# Bottle Packaging System- BAP002

## Project Management Plan


### Summary

This document contains the program organization for the supply of an automatic bottle packaging system to Lurisia, an Italian company specialized in the production of mineral water and beverages, along with the corresponding activity planning and economic/financial project indicators.



Produced By

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# Background and References

## The Object of Supply

The project's goal is to design, develop, and deliver the BAP002, a complete system capable of:

- Feeding bottles one by one from a pallet to the packaging equipment
- Moving the bottles to the packaging station
- Packing the bottles in a cardboard box (the number of bottles per box should be selected from a predetermined option list)
- Sending the box to the palletizing machine (not included in the delivery)

In particular, the delivery consists of:

- **One piece of equipment** for the automated packaging of bottles, BAP002, including a compressor
- **One spare parts kit** for the warranty period (1 year)
- **Training**, in class and on the job, for:
    - Up to 10 operators: one session of 5 hours (1 day)
    - Up to 3 supervisors: one session of 12 hours (two days)
    - Up to 4 maintenance technicians: one session of 24 hours (four days)
- A **complete set of manuals** in electronic format: technical, maintenance, and troubleshooting (3 copies of each manual)

## The Client

The client is the **Lurisia** company, an Italian company specialized in the production of natural mineral water and beverages. It was founded in 1940 and is based in Roccaforte Mondovì, a small town located in the province of Cuneo, in the Piedmont region of Italy.

Lurisia offers a range of products that includes still and sparkling mineral water, as well as a variety of soft drinks and beverages. The company takes pride in its commitment to sustainability and environmental responsibility employing eco-friendly practices throughout its production process, including the use of lightweight and recyclable materials for packaging.

The client will make available:

- An **area of 20x50 m**, flat, and lighted with 300 lux/$m^2$
- A **main electrical line**: 75 KVA, 380 V ± 7% for BAP002 and the compressor

## Expected Goals

### Strategic

The strategic goal of this project is to **enhance the client's market competitiveness** by elevating the quality and efficiency of their packaging process. By implementing improvements, the goal is to reinforce the client's overall performance while simultaneously reducing operational costs and optimizing resource utilization.

### Technical

The technical goal is to design and produce a reliable and efficient bottle packaging system, capable of fulfilling the client’s needs. In particular, the BAP002 should be able to handle bottle sizes of 200, 750, and 1000 ml, with a speed of handling of **1000 b/h** (**200 ml**), **600 b/h** (**750 ml**), and **400 b/h** (**1000 ml**).

### Economic

The economic goal is to complete the project within the client's allocated budget while offering a **cost-effective solution** capable of satisfying their requirements.

## Project Classification

The project is associated with a **moderate level of risk**. This implies that identifiable risks could affect the project but may not pose an extremely high or critical threat level.

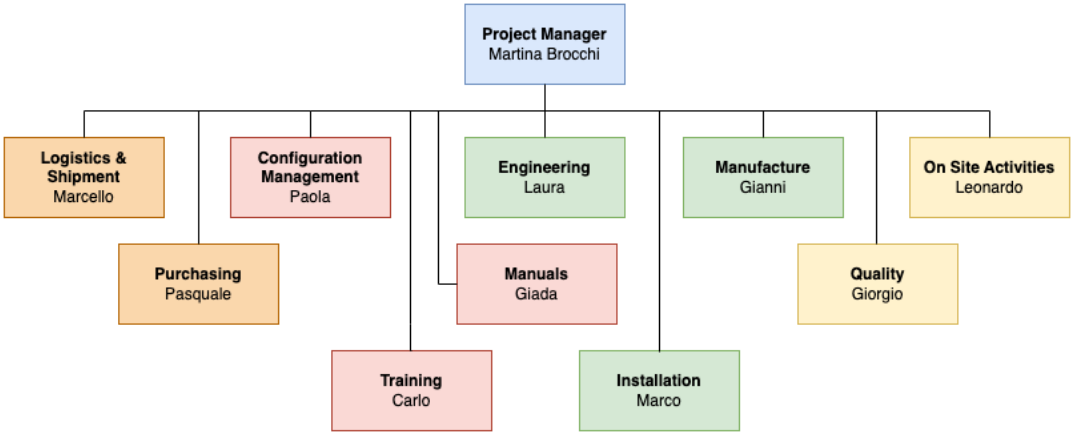
## Reference Contract Documents

The reference contract documents include:

- Project proposal
- Requests for Proposals or Requests for Quotations
- Contract Agreement
- Statement of Work
- Warranty Agreement
- Technical specifications
- Acceptance Testing Criteria

# Project Structuring

## OBS – Organizational Breakdown Structure




## Interfaces

Throughout the entire project lifecycle, the project team will proactively engage in close collaboration with the customer's project team. This collaborative approach is fundamental to ensuring the achievement of project goals and the comprehensive fulfillment of requirements.

## ABS – Activity Breakdown Structure

The project will consist of the following activities:

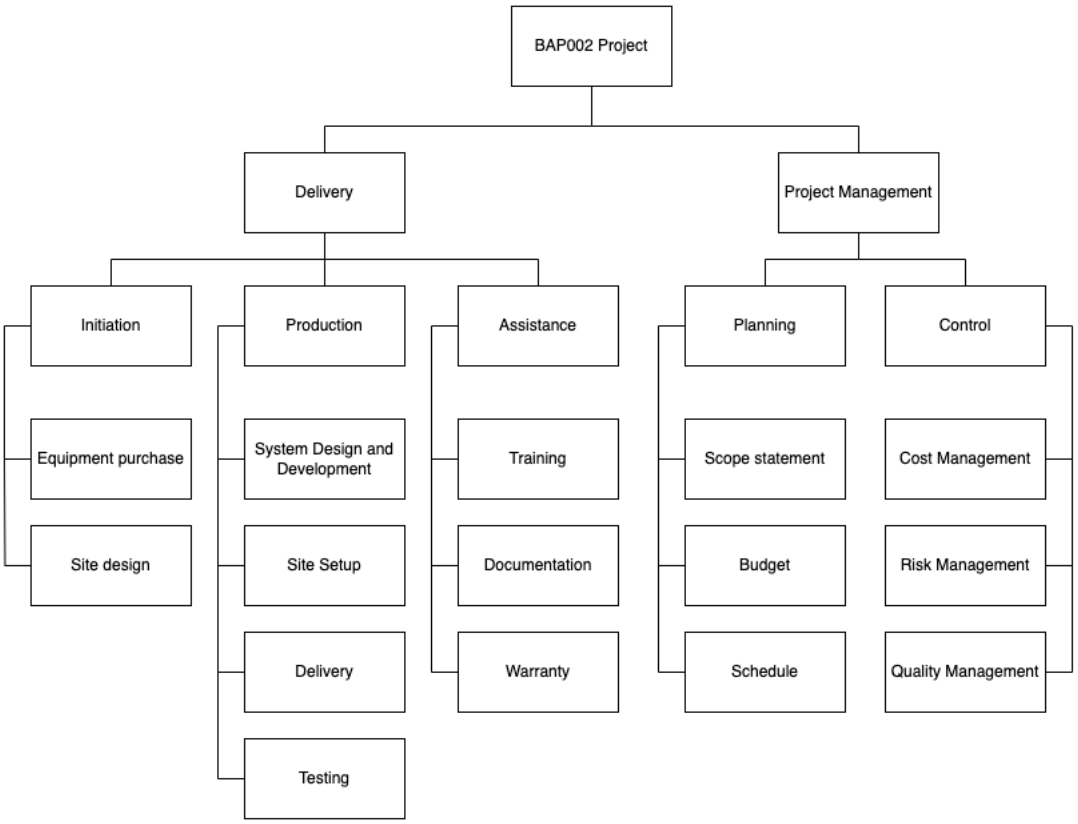
- Detailed Design Spec
- Equipment Customization
- Equipment Manufacture
- Buy third-party supply
- Inside Integration & Test
- Site design
- Manuals Customization & Production
- Training set up
- Shipment
- Site set up
- Equipment installation
- Commissioning
- Acceptance Test
- Training
- Support to start
- Warranty
- Project Management

## PBS – Product Breakdown Structure

The major deliverables and activities that will compose the final product are:

- Delivery of n. 1 BAP002 (including Compressor)
- Spare parts kit
- Site setup
- Logistics
- Installation
- Tests
- Manuals
- Training
- Assistance to the Customer people (operators, Supervisors, Technicians)

## WBS – Work Breakdown Structure



## Procurement Plan

The Procurement Plan aims to ensure timely procurement, adherence to budgetary constraints, and selection of reliable suppliers.

### Equipment Purchase

The procurement of the required equipment will follow the procedure outlined below:

1. **Identification of equipment specifications**: determine the technical specifications, features, and performance criteria required for the equipment.
2. **Supplier identification and evaluation**: research and identify potential suppliers/vendors capable of providing the required equipment, and evaluate them based on their experience, reputation, financial stability, technical capabilities, and ability to meet delivery deadlines.
3. **Request for Quotations (RFQ) or Proposals (RFP)**: prepare and issue RFQs or RFPs to shortlisted suppliers, clearly stating the equipment specifications, delivery timelines, warranty requirements, and any other relevant terms and conditions.
4. **Evaluation and selection**: evaluate the received quotations or proposals based on predefined evaluation criteria, such as cost, quality, compliance with specifications, delivery timeframes, and after-sales support. Select the supplier offering the best value for money and meeting the project's requirements.
5. **Negotiation and finalization**: initiate contract negotiations with the selected supplier, discussing pricing, warranties, support services, and other contractual terms. Finalize the contract with the chosen supplier, ensuring all parties have a clear understanding of their obligations and responsibilities.

### Purchase of Services

If needed, the purchase of services will follow the procedure outlined below:

1. **Identify Required Services**: determine the specific services required for the successful implementation of the BAP002 project.
2. **Supplier identification and evaluation**: research and identify potential service providers with expertise in the required services, and evaluate them based on their experience, track record, technical capabilities, availability, and ability to meet project timelines.
3. **Request for Proposals (RFP)**: prepare and issue RFPs to shortlisted service providers, clearly defining the scope of work, deliverables, timelines, and any other specific requirements.
4. **Evaluation and selection**: evaluate the received proposals based on predefined evaluation criteria, such as experience, technical expertise, proposed methodology, pricing, and ability to meet project objectives. Select the service provider that offers the most suitable combination of technical competence, cost-effectiveness, and alignment with project requirements.
5. **Contract Negotiation and Finalization**: Initiate contract negotiations with the selected service provider, discussing pricing, service levels, performance indicators, and other contractual terms. Finalize the contract, ensuring mutual agreement on all terms and conditions.

## Measurement and Control Methodologies

To effectively control and monitor the project's progress, the Project Team will utilize a range of well-established project management methodologies and procedures, such as:

- GANTT chart
- Earned Value Management
- Stakeholders' engagement
- Quality control procedures
- Risk management

By employing these techniques, the team will ensure that the project stays on track and successfully meets its objectives.

## Reporting

The team will redact **weekly project status reports** that provide an overview of completed tasks, upcoming activities, risks, and issues. These reports will be shared with stakeholders to maintain transparency and ensure everyone is informed.

## Supporting Managerial Activities

### Risk Management

The project team's responsibility is to recognize, evaluate, and minimize risks associated with the project at every stage of its lifecycle. To proactively anticipate potential issues, a comprehensive Risk Analysis was performed. Based on the analysis, the project has been categorized as **Risk Class B**

| **Property of the project** | **Risk value** |
|---|---|
| **Territorial spread of facilities/services**<br>(1 Genoa - 2 Italy - 3 EU – 4 Europe - 5 Extra Europe - 0 Company) | 2 |
| **The complexity of the process to be managed, of the product/system to be delivered, and of the service to be provided**<br>(1 simple - 2 medium - 3 complex - 4 very complex) | 2 |
| **Participation in Consortia or Complex Subcontracting**<br>(A value from 1 to 5 will be assigned based on the number of actors, the role, the position of the company as the principal or as the representative, etc.) | 0 |
| **Experience with the Type of project**<br>(1 done successfully several times - 2 done several times with some criticality - 3 done several times with several criticalities - 4 done a few times - 5 first time) | 2 |
| **The economic value of the project**<br>(1 less than 50 000 € - 2 between 50 000 € and 500 000 € - 3 between 500 000 € and 2 500 000 € - 4 between 2 500 000 € and 5 000 000 € - 5 more than 5 000 000 €) | 3 |
| **Project margin**<br>(1 more than 50% - 2 between 30% and 50% - 3 between 20% and 30% - 4 between 5% and 20% - 5 less than 5%) | 3 |
| **Relevance of the project to the client**<br>(1 little relevant - 2 relevant - 3 business critical - 4 life critical) | 3 |
| **Importance to the client**<br>(It will be assigned a value from 1 to 5 depending on the strategic importance of the client) | 3 |
| **TOTAL** | **18** |

Key risks that have been identified in this project include:

1. **Schedule delays**: These delays may arise due to dependencies on external factors, delays in the delivery of equipment or services, or unexpected obstacles encountered during the project execution.
2. **Technical challenges**: The project may face difficulties resulting from limitations in technology or compatibility issues between different components or systems involved.

The project team will prioritize managing these risks to ensure the successful completion of the project within the defined timeframe and without compromising the desired outcomes.

## Quality Management

Implementing effective quality management strategies is essential to ensure that the project meets the desired standards and delivers high-quality results. Within the team, there is a specific role for project quality control and management: the person who fulfills this role will be responsible for developing and implementing a **Quality Management Plan**.

Periodic inspections and tests will be conducted to verify that the project follows best practices, industry standards, and specifications. This will allow for the early identification of errors, non-conformities, or deficiencies, providing opportunities for improvement.

Proper documentation of this process (e.g., recording inspection results, test reports, and non-conformity reports) facilitates traceability and provides evidence of compliance with quality standards.

## Development

The project will be developed using the **Waterfall methodology**, a sequential approach where the project progresses through linear phases, such as requirements gathering, design, development, testing, and deployment. This methodology suits well the project since there are stable requirements and changes are minimal.

## Configuration Management

Within the team, there is a specific role for the project's configuration management. The person who fulfills this role will be responsible for managing the product's hardware and software configurations throughout the project's lifecycle.

## Acceptance Criteria/Testing

The team will develop **testing procedures** based on the customer's signed *Acceptance Testing Criteria* document to verify that the product meets the customer's requirements. The testing procedures will encompass various aspects of the product, including its features, usability, reliability, and any specific industry or regulatory standards that need to be met.

### Phase Reviews

The team will conduct a review at the end of each phase of the project, to ensure that a stage is completed before moving on to the next one.

## Master Plan

### Contract Plan

The Contract Agreement has been signed by the project team and the customer. This document represents the legally binding agreement between the companies and includes the object of the contract, deliverables, project schedule, price, payment terms, and warranties.

### Master Plan and Associated Milestones

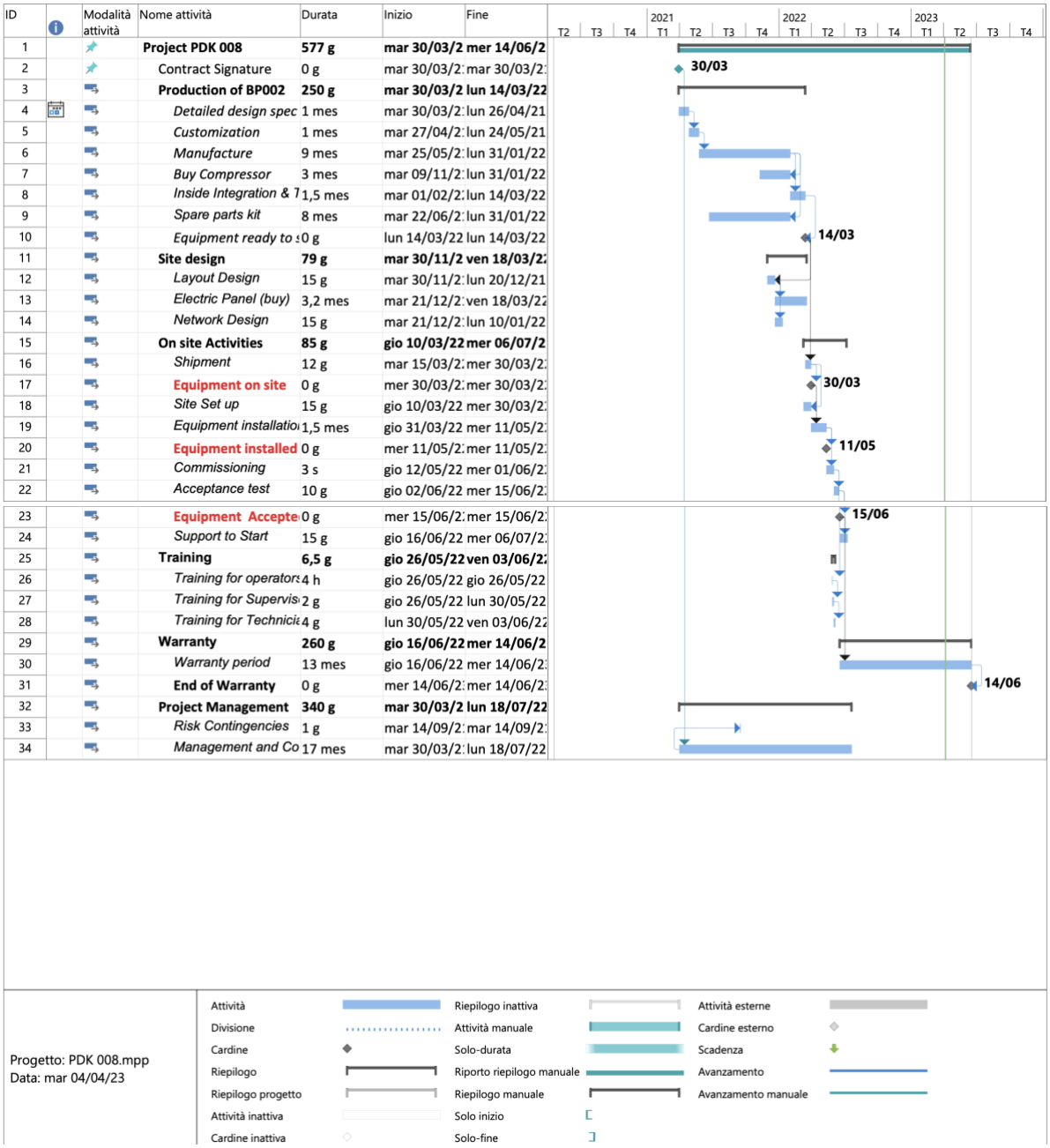
The contract has been signed on 30$^{Th}$ March 2021, when the project officially started.

In particular, the project milestones defined in the contract are:

1. **$T_0$**: 30$^{Th}$ March 2021
2. **Delivery on site**: $T_0$ + 12 months
3. **End of installation**: $T_0$ + 14 months
4. **Acceptance**: $T_0$ + 15 months
5. **End of warranty**: $T_0$ + 27 months

The milestones are highlighted in the GANTT chart reported on the next page, as well as all the other project activities.

## Project GANTT



| ID | Modalità attività | Nome attività | Durata | Inizio | Fine |
|---|---|---|---|---|---|
| 1 | | **Project PDK 008** | **577 g** | **mar 30/03/2** | **mer 14/06/2** |
| 2 | | Contract Signature | 0 g | mar 30/03/2 | mar 30/03/2 |
| 3 | | **Production of BP002** | **250 g** | **mar 30/03/2** | **lun 14/03/22** |
| 4 | | *Detailed design spec* | 1 mes | mar 30/03/2 | lun 26/04/21 |
| 5 | | *Customization* | 1 mes | mar 27/04/2 | lun 24/05/21 |
| 6 | | *Manufacture* | 9 mes | mar 25/05/2 | lun 31/01/22 |
| 7 | | *Buy Compressor* | 3 mes | mar 09/11/2 | lun 31/01/22 |
| 8 | | *Inside Integration & T* | 1,5 mes | mar 01/02/2 | lun 14/03/22 |
| 9 | | *Spare parts kit* | 8 mes | mar 22/06/2 | lun 31/01/22 |
| 10 | | *Equipment ready to s* | 0 g | lun 14/03/22 | lun 14/03/22 |
| 11 | | **Site design** | **79 g** | **mar 30/11/2** | **ven 18/03/2** |
| 12 | | *Layout Design* | 15 g | mar 30/11/2 | lun 20/12/21 |
| 13 | | *Electric Panel (buy)* | 3,2 mes | mar 21/12/2 | ven 18/03/2 |
| 14 | | *Network Design* | 15 g | mar 21/12/2 | lun 10/01/22 |
| 15 | | **On site Activities** | **85 g** | **gio 10/03/22** | **mer 06/07/2** |
| 16 | | *Shipment* | 12 g | mar 15/03/2 | mer 30/03/2 |
| 17 | | **Equipment on site** | 0 g | mer 30/03/2 | mer 30/03/2 |
| 18 | | *Site Set up* | 15 g | gio 10/03/22 | mer 30/03/2 |
| 19 | | *Equipment installatio* | 1,5 mes | gio 31/03/22 | mer 11/05/2 |
| 20 | | **Equipment installed** | 0 g | mer 11/05/2 | mer 11/05/2 |
| 21 | | *Commissioning* | 3 s | gio 12/05/22 | mer 01/06/2 |
| 22 | | *Acceptance test* | 10 g | gio 02/06/22 | mer 15/06/2 |
| 23 | | **Equipment Accepte** | 0 g | mer 15/06/2 | mer 15/06/2 |
| 24 | | *Support to Start* | 15 g | gio 16/06/22 | mer 06/07/2 |
| 25 | | **Training** | **6,5 g** | **gio 26/05/22** | **ven 03/06/2** |
| 26 | | *Training for operators* | 4 h | gio 26/05/22 | gio 26/05/22 |
| 27 | | *Training for Supervis* | 2 g | gio 26/05/22 | lun 30/05/22 |
| 28 | | *Training for Technicia* | 4 g | lun 30/05/22 | ven 03/06/2 |
| 29 | | **Warranty** | **260 g** | **gio 16/06/22** | **mer 14/06/2** |
| 30 | | *Warranty period* | 13 mes | gio 16/06/22 | mer 14/06/2 |
| 31 | | **End of Warranty** | 0 g | mer 14/06/2 | mer 14/06/2 |
| 32 | | **Project Management** | **340 g** | **mar 30/03/2** | **lun 18/07/22** |
| 33 | | *Risk Contingencies* | 1 g | mar 14/09/2 | mar 14/09/2 |
| 34 | | *Management and Co* | 17 mes | mar 30/03/2 | lun 18/07/22 |



Progetto: PDK 008.mpp
Data: mar 04/04/23

| | | |
|---|---|---|
| Attività | Riepilogo inattiva | Attività esterne |
| Divisione | Attività manuale | Cardine esterno |
| Cardine | Solo-durata | Scadenza |
| Riepilogo | Riporto riepilogo manuale | Avanzamento |
| Riepilogo progetto | Riepilogo manuale | Avanzamento manuale |
| Attività inattiva | Solo inizio | |
| Cardine inattiva | Solo-fine | |

# Technical Budget

## Cost, Revenues, and Margins

The total estimated cost of the project amounts to €1,080,620. This amount covers various costs, such as the production costs of BAP002, site design, equipment purchase, production of manuals, user training, on-site activities, warranty, and project management activities.

The price for the whole project is agreed to **€1,450,000**.

## Business Plan

A comprehensive business plan will be created to outline key aspects such as market opportunity, target customers, sales strategy, and pricing model.

## External Costs Plan

A detailed plan will be produced to budget and track external costs, such as equipment purchasing, hiring of external vendors and contractors, legal fees, and marketing expenses.

## Billing and Collections

As stated in the contract, the payments are planned as follows:

1. 20% at the order
2. 20% at the delivery on site
3. 20% at the end of the installation
4. 40% at the final acceptance

## EVA Analysis

To measure the project's financial performance based on the residual wealth, the Economic Value Added calculation is performed. The residual wealth is calculated by deducting the cost from the profit and adjusting for taxes.

| | |
|---|---|
| Price / Revenue | 1 450 00 € |
| Total costs | - 1 080 620 € |
| EBIT | 369 380 € |
| Taxes | - 348 000 € |
| **Net income** | **21 380 €** |

As the net income is positive, the project contributes to the company's wealth growth.