4.

During the first four months, one other important issue has been noticed but it is not yet deemed as a risk. It rather influences the overall quality of the project's results, including deliverables and dissemination impact. The issue listed so far is as follows:

- It has been brought into discussion what will happen to the GRETA website after the project has ended. The project will lose an important avenue of impact of GRETA's results. This will be considered in greater detail in the quality assurance deliverable.

3   Implementation of the Plan

In order to implement the Risk Assessment and Mitigation Plan, several roles and related responsibilities have been specified (see Table 8).

Table 8. Roles in the implementation.

Role	Responsibilities
Project Coordinator and/or Manager (see D8.2 for details)	Risk management is part of the overall project management. They oversee the external relations of Risk management. • Overall management of the project • Guaranteeing that risks are presented in the monthly meetings • Carrying out a monthly discussion with the Risk manager and doing joint risk assessment • Setting up the meeting(s) if risk(s) are likely causing deviations to the work agreed on in the DoA • Communicating to the EC if necessary to make amendments
Risk Manager	Risk manager oversees the processes of risk assessment and risk management as a whole. • Maintaining and updating risk status tables in the wiki-page • Communicating bi-directionally with the Project Coordinator and Manager but also with the Risk Gatekeepers • Carrying out continuous risk assessment and doing joint risk assessment
Risk Gatekeeper	Each risk has a dedicated risk gatekeeper (organization) – named as shown in this deliverable. • Informing (typically in monthly meetings) the risk manager of changes that relate to that particular risk. • Participating in risk assessment of their own Risk • Co-editing risk status in the wiki-page
WP and Task leader (see D8.2 for details)	They work at the grassroots level and are the best sources of new or changed risks. • Overall management of the WP and its tasks

- Introducing new risks and suggesting the contingency plan in the monthly meetings

To support the implementation of the risk management, a risk management wiki-page was created into the GRETA workspace on MS Teams for easy follow-up and editing. The wiki-page has several sections:

- The first section introduces the instructions for how the consortium and different persons (see the roles above) edit this page.
- The second section lists the ongoing tasks at the moment (e.g., M4) and whether a new risk has been identified in those tasks – or a deviation to the DoA is potentially to take place. This table is only edited by the WP leader, Task Leader and Risk Manager (LUT).
- The third section lists all existing risks and their status. The table also contains a row for risk management notes as seen in Section 2.1. This table is edited only by the Risk Manager and Risk Gatekeeper.
- The fourth section lists all those risks that have led to the deviation to the DoA and potentially to an amendment decision. This section should be edited only by the Project Coordinator or/and Project Manager from LUT.

The wiki-page can be found as follows:

- Log into the GRETA MS Teams site.
- Choose the Project management channel from the left panel.
- At the top of the screen (right in the middle) you have tabs, and the fourth tab is the Risk Assessment and Mitigation Plan wiki-page.
- Select the tab and you will see all the content.

Figure 4 below illustrates the first section.

Instruction how to use this Wiki

Follow these instructions how to use this Wiki.

1. Edit only according to the roles assigned to you (see Table below)
2. First table (Table 1) should be edited only by the WP/Task leader and Risk Manager (Kari)
3. Second table (Table 2) should be edited only by the Risk Gatekeeper and Risk Manager (Kari)
4. Third table (Table 3) should be edited only by the Project Coordinator (Helinä) or Manager (Goncalo)

For all others this is a window to all existing risks that have been identified.

Role	What Table you should edit?
Project Coordinator or Manager	Table 3 and only if project work has led to the deviation or amendment
Risk Manager	Tables 1 and Tables 2 - based on Monthly meetings - link to the analysis document if necessary
Risk Gatekeeper	Table 2 - update the status of existing / listed risk - if change takes place
WP and/or Task Leader	Table 1 - if new risk is being found, add it here to the right WP and task

Figure 4. Instructions on how to use the Risk Assessment wiki.

Figures 5, 6 and 7 illustrate the remaining three sections of the wiki, respectively. Figure 5 shows the current tasks and risks associated to them and the risk management notes if any have been provided. Figures 5 and 6 are purposefully short of details as the tables in Section 2.3 and Annex A contain the detailed descriptions. Figure 6 shows the list of all risks and their status (at the time of writing this deliverable, at M4).

Table 1: Current tasks and their relation to the risks

WP and Task number	Risks associated and or new risk	Monthly summary notes (if any)	Risk Assessment and Analysis
WP8 - Task 8.1	R15, R16, R17		
WP8 - Task 8.2	R15, R16, R17		
WP8 - Task 8.3	R15, R16, R17		
WP8 - Task 8.4	R15, R16, R17		
WP8 - Task 8.5	R15, R16, R17		
WP1 - Task 1.1	R1, R2, R4,		
WP1 - Task 1.2	R1, R2, R4,		
WP1 - Task 1.3	R1, R2, R4,		
WP2 - Task 2.1	R3, R4		
WP3 - Task 3.1	R3, R4		
WP3- Task 3.2	R3, R4, R5, R6		
WP3 - Task 3.3	R3, R4, R5, R6		
WP5 - Task 5.1	R1, R4, R5, R6, R8, R9, R21	New Risk (R21) found at M2 Update to R1	
WP5 - Task 5.2	R1, R4, R5, R6, R8, R9		
WP5 - Task 5.3	R1, R4, R5, R6, R8, R9, R22	New Risk (R22) found at M4 Update to R8	
WP7 - Task 7.1	R12, R13, R14		
WP7 - Task 7.2	R12, R13, R14		
WP7 - Task 7.3	R12, R13, R14		
WP7 - Task 7.4	R12, R13, R14		
All tasks (WP1-WP7)	R18, R19, R20		

Figure 5. Current running tasks in relation to the risks.

Existing risks and their status (at M4)

This section has detailed descriptions of the risks and their current status. The WPs and tasks above may change the status of the risk. Any change does need a bonafide risk assessment and analysis to support the change in status.

This Table should be edited ONLY by
a) Risk Gatekeeper
b) Risk Manager

Risk description	Likelihood and Impact	Current mitigation plan	Risk management notes (if any)
R1:			
R2:			

Figure 6. Wiki section for existing risks and their status.

Figure 7, again, shows the list of deviations and details related to those. After only four months of project work, that table in naturally empty.

List of Deviations

This table will list all deviations that have been occurred due to the risks triggered. The deviation quite often might lead to the amendment request which is a project management issue.

This Table should be edited ONLY by
a) Project Coordinator
b) Project Manager

Each deviation get a number in order of appearance. It will be given a distinct name and an person in charge. Deviation will also be time-dependent (discovery date and estimated closing date). Each deviation will also need to have a closure decision.

Table 3: List of Deviations

ID	NAME	Person in Charge	Discovery date	Actions taken	Result (closure)	Sign-off date
001						
002						
003						
004						

Figure 7. Wiki section for the list of deviations.

4   Conclusions

This deliverable presented GRETA's Risk Assessment and Mitigation Plan. The deliverable has three sections. The first section introduces the main glossary and the objectives of this deliverable. The second section outlines the modules of risk management and risk assessment within the current known risks. The final and third section introduces the wiki-page that is used to help the implementation of risk management.

The main glossary items were the terms used in this deliverable. The umbrella term of risk management includes also other items. Firstly, the risk(s) are identified (risk identification), then their likelihood and impact are assessed (risk assessment), and the mitigation plan based on the assessment is provided (risk mitigation). As shown, risk management consists of two 'modules', i.e., risk identification and risk assessment. GRETA has its own risk identification template that is used and presented per task each month. The template provides information that enables the continuous risk monitoring.

GRETA has twenty-two (22) risks identified, and all risks have their proposed mitigation plans. All these are easily accessible and viewable in the risk management wiki-page. The wiki-page contains three different tables that are edited based on the roles specified for the GRETA consortium. The first table in the wiki-page contains the running tasks and their relationships to the risks identified or found. The second table contains all GRETA's risks. The third table lists all deviations that have occurred in GRETA.

Annex 1. GRETA's risk table (at M4)

Description of risk and identifier (Rxx)	Level of risk likelihood (L) and impact (I)	Involved WPs	Proposed mitigation measures	Risk gatekeeper
R1: Lack of alignment between the GRETA framework for energy citizenship emergence (D1.1) and planned GIS modelling (WP4) and transition pathway (WP5) activities.	L: low I: medium	WP1, WP4, WP5	WP1 has planned for two joint partner workshops on the definition (T1.3) and alignment (T1.4) of the framework, which will take place during second and third General Assemblies (GAs).	WP1 leader Set at M2 Sign-off at M30

Risk management actions (R1):

10.06.2021 (M2): WP5.1 task leader and WP1 partner (UNIBO) suggested bi-monthly meetings in addition to the workshops as a proposed mitigation plan.

R2: During T1.3 workshop, partners cannot reach consensus on the structural and dynamic features of the GRETA framework for energy citizenship emergence (D1.1), compromising project developments	L: low I: medium	WP1	The GRETA consortium will invite members of its EEAB, as well other energy citizenship experts, to the framework definition workshop (GA2, T1.3), who will offer key advice and facilitate the activities.	WP1 leader Set at M2 Sign-off at M8

Risk management actions (R2):

No risk management actions have taken place by M4.

R3: Bad quality or missing social media data from case studies, to support developing data interaction approaches	L: low I: medium	WP2, WP3	GRETA consortium has access to additional data that can be used to supplement the missing data.	WP2 leader Set at M4 Sign-off at M28

Risk management actions (R3):

No risk management actions have taken place by M4.

R4: Unforeseen challenges in commissioning, scientific design, or execution of GRETA multinational survey, delay data collection from this activity	L: low I: low	WP3, WP2, WP1	GRETA's project structure and timeline account for certain timing flexibility in data collection activities. T4.1, which will integrate and process survey data, spans from M08 to M16, while the EU survey, which is transversal to GRETA, is expected to start at around M07 and could finish somewhere between M14 and M16. This covers unforeseen delays.	WP3 leader Set at M4 Sign-off at M15

Risk management actions (R4):

No risk management actions have taken place by M4.

R5: EU survey is ultimately not realized due to external reasons (no viable service provider is identified, reserved budget reveals insufficient, etc.)	L: low I: medium	WP3, WP4, WP5, WP6	In this case, expected inputs to WP4, WP5, and WP6 would have to come from other, less comprehensive EU surveys, and from the case studies only.	WP3 leader Set at M4 Sign-off at M15

Risk management actions (R5):

No risk management actions have taken place by M4.

| R6: Case study stakeholders change minds about GRETA participation due to fears related to COVID-19 pandemic | L: unknown

I: high | WP3, WP4, WP5, WP6 | While GRETA case studies have been carefully selected for uniqueness and complementarity, the project would remain viable if alternative sources (studies, reports, surveys with similar energy communities) could be captured. | WP3 leader

Set at M4

Sign-off at M18 |

Risk management actions (R6):

No risk management actions have taken place by M4.

| R7: Partners unable to align their views on combination of modeling approaches and its interdependences, delaying definition of modeling framework | L: low

I: medium | WP4 | In GRETA, the definition of the modelling framework is seen as an iterative exercise, taking place in coordination with both data processing and model development. Even if approaches integration is not fully complete, and as long as required data is flowing into the WP (T4.1), modeling tasks T4.3-T4.6 can initiate model construction activities. | WP4 leader

Set at M4

Sign-off at M25 |

Risk management actions (R7):

No risk management actions have taken place by M4.

| R8: Technical delays in development and/or testing of spatial models (T4.6) compromises cross-level analysis (T5.2) and further creation of CTPs (T5.3) | L: medium

I: - | WP4, WP5 | GRETA accommodates well the complex interplay between this suite of tasks, firstly by ensuring leadership harmonization (both T4.6 and T5.2 are led by GESIS), and secondly by giving both the cross-level analysis and the CTP establishment (T5.3) a | WP4 leader

Set at M4

Sign-off at M20 |

			continual iterative nature with T4.6.	

Risk management actions (R8):

12.08.2021 (M4): WP5.3 task leader (UNIBO) suggested bi-monthly meetings (or with alternative frequencies) between WP4 and WP5. Also, a deliverable delivery (D5.2, GESIS) is potentially too close to the start of Task 4.6, which might jeopardize the quality of D5.2.

R9: Community or incumbent actors do not recognize or comprehend binding nature of ECCs, putting at risk the fulfilment of established community transition roadmaps	L: - I: -	WP5	ECCs are designed exactly to ensure transition actions are realized by adoption of trust-based mechanisms and fair distribution of benefits. Yet, their very novel nature, makes it difficult for people to relate to them. To address this, not only has UNIBO planned intro workshops on CTPs and ECCs, as they will co-design them with each case study community.	WP5 leader Set at M4 Sign-off at M20

Risk management actions (R9):

No risk management actions have taken place by M4.

R10: Synthesis of results (T6.2) is affected by delays in progress of case studies and implementation work packages (WP3, WP4, WP5)	L: medium I: medium	WP6	FhG will promptly advance with citizen workshops (T6.3). If delay lasts, FhG may initiate policy workshops (T6.4) depending on available information.	WP6 leader Set at M4 Sign-off at M27

Risk management actions (R10):

No risk management actions have taken place by M4.

| R11: Lack of availability or lack of interest from policymakers to engage in drafted policy recommendations' review (T6.4) | L: low

I: medium | WP6 | The registration of policymakers in the workshops will be done several months in advance. If number of registrants remain low, FhG will recruit GRETA EEAB members/others to participate. | WP6 leader

Set at M4

Sign-off at M30 |

Risk management actions (R11):

No risk management actions have taken place by M4.

| R12: New outbreaks of COVID-19 require adapting the CDE strategy to the emergency, the mobility reduction and the slow down/ arrest of some of the project activities | L: unknown

I: high | WP7 | The C&D activities of the project will still be ensured, adapting contents, messages, and tone-of-voice to the ongoing situation, making editorial production and social media presence a priority with the use of e.g., dedicated campaigns and hashtags. Events will be either postponed or held online, while partners' participation to external online events and relative C&D coverage will be ensured to guarantee the expected C&D impacts. | WP7 leader

Set at M4

Sign-off at M30 |

Risk management actions (R12):

No risk management actions have taken place by M4.

| R13: Unforeseen COVID-19 developments prevent realization of planned physical GRETA communication and | L: unknown

I: high | WP7 | GRETA's Communication, Dissemination (and Exploitation) Strategy will be revised to prioritize online communication and social media. In preparation for such an event, the GRETA | WP7 leader

Set at M4

No sign-off |

dissemination activities, including project promotion, and awareness raising among the relevant actors

project already envisions a social media strategy (under T7.1) and will engage case study stakeholders via the GRETA Community (under T7.2).

Risk management actions (R13):

No risk management actions have taken place by M4.

| R14: Unforeseen COVID-19 developments prevent realization of GRETA's exploitable results, affecting individual and project-joint exploitation strategies | L: unknown I: high | WP7 | KAS will work with the consortium partners to revise their individual exploitation strategies, as well as GRETA's joint exploitation strategy, if deemed necessary. This can be done periodically if pandemic impacts persist. | WP7 leader Set at M4 No sign-off |

Risk management actions (R14):

No risk management actions have taken place by M4.

| R15: Inadequate preliminary KPI definition, potentially affecting project progress assessment | L: low I: medium | WP8 | While KPIs are to be delivered in M3 (D8.1) these can be revised/updated by LUT anytime until M6. From M6 onwards, further changes in existing KPIs can take place exceptionally, if deemed necessary by the E-COM. | WP8 leader Set at M3 Sign-off at M18 |

Risk management actions (R15):

No risk management actions have taken place by M4.

| R16: Changes in partners' staff delays progress, consequently affecting quality of results | L: medium I: medium | WP8 | Guidelines for handling partner staff changes will be included in the CA. Moreover, GRETA's DMP (D8.7) will define processes for storing the project documentation, so to assure continuity. LUT will | WP8 leader Set at M4 Sign-off at M30 |

			continuously monitor those processes in T8.3.	

Risk management actions (R16):

No risk management actions have taken place by M4.

| R17: Partner leaves Consortium | L: low

I: medium | WP8 | Robustness and competence diversity of the consortium is such that it will allow normal activities to continue until a substitute partner is selected. LUT will monitor any imbalances and correct them accordingly. | WP8 leader

Set at M4

Sign-off at M30 |
|---|---|---|---|---|

Risk management actions (R17):

No risk management actions have taken place by M4.

| R18: Lack of engagement of targeted stakeholders in the project activities (EEAB, case studies, citizen workshops, policy workshops, etc.) | L: medium

I: medium | All WPs | KAS, with support from LUT, will manage in T7.5 a continuous stakeholder engagement operation inspired in user-driven innovation. The guidelines for this approach will be defined from onset in the common stakeholder engagement framework for GRETA (D7.1, M3). | WP8 leader

Set at M4

Sign-off at M30 |
|---|---|---|---|---|

Risk management actions (R18):

No risk management actions have taken place by M4.

| R19: Unforeseen COVID-19 developments restrict international travel and limit ability of the project to deliver physical gatherings, impacting project GA realization, planned participatory | L: medium

I: medium | All WPs | GRETA has been designed with the versatility and the budget contingency for accommodating both physical and online meetings, either for regular partner assemblies or participatory activities. If necessary, all physical meetings can switch to fully online mode. Standard | WP8 leader

Set at M4

Sign-off at M30 |
|---|---|---|---|---|

| processes, case study visits and events, and other physical project activities | | | guidelines for such an event will be produced early in the project by a task force established by the E-COM. The GRETA Community (T7.1) will facilitate realization of participatory processes under these circumstances. | |

Risk management actions (R19):

12.08.2021 (M4): It was decided that the next GA (M6) will take place online.

| R20: Privacy concerns of citizens and/or other stakeholders in the project create general delays | L: medium

I: medium | All WPs | Privacy will be assured in varied ways. It will include a comprehensive DMP in line with internal and international policies and practices. Additionally, informed consent is asked from participants, verified through ethics review, and tailored to language the audience will understand. The human-data interaction approaches of the project will be used to identify privacy concerns as well as possible biases of data used in the project. Lastly, the GRETA Multinational Study addresses also privacy concerns within the scope of GRETA. | Ethics, Privacy and Data Manager

Set at M6

Sign-off at M30 |

Risk management actions (R20):

No risk management actions have taken place by M4.

R21: Availability (and lack of harmonization) of data for Energy Citizenship emergence levels	L: low I: medium	WP1, WP5	Use of already built databases on EU case studies, including results of other EU projects. Use of open data platforms on municipalities.	WP5 leader Set at M2 Sign-off at M18

Risk management actions (R21):

10.06.2021 (M2): A new risk identified by WP5, Task 5.1.

R22: Difficulties in gathering qualitative data on case studies lead to delays in the creation of pathways	L: low I: medium	WP3, WP5	Bi-lateral meetings with the case-study owners when necessary. Periodic reminders for needed data.	WP5 leader Set at M4 Sign-off at M30

Risk management actions (R22):

12.08.2021 (M4): A new risk identified by WP5, Task 5.3.