

Project Acronym: FlexiGrid

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Deliverable 1.4

Risk Management Plan

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Figures

Figure	Name
1	TQC Management
2	Organization and frequency of review of the FlexiGrid Risk management system
3	Reporting and reviewing scheme for FlexiGrid 42 months
4	Iterative process
5	Risk Matrix

List of abbreviations

Abbreviation	Definition
FlexiGrid	Enabling flexibility for future distribution grids with high penetration of
	variable renewable penetration– FlexiGrid
CA	Consortium Agreement
TPR	Technical Progress Report
GA	Grant Agreement



Contents

Au	uthors	2
Re	eviewers	2
Ve	ersion History	2
Fig	gures	2
Lis	st of abbreviations	2
1.	Introduction	4
2.	Risk Management	4
3.	Risk policy, principles and governance	5
	3.1 Optimizing the ratio	5
	3.2 Continuous process	5
	3.3 Level of responsibility	5
	3.4 Level of reviewing	5
4.	Risk Management process	6
	4.1 Work in progress	6
	4.1.1 Foreseen risks – risks from GA	7
	4.1.2 Unforeseen risks – planned risks	7
	4.1.3 States of play for risk mitigation – risk occurance	7
	4.2 Methodology	7
	4 2 1 Risk matrix	8



1. Introduction - Flexigrid

FlexiGrid will provide the operators of the electrical distribution systems, the DSOs, with a variety of advanced tools to meet the new demands that the transition into a fossil-free society brings and engage the lead actors in this changing market. To allow Europe into 100% renewable energy, the distribution grids need new flexibility to adapt to the variation in energy supply from weather-dependent sources like wind and solar.

2. Risk Management

This deliverable D1.4 presents the Risk Management Plan for FlexiGrid. It includes the risk management procedure, risk assessment and tools for how the risks are handled and monitored. A risk assessment of the project using the provided tool is appended to this report; the risk register.

D1.4 is a part of Task 1.3 where task objective is to: Review and assess quality of work as well as monitor the project progress and contingency plans on potential risks in order to cope with problems of specifying, integrating, developing and evaluating the concepts, methodologies and technologies in FlexiGrid.

This includes anticipation and assessment of risks and project deviations in order to implement and to apply contingency measures and conflict resolution procedures. This task includes constant monitoring and adaption of the project management procedures to improve its effectiveness. Together with WP leaders, quality of work will be reviewed and assessed, both related to delivering quality and replicability relevance.

Risk is defined as: Any event that could occur and adversely impact the achievement of FlexiGrid project strategic and operational objectives. Lost opportunities are also considered as a risk.

Risks (risk events) are about not be able to reach the projects objectives.

There are 3 important variables as shown in Fig. 1 that should be kept in mind when making decisions concerning risks. Will the risk affect costs, time-plan or quality of the project activities and deliveries?

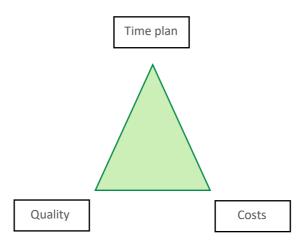




Figure 1. TQC management¹

3. Risk policy, principles and governance

Risk management is about optimizing the ratio between the level of acceptable risk and the use of resources. It is a continuous process and risk management ensures that risks are managed at the appropriate level of responsibility.

3.1 Optimizing the ratio

The ratio will be a consequence on which method one uses to evaluate the risks. If all risks are red, i.e., immediate attention is needed, too much time will be spent. Therefore, the risk assessment is not an activity without limitations.

3.2 Continuous process

Risk management is a continuous process and as such it is important to formalize to have a clear understanding how and when risks are identified, analyzed, quantified, monitored, and reported. The reporting cycle is a part of risk management process and is synchronized with the technical progress report which is a part of the technical periodic report.

3.3 Level of responsibility

Risks should be handled at the right level of responsibility (see Table 2). Risks that concerns the overall level of the project handles on Level 1. Risks associated with specific tasks is handled on Level 2.

Risk Layer	Risk Level	Risk Manager	Supporting	Frequency of	Report
	Group		Group	Review	
1	Management	Project	Management	Once a year	Management
		Coordinator	Board		Board
2	Project	Project	WP Leaders	Quarterly	Project
		Manager			Coordinator

Table. 2 Organisation and frequency of review of the FlexiGrid Risk management system

3.4 Level of reviewing

According to Consortium Agreement section 6.2.2.1 meeting schedule for Management Board meetings (see Table 3).

Qu	uarterly meeti	Yearly face-to-face	
Feb	May	Aug	Nov
2020	2020	2020	2020
2021	2021	2021	2021
2022	2022	2022	2022
2023			

Table 3 Reporting and reviewing scheme for FlexiGrid 42 months

-

¹ Quality: Some term quality with "performance" and/or "reputation"



Risk is always a part of the agenda for Management Board meetings. There are risks that could lead to decisions that is bound to be held in Management board meetings concerning content, finances, intellectual property rights and evolution of the consortium.²

Risk is also present every 6 week on the WP leader meetings.

4. **Risk Management process**

To establish a context a clear Risk policy is communicated to the partners and staff involved in the project and what level of uncertainty is willing to accept in respect to the achievement of FlexiGrid objectives.

The process is built on different steps and it is iterative, Figure 2 gives a clear idea.

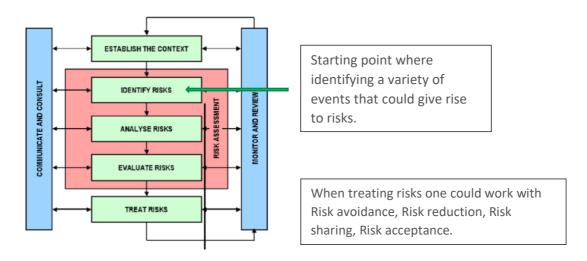


Figure 2. The iterative process³

4.1 Work in progress

The technical progress report (TPR) is updated every 6 months and submitted to EC according to Article 20 as a part of the periodic report. This report presents an overview of the progress towards the objectives of the action, including milestones and deliverables identified in Annex 1. As such it must include explanations justifying the differences between work expected to be carried out in accordance with Annex 1 and that actually carried out. Risk template is found in project handbook.

In the space between the objectives and the results, there is an ongoing risk identification process.

- Foreseen risks
- Unforeseen risks
- States of play for risk mitigation

² Please see Consortium Agreement 6.3.1.2

³ Picture from Shift2Rail (S2R) Joint Undertaking



4.1.1 Foreseen risks - risks from GA

Foreseen risks are stated in WT5 1.3.5 Critical implementation risks and mitigation actions in GA. These are the starting points from application phase. These risks are addressed to a work package i.e. the WP leader is responsible to handle the risk, i.e. value the risk and suggest actions in the TPR.

4.1.2 Unforeseen risks – planned risks

Unforeseen risks are events that can lead to missing out on deadlines. It can hurt the quality and affect costs. When these occur actions should be taken to either mitigate the effects, avoid the risks, or solve the cause of the risk event.

Update risk template with any new risks.

And use the methodology below when judging risk events.

4.1.3 States of play for risk mitigation – risk occurrence

Always report on the states of play for each risk you are responsible for or a part of. A continuous risk perspective is a healthy way of being alert and it demands adequate space for discussion. Follow up on the standing agenda every 6 week on WP-leader meeting and quarterly management board meetings.

Explanations:

- Risk number: the number in the foreseen and unforeseen risk template.
- Period: the period that the risk occurred.
- Did your risk materialize: Reflect if the risk is still adequate for risk mitigation.
- Comments: e.g. what kind of mitigation did you apply, effect of mitigations used.

4.2 Methodology

The critically of a risk is the result of the combination of the severity (consequence i.e. impact) of the risk and the probability (likelihood) that the risk actually occurs.

Is the impact on:

- Costs
- Time plan
- Quality

The severity will be evaluated on a scale 1-3

- Low: The impact of the risk can be mitigated through the redistribution of cost and/or scheduling (time plan) within the Work Package that detects or causes the Risk. It will not impact tasks, milestones and/or deliverables from other Work Packages. It will not impact the quality of project deliverables.
- 2. **Medium:** The impact of the risk may impact the cost and/or timeliness of tasks, milestones and/or deliverables from a number of Work Packages. It will not impact the quality of project deliverables. It can be mitigated through the redistribution of cost and/or scheduling (time plan) across a number of Work Packages in the Project.



3. **High:** The impact of the risk may impact the quality, cost and/or timeliness of tasks, milestones and/or deliverables from a number Work Packages. Mitigated will require actions to be taken across a number of Work Packages in the Project.

The probability will be evaluated on a scale 1-3

- 1. Low: Unlikely to occur
- 2. Medium: Few occurrences may happen during the execution of the project
- 3. High: Will very likely happen during project execution

4.2.1 Risk matrix

Risks can be unforeseen and uncertain to judge, therefor scrutiny and evaluation of risks should be on the right level of details when analyzing them and their effect on the project objectives. This means that the level of uncertainty affects the possibility to evaluate the outcome especially on likelihood. Therefore 3 levels give us the right platform for judging, as shown in Figure 3.

	Risk matrix									
þ	3	3	6	9						
Likelihood	2	2	4	6						
Lik	1	1	2	3						
		1	2	3						
	Severity									

Figure 3. Risk Matrix

All project change requests will be analyzed for their possible impacts to the project.

Status
Red = Eliminate - serious risk needs immediate action.
Amber = Avoid/limit – needs attention and

Green = Accept – progress in hand. Closed = Risk no longer exists

FORESEEN RISKS

FlexiGrid

24/06/2020														
Category	#	Likelihood 1-3	Severity 1-3	Impact	Risk/Issue Description	Work Packages Concerned	Risk Mitigation Measure(s)	Date of Report	Reported by	Mitigation Assigned To	Mitigtaion	Status	If Materialised	Progress/resolution update (with date)
Internal/Extern al		(3=highest)	(3=highest)	(Likelihood x Impact)					(Person's name and role)	(Person's name and role)	measure required Deadline	(red/amber/ green/closed)	Period? (1,2,3)	
Internal	1	3	2	6	Changes in consortium members: Due to some reason, one or more partners will not be able to continue to join the project. This could lead to delays in project implementation or even failure to deliver some of the project deliverables.	WP11	If the problem occurs, the project coordination team will take timely measures such as to remove partners or to replace them with new suitable partners. This will be done within the consortium agreement (CA) which will also ensure that all partners are bound to deliver the work in a timely manner.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	2	3	5	15	Delays compared with the project plan: This refers to the case when the required project activities take longer time than what planned in the project initially. This could lead to delays in reaching project goals/milestones according to the defined plan.	WP11	Propose organizational changes which can accelerate the process or make adjustment to the schedule to deliver results without affecting the overall schedule of the project.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	3	2	5	10	Shortage of personnel of project partners: This happens when the project partner is unable to allocate enough researcher-time for the project activities. This could make it difficult or even impossible to develop certain project tasks.	WP11	Propose required personnel with required skills to perform the tasks within each partner, also consider the possibility to exchange the tasks among the partners if other partners have the possibilities to perform the tasks.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	4	1	5	5	Budget risks: This concerns the possibility that the cost to carry out the project activities exceeds the allocated budget of the project. This could lead to problems of carrying out the project tasks as signed with EC.	WP11	Propose budget adjustments and discuss among the affected partners so that all partners will agree on the new budget.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	5	2	4	8	End-user engagement. The project fails to engage end- user in Change agents. This could lead to reduced interest of the local communities.	WP10, WP11, WP9	Continuously update the dissemination plan and/or propose additional dissemination based on performance of activities. Use professional communication strategists.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	6	1	3	3	Insufficient exploitation of results. The project fails in reaching the ambitious objective to secure resources to take 2/3 of sustainable potential innovations to to the next level beyond project termination. This could lead to reduced future impact of results.	WP10, WP11, WP9	Partners with vast experience and networks drive the activities. The situation analysis team supports with team skills and networks. Collaborate with expert organisations as KIC InnoEnergy and SSERR's.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	7	1	3	3	Investment risk in test- sites hard- and software. This could lead to not constraints in functionality in demonstration activities.	WP11, WP2, WP3, WP4	Any investment decision affecting the project will be monitored in 1.3. The partner leading the investment will continuously report deviations. If necessary mitigations plans as adjustment of test-sites will be made with Project-Officer.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	8	2	5	10	Data collection and measurement: This risk involves insufficient grid data from e.g. DSOs or measurement data from the demonstration facilities in the project. This could lead to delay in project execution.	WP3, WP4, WP5, WP6, WP7, WP8	If the data from DSOs or test facilities are not sufficient, available public data (e.g., test network data) or data of similar nature will be used for the project.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	9	1	4	4	Delay in models development: Developments of models can face unexpected delay due to model complexities, algorithms, etc. This can cause serious delay in the project execution.	WP3, WP4, WP5, WP6, WP7, WP8	WP/Task leader must closely monitor the progress and propose adjustment on task divisions or even re- allocate tasks to other partners to ensure the smooth implementation of models.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
Internal	10	3	4	12	Delay in development of demonstration facilities: This concerns the practical work that is required to set up demonstration facilities for the project.	WP11, WP3, WP4, WP5, WP6, WP7	WP leader must be in close contact with demonstration facility providers to ensure about the schedule and propose adjustment if necessary. If the delay is severe, this must be dealt with at the project coordination level to adjust to overall plan of the project.	Submission of application for funding				Amber		We were informed of the Swiss demonstrator only being available in the third period of the project. Discussions have commenced with EMAX (Partner no. 4) who is considering developing testing facilities in Brussels that may double up as an interim demonstrator.
Internal	11	3	2	6	Technical difficulties by a project partner: This concerns the probability that a project partner is not able to carry out project tasks as agreed. This could delay the project as well as affect the objectives of all WPs that the partner is involved in.	WP11, WP3, WP4	The partners in the consortium have some degree of technical complementary, the project management can request help from other partners if necessary.	Submission of application for funding	Magnus Andersson (Project Coordinator)			Green		
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Externa	UF1	3	2	6	The Coronavirus has resulted in internal and external disturbances that effect the productivity of project partners and their associates.	WP1-11	Additional oversight from the PMO to direct assistance if/when required. Communication with EC to assure the PO that even where there are deviations, these are under control.	15 March 2020	Magnus Andersson (Project Coordinator)	Magnus Andersson (Project Coordinator)	IMMEDIATE	AMBER		30 April 2020: ongoing oversight and communication with WPLs and EC
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