**Project Management Plan**

**Feasibility Phase**

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**AWECT**

***“The Urban Clean up Company”***

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**Table of Contents**

[1 Introduction 4](#_Toc64906905)

[2 Project Baselines 6](#_Toc64906906)

[2.1 Gate review results 6](#_Toc64906907)

[2.2 Scope Baseline 7](#_Toc64906908)

[2.3 Work Breakdown Structure (WBS) 7](#_Toc64906909)

[2.4 Schedule Baseline (Planning) 8](#_Toc64906910)

[2.5 Cost Baseline (Budget) 8](#_Toc64906911)

[3 Project Organization 9](#_Toc64906912)

[3.1 Project Team 9](#_Toc64906913)

[3.2 Advisors to the project 10](#_Toc64906914)

[3.3 Local Partner 10](#_Toc64906915)

[3.4 Steering Committee and Governance plan 10](#_Toc64906916)

[3.5 Thresholds 11](#_Toc64906917)

[4 Overall Project Management 12](#_Toc64906918)

[4.1 Scope Management 12](#_Toc64906919)

[4.2 Direct, Manage and Control Work 13](#_Toc64906920)

[4.3 Integrated Change Control 14](#_Toc64906921)

[4.4 Manage Project Knowledge 16](#_Toc64906922)

[4.5 Stakeholder 19](#_Toc64906923)

[4.6 Permits 21](#_Toc64906924)

[4.7 Health, Safety & Environment 22](#_Toc64906925)

[4.8 Schedule 24](#_Toc64906926)

[4.9 Communication 25](#_Toc64906927)

[4.10 Risk Management 28](#_Toc64906928)

[5 Contract Management 31](#_Toc64906929)

[5.1 Procurement 31](#_Toc64906930)

[5.2 Financial Management 33](#_Toc64906931)

[5.3 Contract & Legal 35](#_Toc64906932)

[6 Technical Management 36](#_Toc64906933)

[6.1 Engineering 36](#_Toc64906934)

[7 Appendixes 38](#_Toc64906935)

[8 Definitions 39](#_Toc64906936)

# Introduction

The purpose of this project is to take a High Efficiency Waste-to-Energy (HE WtE) facility – designed on the basis of the reference plant in Amsterdam (AEB) – up to Financial Close at [location]. In order to develop a HE waste-to-energy project from idea to operation, the following development stages and milestones are defined, based on Front-End Loading[[1]](#footnote-2) (FEL):



Figure 1 - Development phases for WtE, according to FEL

1. Opportunity phase (FEL-1). In this phase, an opportunity is investigated. Also, partner- and relationships are built. Governmental bidding procedures are part of this phase. The conceptual design of the intended plant and its basic configurations will be determined.
2. Feasibility Phase (FEL-2). This phase determines whether the project is technical, economical & environmental feasible for involved parties. In this phase the conceptual design will be assessed and approved.
3. Definition Phase (FEL-3). In this phase, the exact ‘Definition’ of the project is established, an EPC will be selected, and financing is secured. The conceptual design will be translated in a basic engineering package (BE) and all design parameters will be fixed for the detailed engineering (DE) phase. This phase will result in Financial Close (FC) for the project.
4. EPC Phase. This phase is where the facility is designed in detail, procurement of parts from suppliers will be done, and the facility will be constructed. The plant will have its start-up and guarantee test runs, before hand over (HO) at commercial operation date (COD).
5. Operate and Maintain Phase. In this phase, the plant will convert waste to energy, following the PPA, Waste Concession and other agreements. This includes performance on electrical output (MW), availability, emission levels and compliance with regulations, etc.

To control the risks during these development stages, the Northern Consortium will manage its development process with the ‘gate process’[[2]](#footnote-3) as depicted above. In order to pass to a next phase, prescribed deliverables have to be approved through a ‘gate review’ and go through external checks by the authorities amongst others.

For each of the above-mentioned phases, a Project Management Plan (“PMP”) will be provided by the project manager. The PMP will be reviewed and approved by the Steering Committee.

# Project Baselines

## Gate review results

A precondition for starting the Feasibility Phase is a successful gate review of the Opportunity Phase, carried out by the board of the AWECT. In general, the outcomes of gate reviews provide input for the approach in the next phase. The key results of the Feasibility Phase gate review are provided below and will be further addressed in this PMP.

|  |  |  |  |
| --- | --- | --- | --- |
| No | Criterium | Results | Addressed in chapter |
| 1 | [Name1] | [TBD] | [Chapter X] |
| 2 | [Name2] | [TBD] | [Chapter X] |
| 3 | [Name3] | [TBD] | [Chapter X] |
| 4 | [Name4] | [TBD] | [Chapter X] |
| 5 | [Name5] | [TBD] | [Chapter X] |
| 6 | [Name6] | [TBD] | [Chapter X] |

Ad No 1: [Describe / elaborate]

Ad No 2: [Describe / elaborate]

Ad No 3: [Describe / elaborate]

Ad No 4: [Describe / elaborate]

Ad No 5: [Describe / elaborate]

## Scope Baseline

The overall scope of this project is to develop, design, construct and operate a HE WtE facility with a daily capacity of [XXX] ton/day waste in [location], [country]. The scope of the Definition Phase is to develop the project from a ‘Feasible project’ to Financial Close; the time when all financing and other agreements related to the project, have been executed and delivered.

## Work Breakdown Structure (WBS)

The Feasibility Phase scope is divided into 4 work packages:

1. Information Collection
2. Conceptual Design
3. Contracts and Finance
4. Feasibility Study Report



Figure 2 - Work Breakdown Structure

## Schedule Baseline (Planning)

The duration of this phase is [XX] months, with fixed deliverables and milestones, stipulated in the [project LOI]. The Schedule Baseline is based on the scope baseline and structured according to the Work Breakdown Structure. The Schedule Baseline:

* Provides insight in the critical path
* Must be approved by the Steering Committee. Any proposed changes to the schedule will be subject to the change control.

The Schedule Baseline is provided in Appendix II

## Cost Baseline (Budget)

The cost baseline of this phase is [XX] USD. The cost baseline is based on the Scope Baseline and structured according to the Work Breakdown Structure.

The schedule baseline must be approved by the Steering Committee. Any proposed changes to the schedule will be subject to the change control.

The cost baseline is provided in Appendix III

# Project Organization

## Project Team

The project team consists of three roles:

**Project Manager**: responsible for overall project objectives / scope and permits

**Technical Manager**: responsible for defining technical specifications

**Contract Manager**: responsible for all contracts and financing

These roles are needed for this phase. At the start of the Feasibility phase, only the Project Manager will be assigned and will have all work in scope, supported by the AWECT team. During the project (based on the project need), a Technical Manager and Contract Manager will be added to the team. In the next phase (Definition Phase) the existing roles will be maintained. The current roles are fully aligned with the future mirror organisation. Team members will be stationed in the target country if this benefits the project.

The organogram and the relationship between work packages, is shown in the figure below. Appendix IV provides a resource plan, including estimation of personnel quantities.



For each role an ‘archetype’ has been defined. The profiles are based on the nature of work, typical knowledge areas and competences needed[[3]](#footnote-4). AWECT’s project roles are provided in Appendix V.

## Advisors to the project

During the project, several external advisors will contribute to the project. It may be that whole portions of a work package are outsourced to consultants, but an ad hoc advice will also be used.

## Local Partner

The role of the local partner is to add local knowledge to the project (e.g. working of legislation) and manage interactions with governmental stakeholders.

## Steering Committee and Governance plan

The Steering Committee will be consisting of 2 (maximum 3) people. This people represent the interests of SPV companies and will have their own focus areas. It will be responsible for having the project roles in place, promote the project and hold overall responsibility for the project’s success. In addition to that, the Steering Committee will deliberate on matters which surpass the project’s thresholds.

Organisational governance provides direction and control through policies and processes to meet business strategic and operational goals for AWECT. This will be conducted by one of AWECTs’ directors, who will represent AWECTs’ interest in the Steering Committee. This to ensure accountability and transparency to its own shareholders. Organisational governance must provide legal, regulatory and compliance standards, but also ethical, social and environmental guidelines.

Project governance guides the project management in order to obtain project success, aligned with the goals of the SPV. It also provides the project stakeholders with relevant information for managing the project. Project governance is performed by a Steering Committee, installed by and on behalf of the SPV. Important tasks of this committee include:

* Assign the Project Manager
* Perform gate reviews
* Stakeholder engagement and communication, beyond control of the Project Manager
* Decision making and problem solving, beyond authority of the Project Manager
* Capture and use lessons learned for other projects
* Review and approve change requests, beyond authority of the project manager. Their task is to assess the impact of proposed change requests.

## Thresholds

A project’s costs and schedule go beyond the boundaries once an activity or task goes over the following boundaries: between less than [0.8] or greater than [1.2].

This will be reported on a monthly basis by the Project Manager to the Steering Committee

* Variances of [10% or +/- 0.1] in the cost and schedule performance indexes will change the status of the schedule to amber or cautionary. These will be reported and if it’s determined that there is no or minimal impact on the project’s schedule baseline then there may be no action required.
* Variances of [20%, or +/- 0.2] will change the status of the schedule to red or critical. These will be reported and require corrective action from the Project Manager in order to bring the SPI back in line with the allowable variance. Any corrective actions will require approval from the Project’s Steering Committee before it can be implemented. The Project Manager will update the Schedule Baseline and all related project documents and communicates to all stakeholders.
* The project’s risks are classified according to their likelihood of occurring and their potential impact on project’s costs and length. The probability of a risk impact the project is measuring according to the following: “very low”, “low”, “medium”, “high” and “very high”. The impact that each of the risks may have on cost, length and/or “other” are measuring in 3 levels: “low”, “medium” and “high”. The resulting of these classifications will score a project risk. The Steering Committee will deliberate on matters when the:
  + Risk score > 25
  + Separate score of “Cost”, “Schedule” or “Other” = 3 – “High”

# Overall Project Management

## Scope Management

### Objective

Ensure that project includes all the work required, and only the work required, to complete the project successfully.

### Project Documents and Deliverables[[4]](#footnote-5)

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Project Charter | Description of overall project scope, major deliverables, milestones and risks. |
| PD | Work Breakdown Structure | A breakdown of the project scope in controllable work packages, defined in project charters |
| PD | Scope Baseline | The approved version of project charters and WBS |
| DEL | Approved Deliverables | Approved versions of project deliverables |

### Scope Management Plan

The following activities will be performed

* Collect requirements of the scope of the project (or phase). Use of various sources (specialists, shareholders, end-users, etc.) and perspectives (technical/environmental/financial, internal/external). This provides the basis for definition of the project scope. This is performed at the start of each phase of project.
* Create a Work Breakdown Structure (WBS), provide a breakdown of the project scope in controllable work packages (in terms of responsibility, time, cost, risk, etc.).
* Define the project scope, project members will define the deliverables of each work package, including acceptance criteria. Project Manager to review and accept.
* Approval of scope baseline; Steering Committee to approve the project charters and WBS. This objectivates the acceptance process and helps the SPV to understand the key project dynamics.

## Direct, Manage and Control Work

### Objective

Provide overall management of the project work:

* Ensure that appropriate action is taken, based on the work performed.
* Ensure that stakeholders are allowed to understand the current state of the project, to recognize actions taken to address any performance issues and to have the visibility into the future project status

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Work Performance Reports | Representation of work performance information to create awareness and generate decisions of actions. Minimum elements[[5]](#footnote-6)   * Schedule, including SPI * Cost, including CPI and EVC * Risks, risk value > 50 * Change Requests and status   The report is based on the needs of team and stakeholders and will be communicated as defined in communication plan. |
| PD | Issue Log | A registration of problems, gaps or conflicts that occur unexpectedly which requires action, so they don’t impact the performance. This will help track and manage issues, ensuring that they are resolved. |

### Plan

The following activities will be performed:

* Implement and perform the project work and performance required, according to PMP.
* Compare actual performance against the objectives and baselines, ensure follow up
* Provide forecasts regarding scope, cost, schedule and risks
* Monitor implementation of approved changes
* Ensure that the project stays aligned with the business needs

## Integrated Change Control

### Objective

Ensure that all (documented) changes requests within the project are considered in an integrated manner, while addressing overall project risk.

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | (Approved) Change Requests | Change requests can be the output of various processes. Change request may be   * corrective or preventive action, defect repairs on deliverables or * Updates to formally controlled documents or Project Documents or additional ideas or content |
| PD | Change Log | Used to record all submitted change requests during the project |

A change request form is provided in Appendix VI

### Change Control Plan

The following activities will be performed:

* Assess impact of change requests and prepare decisions on change requests
* Ensure that approved change requests are incorporated into project deliverables
* Communicate decisions

Any project stakeholder may request a change and a request for change may have its origin in every process. Issues, found while the project work is performed, could lead to change requests and may modify (expand, adjust, reduce) any deliverable of project baseline (scope, schedule, cost) and is a formal proposal. Only approved changes will be incorporated into a revised baseline. This may have different consequences

* **Corrective action**. Action to realign the performance of the project work with Deliverables or PMP.
* **Preventive action**. Action that ensures the future performance of the project work is aligned with Deliverables or PMP.
* **Defect repair**. Action to modify a nonconforming product
* **Updates**. Changes to formally controlled Project Documents or plans (PMP)

Change requests are reviewed by the project team and, if certain thresholds are met, by the Steering Committee (acting as Change Control Board).

* Change requests that don’t have impact on project baselines and thresholds (SPI, CPI, risk value), will be assessed and decided upon by the Project Manager. However, if it appears that a single change request has impact on other existing risks, baselines then was initially known, the Project Manager will escalate to the Steering Committee.
* Change request that have an impact on project baselines, will be assessed and approved by the Steering Committee. These requests contain relevant information about the impact (on scope costs, schedule, risks, resources, etc)

Criteria to assess change requests may also go beyond the scope of the project.

* Legal restrictions or requirements, local or national
* Government or industry standards (quality standards, safety standards, etc.)
* Organizational policies or restrictions from AWECT

Inspections can be used to verify whether a change request has been followed up according to the approval.

## Manage Project Knowledge

### Objective

Ensure that project knowledge is captured and used to achieve (future) project's objectives. This includes creating and maintaining a learning culture within the project team.

[PMIS, include use of Engineering Software]

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Project Management Information System (PMIS) | Definition of   * Project team collaboration software * Configuration and Document Management |
| PD | Plant IT-architecture | Description of the plants’ IT structure, including timeline and budget (engineering, construction, operation) |
| PD | Lessons Learned Log | Used to record all submitted change requests during the project |

### Project Knowledge Plan

#### Team collaboration software

Daily team collaboration involves communication; storage; composing and reviewing documents; operational task management; project reporting. The choice of software is based on 3 criteria

* Country compatibility. The project team will work with various partners and advisors, working from a variety of countries. This limits the choice of software brands, because of restrictions in the use of specific suppliers (e.g. Google).
* Future proof. The software package used must be future proof as a whole. A variety of software applications increases the chance of mutual incompatibilities in the future, unacceptably high.
* Easy to use. The software must be easy to use and has a high level of integration.

Therefore, the choice of software package is Microsoft. Two exceptions: for storage, Box will be used because of the high security standards. A specific project tool Celoxis has been selected to manage schedule, costs, risks and perform reporting.

The software used for daily collaboration in the project, is provided in the figure below.



Figure 3 – Project team software vs purpose map

#### Engineering software

[The use of Engineering Software must be described here]

#### Document management

The project uses both Microsoft Teams and Box for documents. Microsoft Teams is used for (co)creation of documents. When a document has been finished, it must be stored on Box.



Figure 4 – Document flow Teams vs Box

#### Configuration management

File naming format: YYMMDD\_Filename\_version.

Example: 210208\_ProjectManagementPlanFP\_002

Draft versions: 001-099

Final versions: 100, 200

## Stakeholder

### Objective

The objective of this is to

* ensure that all relevant stakeholders are identified, analysed and engaged by the project team in an appropriate way
* identify and manage information needs from the project towards stakeholders during next phases (Definition and EPC phase) and vice versa

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Stakeholder Register | This register is used to classify and manage stakeholders’ during the project. |

### Stakeholder Plan

In order to engage the right stakeholder at the right time for the right purpose, stakeholders must be mapped out at the start of each phase of project. Stakeholders will be classified by both power and support (in current and target state), on a scale from 1-10. This will lead to 4 stakeholder categories, with appropriate engagement styles and communication needs. The figure below, illustrates the categorisation according to their current level of power and support.

**![A screenshot of a cell phone

Description automatically generated]()**

Figure 5 – Stakeholder categories

After classifying the stakeholders, strategies will be defined to engage stakeholders in support of project decisions, planning and execution. This includes consulting or co-creation with stakeholders who are the most effected by the project.

The stakeholder register must be reviewed frequently. Typical situations that could trigger a review:

* start of a new project phase
* changes in organizational structure (in- or outside the project)
* the importance of particular stakeholders to the project’s success changes

A first overview of the stakeholders involved, is provided in the project charters (Appendix I)

A template for a stakeholder register, is provided in Appendix IX

## Permits

### Objective

The objective is to define, obtain and manage permit requirements and lead times in order develop the project in a controlled way.

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| DEL | Permit Analysis | Analysis of permits needed for the project in each phase, including:   * Requirements * Lead times * Budget * Applicable phase (Definition, EPC, O&M) |
| PD | Permit impact assessment | Based on output from permit analysis; impact on project baselines and other (future) work packages |

### Permit Plan

Mapping of necessary permits in all phases for the project is highly specialized and locally bound work. For this, the SPV will call in a specialized (reputable) external advisor.

It is critical to start this process at a very early stage of the project, because the results of the analysis can have a major impact on the planning, budget and/or the scope of the project work. For example: adaptation of technical specifications tailored to the requirements for a use permit (e.g., for sound)

The project manager will have to ensure that the outcomes of the permit analysis will be analyzed on project impact. If applicable and approved, the changes must be incorporated in the project documents and baselines, including communication to the SPV and stakeholders.

## Health, Safety & Environment

### Objective

The objective is to:

* Protect project personnel from health and safety hazards, associated with the work
* Reduce environmental impacts
* Maintain compliance with all the applicable HSE Legal/Regulatory requirements
* Improve HSE culture among SPV and contractors’ employees

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | HSE plan | HSE standards, provided in next [paragraph](#_HSE_Plan) |
| DEL | Emission Model | Model of emissions during O&M phase |
| DEL | Environmental Impact Analysis (EIA) | Report of the impact of the project on the environment (land, retention times, emissions, social, health, aesthetic, etc) |

### HSE Plan

#### HSE Statement

Above all, performance on Health, Safety and Environment (HSE) is a licence to operate for the SPV.

The SPV will have as goal to limit incidents to an absolute minimum and to prevent any environmental disturbance. The focus of the SPV safety policy will be at prevention of incidents by SOP’s and checklists, supported by monitoring of leading and lagging indicators, according to the best international standards.

During all development phases, all partners and companies involved, will be assessed to

* be certified according to international standards
* having in place an HSE training program that improves risk awareness and safety culture
* encourage responsibility for health and safety for both workers, management and selected companies or subcontractors
* having in place a monitoring system for safety

#### HSE Standards

Below is shown what HSE standards will apply, per phase.

|  |  |  |  |
| --- | --- | --- | --- |
| Phase | Policy | Type of Work | Company Name |
| Feasibility Phase | ISO 9001:2015  ISO 14001:2015 | All types of work  (Consultancy / advisors & operational work) | W+G  [To be procured] |

**ISO 9001** This International Standards Organization (ISO) standard specifies requirements for an effective environmental management system, addressing environmental policy, organization, planning, performance, and auditing and review. Compliance with the standard is verified with a third-party review, expert panel review, or self-declaration. The standard includes a process for accreditation of procedures, giving the organization formal recognition

**ISO 14001** is an internationally agreed standard that sets out the requirements for an environmental management system. It helps organizations improve their environmental performance through more efficient use of resources and reduction of waste, gaining a competitive advantage and the trust of stakeholders.

**OHSAS 18001** is one of the International Standard for Occupational Health and Safety Management Systems. It provides a framework for the effective management of OH&S including all aspects of risk management and legal compliance. It addresses occupational health and safety rather than any specific product safety matters. In the near future this will be part of a new ISO 45001 version.

**ISO 45001**is an International Standard that specifies requirements for an Occupational Health and Safety (OH&S) management system, with guidance for its use, to enable an organization to proactively improve its OH&S performance in preventing injury and ill-health

## Schedule

### Objective

Ensure timely completion of the project. A detailed schedule will be provided, to:

* represent how and when the project will deliver the project scope
* serve as a tool for communication and managing stakeholders’ expectations
* serve as a basis for performance reporting

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Milestone list | Identifies all project milestones and indicates whether the milestone is mandatory (contract based) or optional |
| PD | Schedule Baseline | Approved version of a project schedule. This schedule can only be changed, through formal change control procedure and is used as a basis for comparison to actual results. Acceptance and approval of start and finish dates by the Steering Committee. |
| PD | Project Schedule | Gantt Chart of linked activities with planned data, durations (including planned start and finish date), milestones and critical path. |

### Schedule Plan

The Project Schedule will be created stating each project’s phase, with the deliverables identified in the Project Charter and decomposed in the Work Breakdown Structure (WBS). The accuracy of a Definition Phase will be noted in days. Activity sequencing will be used to determine the order of the work packages and assign relationships between project activities and define the project’s critical path.

Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development. Eventually, the Project Manager will obtain approval from the Steering Committee for the Schedule Baseline.

The Schedule Baseline will be reviewed every month and in a Gantt Chart. The Schedule Performance Index[[6]](#footnote-7) (SPI) will be used as a measure of how close the project is to be completed compared to the schedule.

The software tool used for scheduling, will be Celoxis[[7]](#footnote-8)

## Communication

### Objective

Provide and manage an integrated strategy, structure & tools to ensure that the communication is effective for all team members and stakeholders.

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| - | N/A | - |

### Communication Plan

#### Project information flow

A schematic overview of the information flow in the project, including the location that takes up project communication, is provide below. Notes:

* During the execution of the project work, project information will be generated (change requests can also be the result of this).
* This information is used to monitor and control the project work. Reviews of deliverables, necessary decisions and actions will be taken. In some cases, this may lead to change requests for approval by Steering Committee.
* Communication to team members, stakeholders and Steering Committee will take place. Possible organizational constraints from SPV companies will be taken into account



Figure 6 – Project information flow

#### Project information scheme

The Project Manager is responsible for effective communications on this project. Project meetings will be necessary. A scheme for this is provided below, stating which information to communicate, who is responsible for the communication, when to communicate it, and to whom to communicate each topic.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| TYPE | DESCRIPTION | FREQ. | DISTRIBUTION LIST | DELIVERABLE | OWNER |
| Project Team Meeting | Meeting to review action register and status | Weekly | Project Team | Action Register  Work Performance Report | Project Manager |
| Project Review (PMR) | Present metrics and status to team and sponsor | Monthly | Steering Committee, Project Team and Stakeholders | Management Summary | Project Manager |
| Project Gate Reviews | Present closeout of project phases and kick-off next phase | Ad Hoc | Steering Committee, Project Team and Stakeholders | Phase completion report and phase kick-off | Project Manager |

## Risk Management

### Objective

Ensure that project is executed with the lowest possible overall risk.

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Risk Register | Captures details of identified individual project risks. Requirements:   * Risk description, in a way that unambiguous understanding is possible, and risks can be distinguished from cause(s) and effect(s) * Risk owner * Risk scores: probability & impact (categorized) * Risk strategy (escalate, avoid, transfer, mitigate, accept) * Risk responses for mitigation; actions for implementation, describing budget and schedule activities |

The generic project risk register is provided in Appendix VI

### Risk Management Plan

The risk analysis must be performed at the start of each phase, but also on fixed points throughout the project and phases. In the Definition Phase, risks will be evaluated monthly.

The Project Manager is responsible for implementing the risk management and for frequent and effective risk evaluation. If needed, project team members, stakeholders, partners or suppliers may be engaged to provide input and support. Follow up actions of the top risks, must be a fixed part of the regular team meetings.

#### Risk definition

A risk description must be done in a way that unambiguous understanding is possible, and risks can be distinguished from cause(s) and effect(s). Risk owners must be assigned.

#### Risk score

Risks will be categorized and assessed from different angles: cost, schedule and other. The probability and (categorized) impacts on each category will be estimated and translated into a risk score for each individual risk.

|  |  |  |  |
| --- | --- | --- | --- |
| PROBABILITY | COST  (% of cost baseline) | SCHEDULE  (% of phase lead time) | OTHER |
| 1 = < 10% Very Low | 1 = < 0,5% Low | 1 = < 1% Low | 1 = Low |
| 2 = 10 - 30% Low | 2 = 0,5 - 1,5% Med | 2 = 1 - 3% Med | 2 = Med |
| 3 = 30 - 50% Med | 3 = > 1,5% High | 3 = > 3 % High | 3 = High |
| 4 = 50 - 70% High |  |  |  |
| 5 = > 70% Very High |  |  |  |

**Schedule**: % of schedule baseline (including lead time) is provided in Appendix II

**Cost**: % of cost baseline, provided in Appendix III.

**Other**: This category can be used to rate risk impact on project success, other than cost and schedule.

Risk score calculation = Probability x Cost x Schedule x ‘Other’ Category

**Escalation thresholds for Steering Committee: Risk score > 50**

#### Risk mitigation

After this, the appropriate risk strategy will be defined. Possible risk strategies are:

**Escalate** Appropriate when the project team agrees that a threat is outside the scope of the project, or that the response would exceed the Project Manager’s authority. Escalated risks are owned and managed at the level of the Steering Committee.

**Avoid** Strategy that aims to eliminate the effect of a risk. Avoidance may also include extending the schedule, reducing scope, etc.

**Mitigate** Take action to reduce or eliminate the probability of a threat.

**Transfer** Shifting ownership of a threat to a third party to manage the risk and bear the impact if the threat occurs. This often involves payment of a risk premium, terms and contracting.

**Accept** Acknowledge the existence of a threat but take no proactive action. This strategy may be appropriate for low-priority threats. Most common action is to establish a contingency reserve (including time, money or resources to handle the threat).

After the risk strategy is determined, appropriate actions will be defined by the owner and approved by the Project Manager. The follow up of these actions will be monitored in regular team meetings.

# Contract Management

## Procurement

### Objective

Objective is to ensure all service and resources can be procured for the project. For this project phase, it is about the selection and procurement of consultant (e.g. permit analysis, waste study, soil investigation, grid study, EIA, but also financial, legal and technical advisors) in order to develop the project

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Preselected supplier list | A list of suppliers with acceptable due diligence outcomes |
| PD | Procurement strategy | Determination per type of service and supplier:   * Project delivery method (consultancy contracts / turnkey) * Contract payment types (fixed price, cost plus, incentives) |
| PD | Requests for Proposal (Consultancy Services) | Document to procure advisors, stipulating the scope of work and criteria required. An example / template for this, is provided in Appendix VIII |
| PD | Selection criteria | Evaluation criteria to ensure the quotation/proposal selected offers the best project value for money |
| DEL | Firm bid for Basic Engineering | Proposal for Basic Engineering by W&G |
| DEL | Consultant contracts | Contracts for permit analysis, waste study, soil investigation, grid study, EIA, etc. If needed in this stage, contracts with financial, legal and technical advisors |
| DEL | Contract Digital Twin | Contract to develop and implement Digital Twin |
|  |  |  |

### Procurement Plan

#### Procurement policy

The procurement policy has to ensure the best value for the project and the SPV and must also align with organizational policies of the separate companies within the SPV.

Therefore, the procurement policy of the SPV aims for

* **Trustworthiness**: companies must have a steady and clean track record. Positive outcome of due diligence (KYC) is mandatory
* **Compliance with the HSE standards**, provided in chapter [HSE](#_Health,_Safety_&)
* **No corruption**. In order to prevent favouritism, kickbacks, etc; for each service, a minimum of 2 comparable proposals must be obtained.
* **Compliance with bank standards** (bankability). The company itself but also the results provided by the company, must be accepted by banks and financers to the project. Compliance with IFC Performance Standards[[8]](#footnote-9) and World Bank standards are mandatory.
* **Use of industry standard.** Procurement and contracting of EPC and O&M preferable via FIDIC silver book.
* **Best project value**. Valuable criteria for the project are in any case: cost, time & quality (performance). Other criteria might be added to this. Contracts could therefore be equipped with financial incentives in order to achieve these objectives. This could also mean that not always the proposal with the lowest price will be procured.

The Contract Manager is responsible to apply the procurement policy.

#### Procurement strategy

Different type of services from various types of suppliers and companies will be procured. The Project Manager must take inventory of type of services (consultancy or construction work) versus type of suppliers and type of payment method (fixed price, cost plus). This strategy will simplify and speed up the project and will also help managing the supplier.

## Financial Management

### Objective

Ensure that the project can be completed within the approved budget.

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Cost Baseline | Approved version of the project / phase budget, excluding management reserves. |
| PD | Cost Forecasts | Earned Value Calculation (EVC) |
| PD | Insurance Analysis | Check which insurances are needed for the SPV in order to create a bankable project |
| PD | Subsidy Check | Check whether subsidies can be obtained for (development of) the project |
| DEL | Cost Estimates  (CAPEX and OPEX) | Quantitative assessments of probable costs required, to complete Definition phase and future phase |
| DEL | Basis of Cost Estimates | Additional details, supporting the cost estimates. Assumptions, constraints, how it was developed, which risks are included, range/accuracy of estimates, etc |
| DEL | Business Case (updated) | [Description] |
| DEL | Financial Model (updated) | [Description] |

### Finance Plan

The Project Manager is responsible for managing and reporting on the project’s finance throughout the duration of the project phase. The Project Manager will present and review the project’s cost performance during the monthly project status meeting.

The Feasibility Phase Project control’s will be maintained in Celoxis, which includes the Costs Baseline. Financial performance of the Definition Phase Project will be measured through Earned Value Calculations (EVC) pertaining to the project’s cost accounts, at the level of WBS. Costs may be rounded to the nearest euro and work hours rounded to the nearest whole hour.

Cost Performance Index (CPI[[9]](#footnote-10)) will be reported on a monthly basis by the Project Manager to the Steering Committee. Variances of 5% or +/- 0.05 in the cost indexes will change the status of the cost to amber or ‘cautionary’. These will be reported and if it’s determined that there is no or minimal impact on the project’s cost or schedule baseline, then there may be no action required. Cost variances of 10%, or +/- 0.1 in the cost performance indexes will change the status of the cost to red or critical. These will be reported and require corrective action from the Project Manager in order to bring the cost performance indexes back in line with the allowable variance. Any corrective actions that require a project change request, must approved by the Project Steering Committee before it can be implemented.

The EVC will be compiled by the Project Manager and reported at the monthly project status meeting. If there are indications that these values will approach or reach critical stages before the subsequent meeting, the Project Manager will communicate this to the Project Committee immediately.

[Business Case, purpose, criteria, inputs, owner, typical triggers for amendments, etc]

[Financial Model, purpose, criteria, inputs, owner, typical triggers for amendments, etc]

## Contract & Legal

### Objective

The objective is to ensure all necessary contracts are prepared and signed, on behalf of the SPV

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Preselected financers list | A shortlist of financers, pre-selected by the SPV, who are willing to finance the project |
| PD | Contract Strategy (approach) | The contractual framework between project partners during all development phases |
| DEL | SPV constitution document | Local legal entity, established in target country, aligned with target county legislation |
| DEL | PPA | Power Purchase Agreement |
| DEL | Waste Concession | Signed Waste Concession |
| DEL | Site contract | Contract for land lease, land ownership (or other bankable land contract) |

### Contract & Legal Plan

In the Feasibility Phase, a preselection of possible project financers must be conducted.

Project contracts will be reviewed and negotiated between SPV and applicable counterpart.

The Project Manager will setup draft contracts for PPA, Waste Concession and Site. The Project Manager will interact with the Steering Committee. The Project Manager is mandated up to 50k to sign the contracts.

Besides financial value of a contract, the following checks are relevant to include as well:

* Compliance check with organizational policies of separate SPV members
* Possible shareholder approval of separate SPV members
* Due diligence of counter parts
* Risk/exposure check
* Penalties and/or exit clauses

The responsibility to perform these checks is at each separate member of the SPV. The Project Manager will coordinate this process

# Technical Management

## Engineering

### Objective

The objective is to define all technical specifications for the HE WtE plant, based on results of the feasibility study.

### Project Documents and Deliverables

|  |  |  |
| --- | --- | --- |
| Type | Name | Description |
| PD | Object Breakdown Structure (OBS) | Technical Lot Structure with high-level specifications |
| PD | Preselected supplier list | A list of suppliers for critical lots |
| DEL | Grid Study | Analysis what impact the project will have on the local grid, possibility to connect to the grid, etc. |
| DEL | Site Analysis | Analysis and report on soil conditions, climate, access, interfaces |
| DEL | Waste Characterization Study | Analysis and report on the quality and composition of the waste. Calorific value of the waste, is an important input for the busines case |
| DEL | Waste Management Study | [TBD] |
| DEL | Well water study | [TBD] |
| DEL | Plot Plan | [TBD] |
| DEL | Process Description | Basic overall functional process description |
| DEL | Plant configuration for main components | Design the envisaged configuration with the main components and determine the main parameters |
| DEL | Logistic design | Elaboration of the logistics of waste delivery and dimension the tipping area, bunker and waste cranes |
| DEL | Plant Block Diagram | Plant block diagram with the main mass flows |
| DEL | Block Flow Diagram | Diagrams of the process with all the main components |
| DEL | Heat & Mass balance | [TBD] |
| DEL | Feasibility Study Report | Comprehensive report with results and conclusions of all studies, stating technical Feasibility |

### Engineering Plan

[TBD Include a gantt chart with lead times of deliverables with responsible engineers would do, this is up to W&G to further detail]

[Decide who reviews produced documents, as W&G needs to be seen as contractor]

# Appendixes

Appendix I – Project Charter

Appendix II – Schedule Baseline

Appendix III – Cost Baseline

Appendix IV – Resource plan

Appendix V – Project Roles

Appendix VI – Change Request Form

Appendix VII – Risk Register

Appendix VIII – Template/example RFP for Consultancy Services

Appendix IX – Template stakeholder register

Appendix X – Scope of Work Basic Design Packages

Appendix XI – [TBD]

# Definitions

|  |  |
| --- | --- |
| **Abbreviation or Term** | **Definition** |
| Cost Baseline |  |
| Financial Close |  |
| Integration Processes | Processes and activities in order manage the interdependencies of the Operational Processes |
| Owner(s) | AWECT & Investors |
| PMP | Project Management Plan |
| QC | Quality Control |
| Scope Baseline |  |
| Schedule Baseline |  |
| SPV | Special Purpose Vehicle |
| Steering Committee | SPV Directors which will have authority over the Project |

1. https://en.wikipedia.org/wiki/Front-end\_loading [↑](#footnote-ref-2)
2. Gate process and gate criteria available on request [↑](#footnote-ref-3)
3. TMA library: <https://www.competencylibrary.com/> [↑](#footnote-ref-4)
4. Project Documents (**PD**) are internal documents and meant to support the project team and stakeholders. Deliverables (**DEL**) are desired output of project work. [↑](#footnote-ref-5)
5. CPI = Cost Performance Index; SPI = Schedule Performance Index; EVC = Earned Value Calculation [↑](#footnote-ref-6)
6. SPI - The schedule performance index (SPI) is a measure of how close the project is to being completed compared to the schedule. Adopted SPI calculation for the project dividing the percentage of project’s competition divided by the actual completition [↑](#footnote-ref-7)
7. [www.celoxis.com](http://www.celoxis.com) [↑](#footnote-ref-8)
8. [IFC Performance Standards](https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards) [↑](#footnote-ref-9)
9. CPI- The cost performance index is a ratio that measures the financial effectiveness of a project by dividing the budgeted cost of work performed by the actual cost of work performed. If the result is more than 1, as in 1.25, then the project is under budget, which is the best result. [↑](#footnote-ref-10)