PROJECT

"Promoting Energy Efficiency in Public Buildings of the Balkan Mediterranean Territory"

(Acronym: PRO-ENERGY)

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Activity:	**1.2. Project Monitoring, Evaluation and Quality Assurance**
Activity Leader:	**Region of Epirus - Regional Unit of Thesprotia**
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IDENTIFICATION SHEET

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1. Introduction

PRO-ENERGY is a cross-border cooperation project co-financed by the Interreg V-B Balkan - Mediterranean 2014-2020. The common challenge of the project is to improve energy efficiency of diverse public buildings (schools, museums, innovation centers etc.). Participating territories face the common problems of old facilities, outdated/degraded building façades, materials and equipment. Combined with the fact that they are dependent on energy imports, it is more than evident that there is room for improvements in energy consumption and more efficient use of energy. More importantly, the exemplary role of the public sector should be promoted by increasing energy savings in public buildings. With focus on behavioural energy efficiency, PRO-ENERGY aims to address all issues by developing and implementing joint strategies and action plans, increasing competences of public buildings owners and operators, developing and applying technologies and tools for reducing energy consumption in public buildings and promoting good practices and results generated by the project to other local/regional/national entities in the area. The project involves 6 partners from 4 different countries, Albania, Bulgaria, Cyprus and Greece. Its implementation consists of 6 Work Packages and a series of diverse activities such as project management, dissemination, trainings, development of an open source Joint ICT Web Platform, development of Joint Strategy Action Plan, development of a CBA Modeler for energy refurbishment interventions etc.

Based on the above, PRO-ENERGY requires vigorous cooperation and strong and efficient organization in order for the project objectives to be achieved. This is depicted by a substantial number of processes either linked to the realization of the project objectives or to the project in general which are defined within Activity 1.2 and the respective Quality Assurance Manual.

The Quality Assurance Manual is a document that establishes the foundations for the project supporting procedures while defining actions to ensure quality management and risk mitigation. The document will be used by all project partners and at all project levels (project – work package – activity).

The Quality Assurance Manual defines processes such as document control, development of deliverables within general quality management while it also establishes organizational needs for better quality management and addresses risks in the implementation of the project through risk management processes.

SECTION 1 QUALITY MANAGEMENT

1. Scope

The aim of the present document is to summarize actions to be set up at Work Package and consortium level to ensure quality management and risk mitigation. It also intends to make everyone aware of quality management and risk assessment techniques and metrics and to ensure a high level of quality in the implementation of the project and the achievement of project objectives.

Through the Quality Assurance manual each partner will be benefited by a stronger awareness of the various quality management tools existing, awareness will be created about informed decisions which can be made using easy tools, risks will be identified at the early stages to facilitate management of the upcoming tasks and possible actions will be anticipated to limit risks at each level.

This Quality Assurance Manual describes PRO-ENERGY quality system policies, including guidelines, and procedures that control all activities relevant to project implementation.

2. Quality Assurance Guidelines

It is important for the implementation of the PRO-ENERGY project, that all stakeholders share a unique vision and goal to attain. In this way, all stakeholders will engage their means in the aim of reaching the common goal. A process for ensuring the quality management will allow better handling of all items and tasks within the project.

The aim of this section is to establish a quality culture and understanding into the consortium by providing methodologies to monitor, analyse and correct behaviours. The role of the Quality Management Program is to ensure that the management and implementation of the project meet the quality requirements established by the consortium. To achieve this goal, quality management will be initially defined through the establishment of Quality Assurance Guidelines for Project Management as well as of Quality Assurance Guidelines for the Technical Implementation of the ICT Platform, the CBA Modeler and EPC contracts which constitute some of the main outputs of PRO-ENERGY.

2.1. Quality Assurance Guidelines for Project Management

The Quality Assurance Guidelines for project management refer to all management activities and functions and more specifically to the following:

- Document control and standards
- Management structure,
- Quality planning, control and assurance,
- Quality assurance process, and
- Project progress control.

2.1.1. Document Control and Standards

PRO-ENERGY involves a list of internal and external documents which will constitute references for all partners for the duration of the project. These documents include the following:

- Internal documents:
  - Approved Application Form of PRO-ENERGY;
  - Justification of Budget Costs of PRO-ENERGY;
  - Subsidy Contract of the PRO-ENERGY project,

- Partnership Agreement signed by all partners of the PRO-ENERGY project.

- External documents:
  - Programme and Project Manual of Interreg Balkan - Mediterranean 2014-2020 programme.

Regarding document control, all partners will ensure that the correct versions of technical requirements, manuals, specifications and reports will be available at the time of application. Any changes will be communicated to the Project Manager and the WP Leader.

The types of main documents that set the document standards for PRO-ENERGY, include the following:

- Deliverables – documents explaining activities and presented to the Joint Secretariat (JS) / Managing Authority (MA) and stakeholders to present the project's progress and results.
- Reports – periodical reports (semestrial and others) to allow the JS/MA to identify project progress, describing activities status during the reporting period and demonstrating the way resources have been allocated.
- Minutes – documents summarizing discussions and decisions (e.g. in the frame of a meeting).
- Presentations – presentations describing activities, implementation progress and identified issues.
- Timesheets – records of an employee's time spent on each project task for project management and control purposes.

The following abbreviations and acronyms will be used for document control purposes:

CO	Confidential
D	Deliverable
EC	European Commission
IR	Internal Report
MA	Managing Authority
MM	Meeting Minutes
P	Presentation
PU	Public
QR	Quarterly Report
RE	Restricted
RI	Risk

RV	Review
SR	Semestrial Report
WP	Work Package

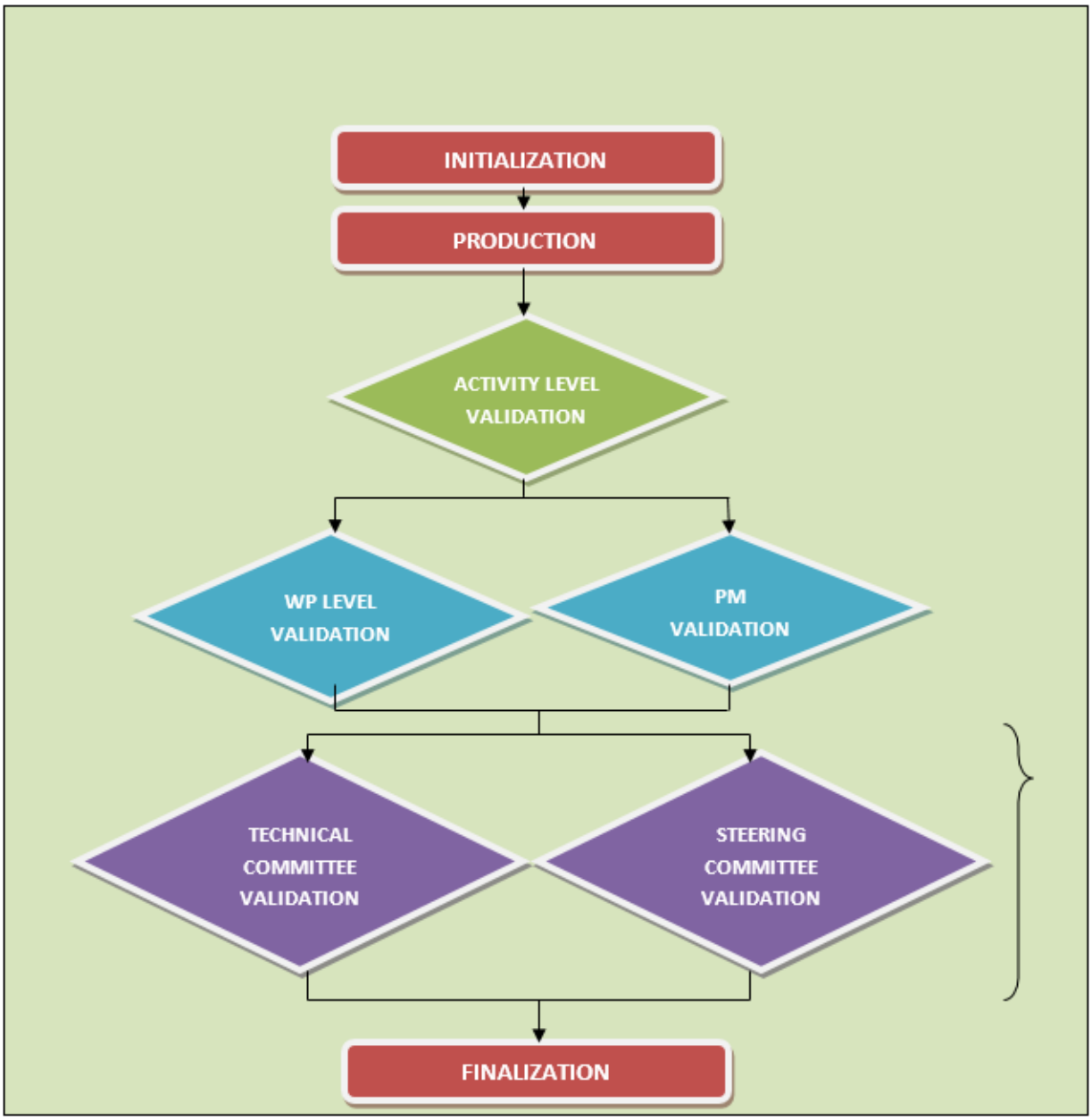
Each document shall undergo a formal review by the respective WP Leader and by the Project Manager in order to assess that the document is consistent with project objectives including technical, quality and cost objectives. Taking into consideration the operational management procedures defined in the Application Form the following main roles for the review of deliverables, reports, minutes, publications etc., can be defined:

- The **Author** will be in charge of writing and modifying the document before and after the review while at the same time the author is also responsible for providing the material to the reviewers on due time.
- The **Activity Leader (AL)** will be responsible for the production and primary validation of contents and formats for the documents within their Activity.
- The **WP Leaders (WPL)** will be responsible for the second validation and approval of the documents within their WP.
- The **Quality Assurance Manager (QAM)**[1] will be responsible for the compliance of all deliverables and documents according to the quality assurance process and specifications.
- The **Technical Committee (TC)** will be responsible for the final validation and approval of all deliverables and documents relevant to the joint ICT platform.
- The **Steering Committee (SC)** will be responsible for the final validation and approval of all deliverables and documents of the project.
- The **Project Management (PM)** will be responsible for the final decision on document content.

The process breakdown is depicted in the following figure.

[1] Leading Partner may act as QAM

Figure 1: Document Control Process



2.1.2. Management Structure

The management structure of the project is defined in the Application Form of the PRO-ENERGY project. It takes account the needs of the project and it is composed by the following:

- The Steering Committee (SC) which is consisted of one member from each partner and a deputy member. It is the project's body which will make all major decisions and will be responsible for all matters concerning budget and allocation of funds, specification of rules and guidelines for performing work, risk management, taking decisions for corrective actions, resolving contractual matters, and arbitrating on technical problems.
- The Project Manager (PM) nominated by the Lead Partner will have the overall responsibility for the running of the project. The responsibilities of the PM include task coordination, smooth cooperation among partners, and achievement of overall project objectives. The PM will be in direct consultation with the other members of the SC and handle all relations with the Managing Authority. The PM will also cooperate closely with the Financial Manager (FM) in order to ensure accuracy and efficiency in the project's financial reporting and management. A Deputy Project Manager should also be nominated by the Coordinator.
- The Financial Manager (FM) will have the overall responsibility for the financial management of the project and the implementation and follow-up of the respective procedures (reporting, communication etc.). The FM will be appointed by the Steering Committee for the whole duration of the project. The responsibilities of the FM include financial tasks' coordination, smooth cash flow, accurate and efficient financial reporting. The FM will be in direct consultation with the PM in order to be continuously aligned with the route of the project's implementation.
- The Technical Committee (TC) will undertake the responsibility of monitoring the technical parts of the project relevant to the Joint ICT Platform. The TC will be chaired by the Technical Manager (TM) who will be appointed by SC. The TC will collaborate closely with the Quality Assurance Manager (QAM) and set with him the appropriate quality procedures and practices.
- The Quality Assurance Manager (QAM) will handle the specific task of quality assurance of the project results. The QAM will establish and maintain close liaisons with the Project Manager and the Technical Manager. The QAM will have the tasks of formulating the appropriate evaluation scenarios, formulating the appropriate pilot evaluation scenarios and compiling the results of the technical evaluation scenarios,

describing the faults encountered and the measures taken to rectify or overcome them.

- In addition, and as long as the implementation of WPs 3, 4 and 5 is concerned the WP Leaders shall assign roles of scientific managers for the appropriate accomplishment and execution of actions and objectives set.

The project's SC will seek to control the variables of:

- Time – required to complete the project and broken down into time required to separate various components of the project;
- Cost – for the implementation of the tasks and the project;
- Quality – determined by the time invested for the implementation of the project's tasks;
- Scope – what should be accomplished at the end of the project;
- Risk – potential points of failure.

2.1.3. Quality Management

Quality management should be separated by project management since it is independent, and it is composed of the following parts:

- Quality Planning, which refers to the definition of the quality standards, to the way these standards will be met and to benchmarking.
- Quality Control, which refers to the review and evaluation of deliverables (self and peer review), to the assessment of the deliverables to define the level of compliance with quality standards and to the identification of ways to eliminate causes of unsatisfactory results.
- Quality Assurance, which refers to the set of planned and systematic activities to ensure that variances in processes are clearly identified and assessed and improvement actions are undertaken in order to meet the predefined standards.

Efficient and effective Quality Management requires that the project manager and the rest of the bodies within the project's management structure are aware of the quality standards which refer to the framework for achieving a recognized level of quality. These standards refer either to international, or to organizational or to program or to project level. Such standards are for example the document standards presented above.

2.1.4. Quality Assurance Process

Quality assurance planning assists in achieving quality in the implementation of the project through a set of pre-defined activities. The quality assurance process in PRO-ENERGY is based on the Deming cycle which consists of the following steps:

- PLAN: Design or revise process components to improve results
- DO: Implement the plan and measure its performance
- CHECK: Assess the measurements and report the results to decision makers
- ACT: Decide on changes needed to improve the process

Further to the steps of the Deming cycle and in order to ensure quality management quality metrics need to be defined at all levels of the project, quality assurance committees need to be identified (defined in Management Structure) for the design and implementation of metrics and performance indicators and the process review of key documents needs also to be defined as it is already defined above.

Regarding Quality Metrics, metrics are linked to the measurement of a specific indicator relevant to performance management. They are defined in a case-by-case manner and are linked to the implementation of specific tasks, to the outputs produced, to deadlines for the production of specific outputs and results, to the deliverables and their compliance with the objectives described in the PRO-ENERGY internal documents.

2.1.5. Quality Assurance Process

In order to ensure quality, the project consortium must have full control of the project's progress at every level of implementation. To achieve this, there are several tools and procedures that can be used and refer to the following:

- Project meetings – used for information exchange, for presenting and assessing progress in the implementation of specific tasks, for defining and updating short-term and long-term implementation plans as well as for addressing issues and problems. These meetings can either be Steering Committee meetings or Technical Meetings help within WP. Steering Committee meetings will be organized on a quarterly basis in partner locations. These meeting will be also used for the approval of deliverables.
- Activities monitoring spreadsheets – tools that will be used for the monitoring of the project implementation. The spreadsheets will be administered by the Coordinator and the PM and will present the actual progress in the implementation of project activities, who is responsible for each activity, time schedules and deadlines,

contingency plans and general comments about each activity's course of implementation and the respective modifications.

- Self-assessment and evaluation – continuous self-assessment at activity, WP and project level is necessary to identify potential deviations from the work plan and the necessary corrective measures that need to be taken. Evaluation is also a type of self-assessment used during the implementation of the project (ongoing evaluation) and at the end of the project (ex-post evaluation) or even for specific activities such as the development of Strategic and Operational Plans.
- Web Site of the project – the private interface of the web site constitutes a tool for planning and scheduling through the use of a calendar tool and Gantt charts, for internal communication, sharing of information, exchange of ideas, updates and monitoring project progress.
- Internal communication – there are several forms of internal communication practices that can be used including teleconferences or videoconferences using tools such as Skype and email communication.

2.2. Quality Assurance Guidelines for the Development of the Joint ICT Platform, the CBA Modeler and EPC contracts

Both the development of an open-source Joint ICT Platform guiding energy consumers behaviour to energy saving actions and that one of a Joint Cost-Benefit Analysis Modeler (open to all) supporting decision-making for retrofits, constitute two out of the major outputs of the project. The procedure of quality assurance concerning these activities differs from the quality assurance procedures for the project in general; it consists of the following pillars:

1. Analysis of requirements for the platform/modeler and definition of technical and functional specifications,
2. Design and development of the platform/modeler
3. Pilot operation and testing
4. Finalization of the platform/modeler.

Moreover, a series of additional parameters must be considered, namely:

- The importance of requirement analysis and the definition of technical and functional specifications is recognized,
- The design of the service is based on best practices of design of similar services,
- The developers have substantial experience and expertise,
- The pilot operation and testing will follow a multi-tier testing plan

When it comes to the EPC Contracts that shall be prepared within the framework of PRO-ENERGY project, the following parameters shall be taken into consideration:

- The Directive 2012/27/EU defines **EPC** as "*contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial saving*". In addition, directive 2006/32/EC defines **energy service company (ESCO)** as: *"a natural or legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in so doing. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria."* The aforementioned definitions set the framework for EPC contracting.

- It is of major importance to capitalize the existing EU experience as gained and expressed through EU funded programs (indicatively: European Platform for the Promotion of Energy Performance Contracting (EUROCONTRACT), QualiTEE project, Transparence etc.).

- Since the market development of EPC in Europe varies from one country to another, the EPCs to be prepared should comply with the national legislative framework must be taken into consideration (e.g. Law 3855/2010 in Greece).

SECTION 2

RISK MANAGEMENT

1. Scope

Risk management is a project management tool to assess and mitigate events that might impact the project and limit its success, in order to ensure success. Risk management deploys methods for identifying, analysing, prioritising, and tracking risk drivers. It involves everyone and it is not just the responsibility or the project coordinator and quality assurance managers

2. Definitions

2.1. Risk

Risk is a measure of the inability to achieve overall project objectives within defined cost, schedule and technical constraints. It entails the probability of failing to achieve a particular outcome and the consequences of failing to achieve that outcome. For processes, risk is a measure of the difference between actual performance of a process and the known best practice for performing that process.

2.2. Type of Risk

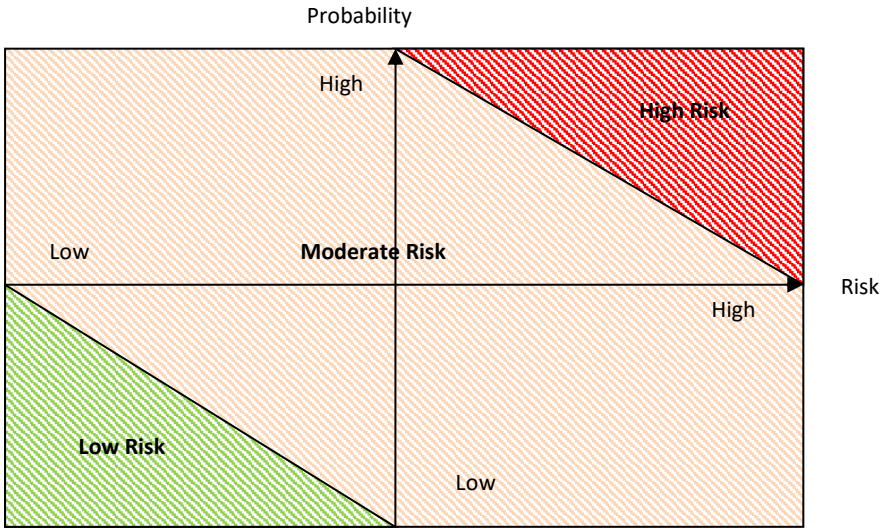
Three types of risks can be identified in PRO-ENERGY:

- A Technical Risk is the risk associated with the technical development of the Joint ICT platform affecting the level of performance necessary to meet the requirements defined in the Application Form.
- A Cost Risk is associated with the ability of the project to achieve its cost objectives as determined in the Application Form, and more specifically with the risk that the cost estimates and objectives are not accurate and reasonable and with project execution not meeting the cost objectives as a result of a failure to mitigate technical risks.
- A Schedule Risk is a risk of not meeting the time schedule and the deadlines for the implementation of the project tasks and it is originating in schedule estimates that are not realistic and on program execution falling short of schedule objectives.

2.3. Risk Rating

Risk rating is based on two parameters, the size of the impact of the risk and the probability that the event of the risk will occur. In this respect, the following figure depicts the different rankings of risks.

Figure 2: Risk Rating



The ratings presented in the figure above can be described as follows:

- Low Risk: Has little or no potential for increase in cost, for negative impact on performance and for delays in the schedule. No additional actions should be foreseen for these risks since actions within the implementation plan should be enough.
- Moderate Risk: Has potential for increase in cost, for negative impact on performance and for delays in the schedule. Special action and management attention may be required to control this acceptable risk.
- High Risk: Has high potential for increase in cost, for negative impact on performance and for delays in the schedule. Significant additional action and high priority management attention is required to control acceptable risk. This type of risk may be subject to a report to the JMA.

2.4. Risk Management

The PRO-ENERGY Project Manager is the overall Risk Manager and responsible for tracking efforts to mitigate risk, along with producing risk reports and documents based on information delivered by the Activity and WP Leaders.

The Quality Assurance Manager assists the Risk Manager with maintaining the risk management plan, by setting out provision for the risk information forms and accounting the overall risk

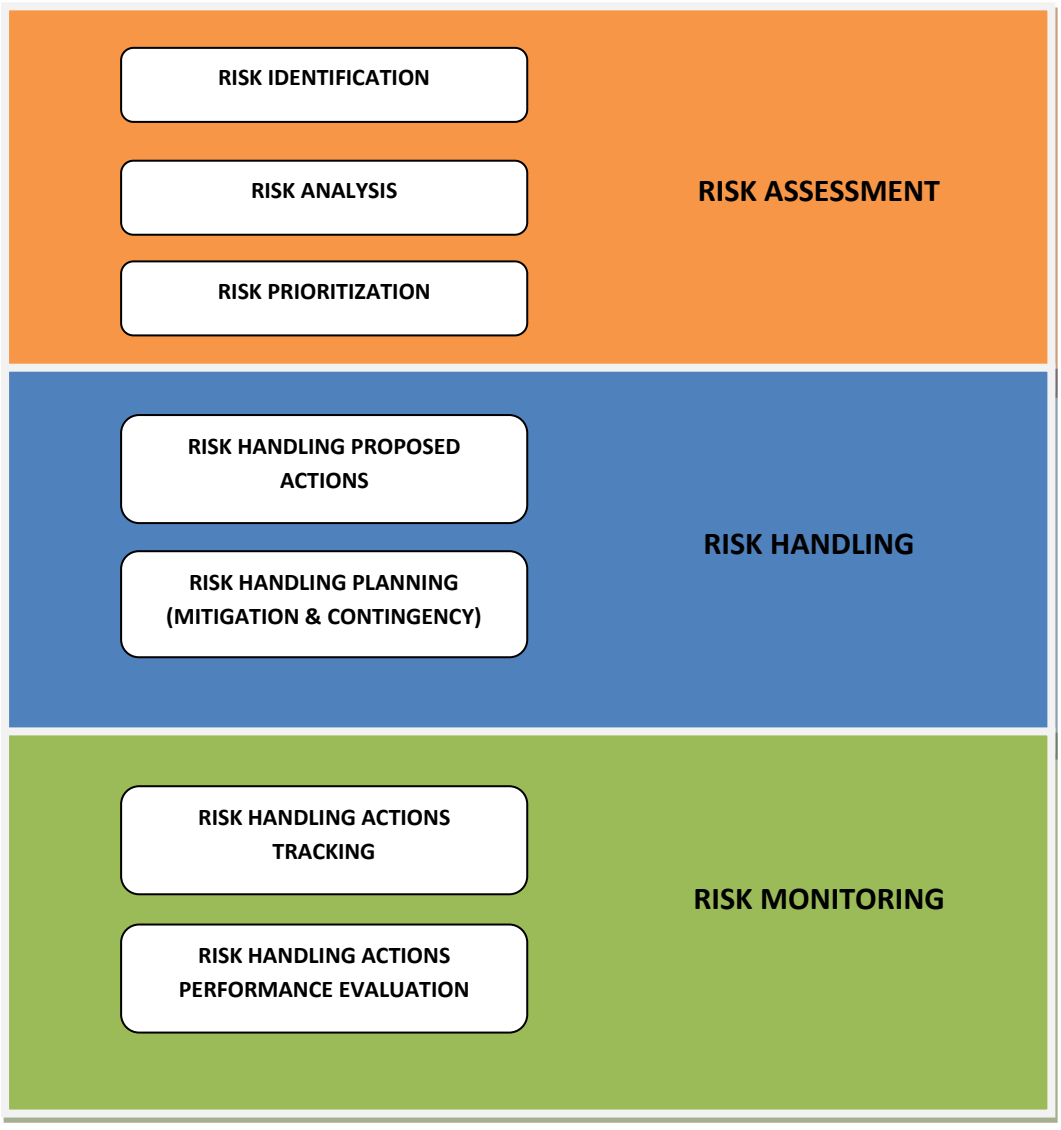
status using the Web Site of PRO-ENERGY and more specifically the private interface of the Web Site.

The WPLs are responsible for the risk assessment within their work packages, including the processes of identification, analysis, handling, information (in case of moderate or high risks), monitoring, and tracking efforts to reduce low and moderate risks. The Activity Leaders are responsible for the risk assessment of their activities. WPLs and ALs report detected risks to the Risk Manager and the Quality Assurance Manager.

2.5. Risk Management Process

Figure 3 presents the overall risk management process that will be followed.

Figure 3: Risk Management Process



Moreover, the different stages of the risk management process are presented in the following sub-ections.

2.5.1. Risk Assessment

Risk assessment includes the identification of processes or events characterized by high risk and having potentially an adverse impact on the project. After the identification, the analysis of these events/processes follows to determine the likelihood of occurrence and the consequences. Risk assessment is an iterative process which is based on a combination of risks identified in previous phases and of risks of the current implementation stage.

Risk identification is the first step in the assessment process. The basic process involves searching through the entire project plan to determine those critical events that would prevent the project from achieving its objectives. Risks will be identified by all project participants, particularly by the WP Leaders and the Activity Leaders.

The basic procedure of identifying risks consists of the following steps:

- Understand the requirements and the overall project quality and performance goals.
- Examine the operational conditions under which the values must be achieved by referring or relating to the Application Form.
- Identify the processes and activities that are needed to produce the results.
- Evaluate each activity/task against sources/areas of risk.

There are certain indicators that can be used in the identification of risks, such as the following:

- Lack of clarity or understanding of requirements.
- Insufficient or inadequate resources such as People, funds, schedule and tools.
- Insufficient communication.

After the identification of risks, risks are analyzed in relation to the WPs and the activities they affect, the risk areas and the control sources. Following the analysis, a prioritization of the risks according to probability, impact and time of risk appearance is conducted and a risk database is created.

2.5.2. Risk Handling

After the project's risks have been identified and assessed, the approach to handle each significant risk must be developed. There are essentially three options for handling risks:

- Avoidance which refers to the application of actions in order to avoid the risk event,
- Control which refers to the monitoring of the environmental conditions for influences to an already assessed risk, and
- Transfer which refers to the application of tasks to set a risk to a lower level.

Risk handling includes also the definition of alternatives for the three options as well as the definition and implementation of mitigation and contingency plans. The planning for risk handling concerns information about what must be done, the level of effort required and estimated costs, the proposed schedule showing the proposed start date, the time phasing of significant risk reduction activities, including completion date, the relationship of risks to significant project activities and milestones, and the person responsible for implementing and tracking risk handling measurements. All the aforementioned constitute part of the mitigation strategy.

Last but not least, it is important to note that risks can be categorized as:

- organization-ones, that are linked to the organization of the project consortium,
- technological-ones - linked to technological tools, services and infrastructure,
- managerial ones that refer to the overall management of the project at different levels of implementation (project, WP and activity) and
- external risks linked to external factors. Mitigation and contingency planning should take into account the above described categorization of risks.

2.5.3. Risk Monitoring

Risk monitoring systematically tracks and evaluates the performance of risk-handling actions. It is part of the project manager's, the WP and the Activity Leaders' function and responsibility. It compares predicted results of planned actions with the results actually achieved to determine the status and the need for any change in risk-handling actions.

ANNEXES

1. PRO-ENERGY Deliverable Template
2. PRO-ENERGY Presentation Template

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