Clean Hydrogen Partnership

# Project charter for hydrogen project development

Hydrogen Valleys Facility | Knowledge Centre

2025

Roland Berger

# The H2V Facility delivers dedicated support to hydrogen practitioners via PDA services, the H2V Knowledge Centre and the H2V Platform

The Hydrogen Valleys Facility

h2v.eu

## Dedicated support via the Hydrogen Valleys Facility by Clean Hydrogen Partnership

### 1 Project Development Assistance

Provision of dedicated Project Development Assistance (PDA) for Hydrogen Valleys projects towards Final Investment Decision

### 2 H2V Knowledge Centre

Sharing & dissemination of knowledge and provision of capacity building for the broader hydrogen community

### 3 H2V Platform

Maintenance & extension of the Hydrogen Valley Platform to enhance its positioning as the global one-stop-shop for hydrogen flagship projects

**Delivery partners**

Roland Berger | worley | Inycom

Aspirational target 2030

**50** Hydrogen Valleys operational/under construction

within the EU

Source: Roland Berger

# This document is part of the H2V Knowledge Centre that offers hydrogen practitioners knowledge material in written and interactive formats

The H2V Knowledge Centre

## Structure and scope of the H2V Knowledge Centre

| | Self-service Knowledge Material | Interactive Formats |
|---|---|---|
| Commercial<br>Technical<br>Regulatory<br>Valley governance | • Knowledge material specifically developed as part of the H2V Facility project<br>• Links and information to other third-party resources and material | • Webinars with content experts (Roland Berger, Worley and external speakers)<br>• Project Development Assistance experience sessions with Hydrogen Valley practitioners |

## Target audience

- Hydrogen Valleys
- Project developers
- National, regional and local authorities
- Investors
- Other hydrogen practitioners

Source: Roland Berger

# Disclaimer

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Source: Roland Berger

# This document aims to support Hydrogen Valleys in outlining all key elements of their hydrogen project within one formal document – the Project Charter

Key objectives and content of this document

## Key objectives

Develop a **central project document** outlining all key elements and information of the $H_2$ project in one place

## Key content

- **A** **Project outline** (incl. objectives, description and business needs)
- **B** **Project breakdown and Work Breakdown Structure**
- **C** **Schedule and key milestones**
- **D** **Business plan and budget**
- **E** **Risks and interdependencies**
- **F** **Project governance**

Source: Roland Berger

# A project charter is essential for Hydrogen Valleys to align stakeholders, define objectives and guide efficient execution

Relevance of a project charter for Hydrogen Valley developers

**The complex project and stakeholder set-up of a Hydrogen Valley …**

1. **Management of a complex stakeholder set-up** with diverse interests, oftentimes also involving public and private stakeholders across multiple regions and countries
2. **Need for multi-project coordination** by aligning dependencies, milestones and interconnected projects within a Hydrogen Valley
3. **Complex regulatory and financial risk management**

**… requires a binding project framework with central information management**

- Aggregation of **all critical information** in **one place**
- Provision of a **common understanding among all** external and internal project **parties**
- **Support for all operational teams** via commonly shared clear pathways and objectives

Source: Roland Berger

# Key elements of a project charter include the project outline, work breakdown structure, schedule and milestones, budget, risks and a governance framework

## Structure of a project charter

### Project charter

**A Project outline**

- Background and business needs
- Objectives & outcome
- Project description and scope
- KPIs (schedule, budget, safety)
- Target commercial structure
- Contracting and procurement strategy

**B Project breakdown and Work Breakdown Structure (WBS)**

- Development:
  - Feasibility study
  - Commercials
  - Stakeholder Mgmt.
  - Engineering
- Construction

**C Schedule & key milestones**

- Schedule planning
- Key milestones until Commercial Date of Operations
  - Concept study developed
  - FID taken
  - etc.

**D Business Plan and Budget**

- Business case: key assumptions, P&L, cash flows, BS
- CAPEX and Budget details
- Financing structure and funding needs

**E Risks and interdependencies**

- Key project risks
- Key interdependencies
- Mitigation measures

**F Project governance**

- Project organization
- Staffing needs
- Key stakeholders
- Specific committees & reporting
- Roles & Responsibilities

Source: Roland Berger

# The documentation control provides information on the project charter document, the revision history and the sign-off

## Documentation control

**Documentation control**

**A.** Project outline

**B.** Project breakdown & WBS

**C.** Schedule & key milestones

**D.** Business plan & Budget

**E.** Risks & inter-dependencies

**F.** Project governance

### Document information

| | Information |
|---|---|
| Document ID | Project Charter |
| Document owner | Project Board |
| Issue date | TBD |
| File name | Project Charter.XYZ |
| Author | Project manager |

### Document revision history

| Version | Issue date | Changes |
|---|---|---|
| 1.0 | DD.MM.YYYY | xx |
| 1.1 | DD.MM.YYYY | xx |
| 1.2 | DD.MM.YYYY | xx |
| XX | DD.MM.YYYY | xx |
| XX | DD.MM.YYYY | xx |

### Project charter sign-off

| Hydrogen Valley lead developer | |
|---|---|
| Name | XX/XX/XXX |
| Position | xx |
| **Signature and date** | |

| Hydrogen Valley project co-sponsor(s) | |
|---|---|
| Name | XX/XX/XXX |
| Position | xx |
| **Signature and date** | |

Source: Roland Berger

# The project outline describes the most important information of the project, incl. business model, main KPIs, technical and governance aspects

## Project outline (1/6)

- Documentation control
- **A. Project outline**
- B. Project breakdown & WBS
- C. Schedule & key milestones
- D. Business plan & Budget
- E. Risks & inter-dependencies
- F. Project governance

### Project overview

**Description**

***Details about the project, context and background***

**Business model**

***Details about the business model***

**Project location**

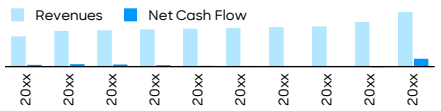
***Details about the project location***

**Main KPIs**

**Returns** [EUR m; %]

| | Overall project |
|---|---|
| Investment | |
| MOIC [x] | |
| ROE [%] | |
| IRR [%] | |

**Cash Flow** [EUR m]




### Technical

**Block-flow chart**

***Details about the value chain*** *(hydrogen production, storage, transportation, end use)*

**Procurement strategy**

***Details about procurement management process, pricing and supplier selection***

**Plan-on-a-page**

| Milestone | Deadlines |
|---|---|
| Concept study | Qx 20xx |
| FEED study | Qx 20xx |
| FID | Qx 20xx |
| Financial close | Qx 20xx |
| Start of construction | Qx 20xx |
| COD | Qx 20xx |

### Governance

**Project organization**

- Project organization
- Staffing needs
- Key stakeholders
- Specific committees & reporting
- Roles & Responsibilities

**Main stakeholders**

- Hydrogen Valley project organization
- Hydrogen Valley project partners
- Lenders
- EPC contractors
- Suppliers & O&M contractors
- Others

Source: Roland Berger

# Next, the background, business needs, key objectives, and expected outcomes of the Hydrogen Valley project are outlined

## Project outline (2/6)


Documentation control

**A. Project outline**

**B.** Project breakdown & WBS

**C.** Schedule & key milestones

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### Background and business needs

***Description of project background and business needs. Aspects could include:***

- *Contribution to overarching EU or national policy objectives*
- *Background regarding overall market environment*
- *Other*

### Objectives & output

***Description of project objectives along the $H_2$ value chain***

- *$H_2$ production and renewable energy sourcing*
- *$H_2$ storage*
- *$H_2$ transportation*
- *$H_2$ end use*

***Description of expected project output***

- *regarding Hydrogen Valley production, storage and end use targets*
- *regarding social end economic impacts of the project (incl. job creation, regional development, contribution to overarching political goals)*

Source: Roland Berger

# An overview of the key project KPIs and their targets for the development and construction phases must be established

## Project outline (3/6)


Documentation control

**A. Project outline**

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Exemplary KPIs – to be adjusted depending on scope and specifics of Hydrogen Valley

### Project KPIs for the development and construction phase of the Hydrogen Valley

#### Competitiveness

- **Levelized cost of Hydrogen (LCOH) [EUR /kg $H_2$]:** Average cost per kilogram of hydrogen produced over the lifetime of the project, incl. CAPEX and OPEX
- **Availability Factor (%):** Percentage of time the production plant is operational and capable of producing hydrogen. Higher availability reduces downtime losses, ensuring more consistent supply and stronger market position
- **Specific Energy Consumption (kWh/kg $H_2$):** The total amount of energy required to produce one kilogram of hydrogen. Lower values mean cheaper production and better competitiveness

#### Schedule

- **Schedule variance:** Actual vs. planned progress of the main milestones of the project
- **Permitting progress**: Percentage of necessary permits acquired versus those required for the project
- **Critical Path Progress (%):** Actual progress made on tasks that lie on the project's critical path, indicating risk of overall delay.

#### Budget

- **Incurred development/construction costs versus budget or cost estimated**: to be measured during development and construction phases
- **Total project cost/Project estimated cost** to be measured at financial close

#### Quality

- **During construction:** defects rate, rework rates, nonconformance incidents (NCRs), etc.
- **(Pre-)commissioning:** Adherence to performance guarantees (e.g., output capacity, production efficiency, operating characteristic as per contract, etc.)

Source: Roland Berger

# The Hydrogen Valley needs to be described in terms of project scope with key components along the value chain and in terms of technical design

## Project outline (4/6)


Documentation control

**A. Project outline**

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### Hydrogen Valley project description and scope

#### Project location

***Project location map with description of project location***

#### Value chain

| Primary energy sourcing | $H_2$ production | $H_2$ storage, transport, distribution | $H_2$ end use |
|---|---|---|---|
| Description of assets (feedstock, e.g., type of renewables/ fossil fuels) | Description of assets (production, e.g., electrolysis, thermo-chem. conversion, by-product)) | Description of conversion technology (e.g., $H_2$ compression, $NH_3$ synthesis etc.), Type of transport (e.g., ship, pipeline, truck), Type of storage (e.g., tank, geological, terminals), Separation/reconversion, Distribution (e.g., truck, pipeline, HRS) | Description of end uses in: Industry (e.g., refining, chemicals, steel)<br>Energy (e.g., heating, grid)<br>Mobility (e.g., air, maritime) |

#### Technical design

***Description and outline of technical design***

- **Project scope:** *Description of project scope (location, value chain, technical design)*
- **Key components and equipment:** *Description of key components (e.g., assets along the value chain, infrastructure, monitoring and control systems)*
- **Phasing & Timeline:** *Description of major milestones (e.g., feasibility stage, FID stage, design engineering stage, construction stage, date of COD)*
- **Offtakers:** *Description of (potential) offtakers per end use segment (industry, energy, mobility)*

Source: Roland Berger

# The target commercial structure provides a clear framework for aligning cashflows and contracts, but requires adaptation to the specific project context

## Project outline (5/6)


Documentation control

**A. Project outline**

**B.** Project breakdown & WBS

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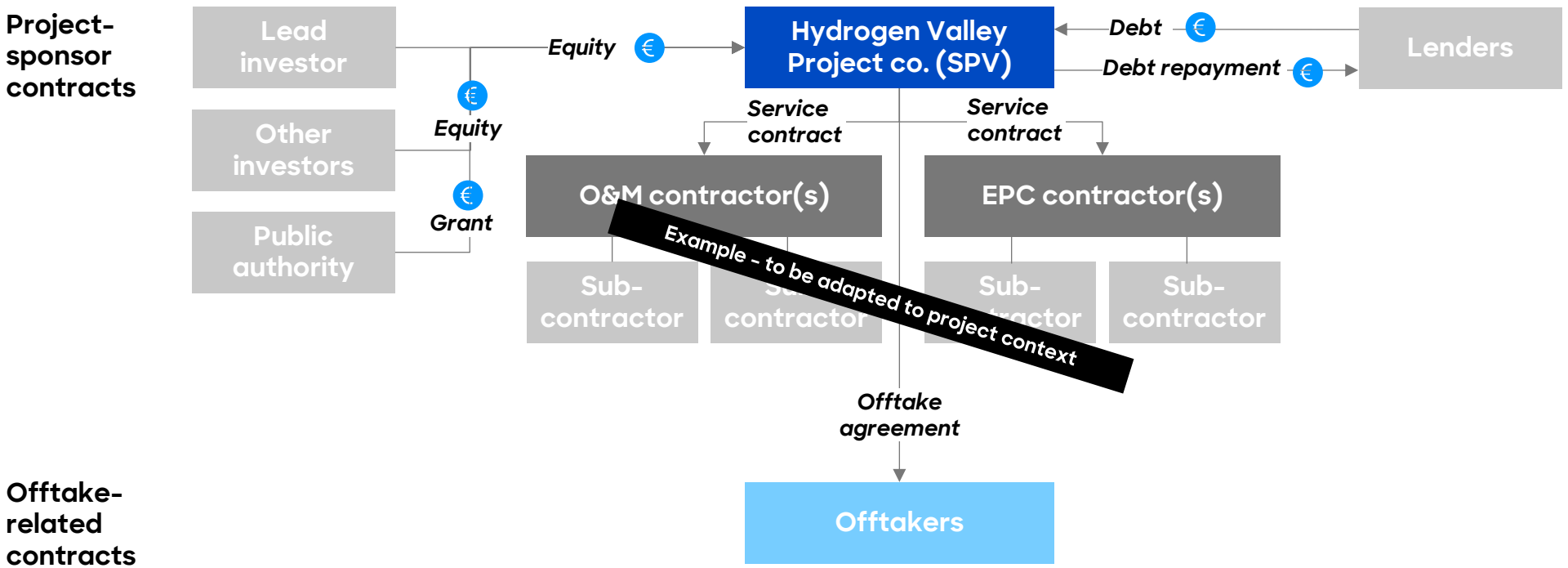
### Hydrogen Valley target commercial structure




Source: Roland Berger

# The Hydrogen Valley procurement strategy covers work packages and scopes as well as contract statuses for various assets

## Project outline (6/6)


Documentation control

**A. Project outline**

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For a detailed set-up of the procurement and contracting strategy, see the **document "Contracting Strategy"** within the technical section of the H2V Knowledge Centre

### Hydrogen Valley procurement and contracting strategy

#### Procurement & contracting strategy

- *Description of work packages and scopes*
- *Description of market screening results and strategy approach*
- *Description of negotiation position*
  - *Quotation strategy*
  - *Target supplier structure*
  - *Evaluation criteria*
- *Description of supplier short-list*

#### Contract type and status

| | Asset 1 | Asset 2 | Asset 3 | Asset 4 | Asset … |
|---|---|---|---|---|---|
| **Engineering** | **Contract type:** fixed rate<br>**Status**: awaiting signing | | **Contract type:** open-book lump sum<br>**Status:** screening ongoing | | |
| **EPC** | **Contract type:** lump-sum EPC contract<br>**Status**: signed | | | | |
| **Civil works** | **Contract type:** service contract, fixed-price with variable performance<br>**Status:** tender [illegible] | | | | |
| **Main equipment** | **Contract type:** tbd<br>**Status:** waiting for EPC | | **Contract type:** xxx<br>[illegible] | | |
| **Equipment installation** | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status | [illegible] type<br>[illegible] | Contr. type<br>Status |
| **(Pre) commissioning** | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status |
| **Other (tbd)** | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status | Contr. type<br>Status |

Example

Source: Roland Berger

# The work breakdown structures the Hydrogen Valley in development phase, construction phase and commissioning phase to ensure a systematic approach

## Project breakdown & WBS (1/3)


Documentation control

A. Project outline

B. Project breakdown & WBS

C. Schedule & key milestones

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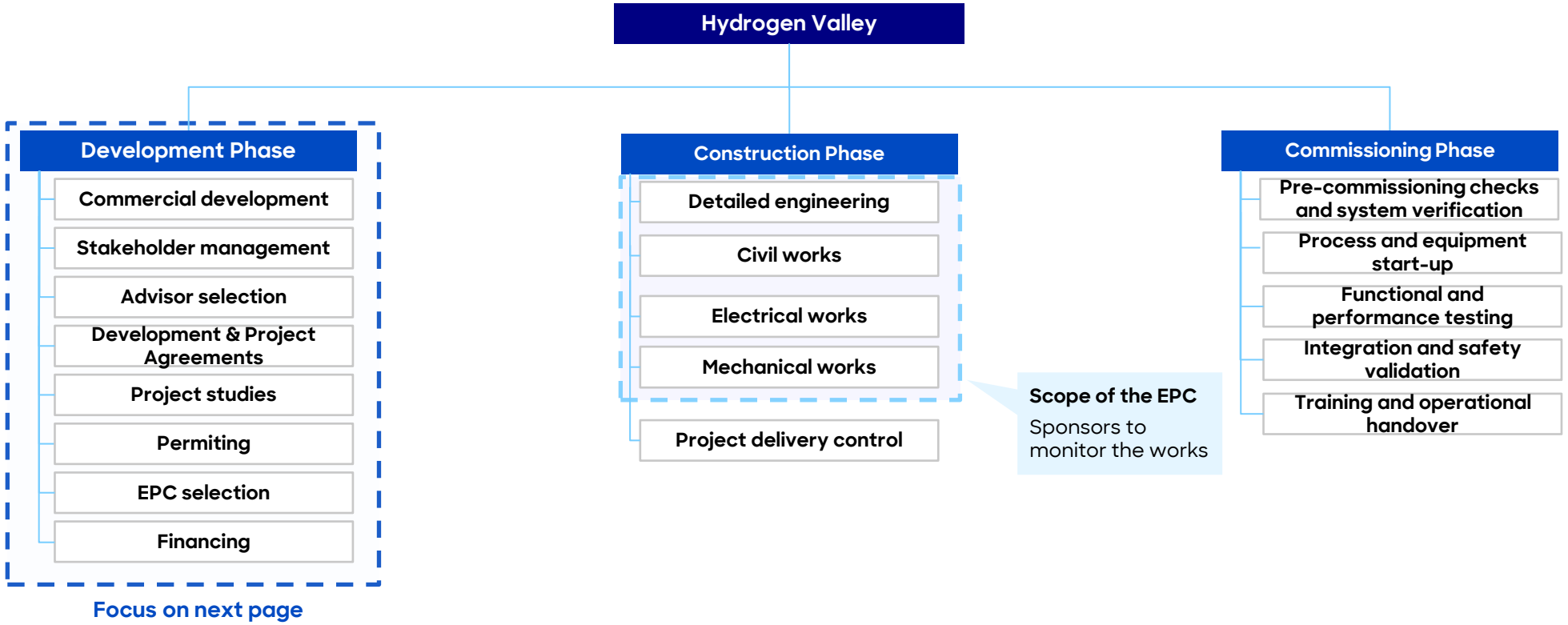
F. Project governance


### Work breakdown structure




Source: Roland Berger

# The development phase is organized into distinct workstreams with clearly defined scopes, deliverables, and assigned responsibilities for accountability

## Project breakdown & WBS (2/3)


Documentation control

A. Project outline

B. Project breakdown & WBS

C. Schedule & key milestones

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F. Project governance


**Development phase**

Suitable functions depending on the specific project governance

| Workstreams | Description | Responsibility |
|---|---|---|
| **Commercial** | **Scope:** covers the commercial aspects of the Hydrogen Valley, including offtaker prospection, pricing, contract negotiations and revenue models<br>**Objective:** develop competitive revenue models that are financially viable and meet the needs of stakeholders<br>**Expected output:** align on commercial model to sign attractive offtake agreement | XX, XX |
| **Stakeholder management** | **Scope:** identify, manage and prioritize stak[illegible]ap requirements, interests and risks involved in the project<br>**Objective:** establish a cooperation relationship to [illegible]dvancement of each stream on time and budget<br>**Expected output:** stakeholders overview, stakeholders ma[illegible]strategy | XX, XX |
| **Advisors selection** | **Scope:** identify advisors, preparation & launch of the RFP, negotiation, contracting, work monitoring<br>**Objective:** selection of different advisors needed for each stream through competitive tender process<br>**Expected output:** legal, financial and other advisory services | XX, XX |
| **Development & project agreements** | **Scope:** preparation, negotiation, signing of all project agreements needed for the development of the project<br>**Objective:** Negotiate the contracts respecting the timeline and the different constraints from the different stakeholders<br>**Expected output:** Development & project agreements signed with good risk allocation | XX, XX |

Example - to be adapted to project context

Source: Roland Berger

# The development phase is organized into distinct workstreams with clearly defined scopes, deliverables, and assigned responsibilities for accountability

## Project breakdown & WBS (3/3)


Documentation control

A. Project outline

B. Project breakdown & WBS

C. Schedule & key milestones

D. Business plan & Budget

E. Risks & inter-dependencies

F. Project governance


**Development phase**

Suitable functions depending on the specific project governance

| Workstreams | Description | Responsibility |
|---|---|---|
| **Project studies** | **Scope:** design of the project and preparation of the technical specifications alongside the complementary studies<br>**Objective:** optimize the design with the lowest costs and risks and oversee the complementary studies while respecting the project requirements<br>**Expected output:** plant design providing necessary requested functions and quality at the lowest cost and gaining valuable insights from the complementary studies | XX, XX |
| **Permitting** | **Scope:** preparation, submission, nego[illegible]d all necessary actions in order to acquire land and different project permits<br>**Objective:** ensure the issuance of all necessary per[illegible]ting the project timeline<br>**Expected output:** all required permits for the project implem[illegible] | XX, XX |
| **EPC Selection** | **Scope:** define overall procurement strategy, management of the contractors [illegible]plier selection process until financial close<br>**Objective:** secure optimized contracting structure on cost, on quality and on time<br>**Expected output:** procurement strategy, tender process management and contacts negotiated and signed with contractors | XX, XX |
| **Financing** | **Scope:** secure financing for the project and optimize the financial modeling<br>**Objective:** achieve the financial KPIs including lowering the LCOH while maximizing revenues<br>**Expected**: competitive LCOH, IRR target achieved | XX, XX |

Example - to be adapted to project context

Source: Roland Berger

# A clearly defined schedule – from early concept to operations – is essential to track progress, manage risks and budget and ensure timely project delivery

## Schedule and key milestones (1/2)


Documentation control

A. Project outline

B. Project breakdown & WBS

**C. Schedule & key milestones**

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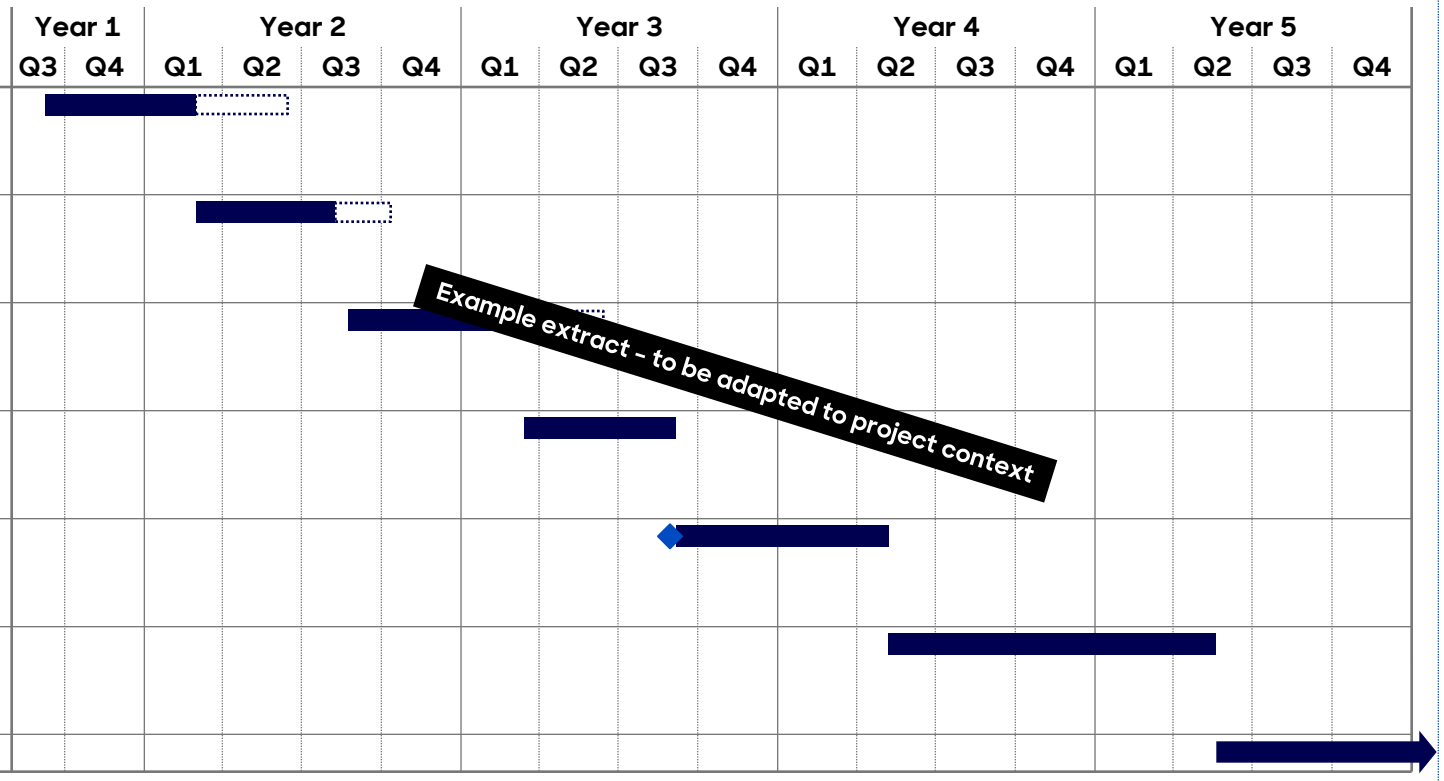
**Key milestones until Commercial Date of Operations (Latest update: DD/MM/YYYY)**




Source: Roland Berger

# Clear milestones with assigned responsibilities, deadlines, and status tracking ensure accountability, alignment, and timely delivery of the Hydrogen Valley

## Schedule and key milestones (2/2)


Documentation control

A. Project outline

B. Project breakdown & WBS

C. Schedule & key milestones

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F. Project governance


### Key milestones & responsibilities

| Workstreams | Milestones & sub-milestones | Deadline | Stakeholder | Responsibility | Status |
|---|---|---|---|---|---|
| Contractual/ commercial | **Concept commercial framework** | - | - | - | - |
| | Commercial structure outlined | - | - | - | - |
| | **Offtake negotiations** | - | - | - | - |
| | MoUs negotiated | - | - | - | - |
| | Offtake agreement signed | - | - | - | - |
| | **Land & site agreements** | - | - | - | - |
| | Site options/leases secured | - | - | - | - |
| | Land use permits | - | - | - | - |
| Engineering | **Topographical survey** | - | - | - | - |
| | Selection of contractor | - | - | - | - |
| | Start survey | - | - | - | - |
| | Preliminary survey results | - | - | - | - |
| | Survey results accepted | - | - | - | - |
| | **Basic design** | - | - | - | - |
| | Contractor selected | - | - | - | - |
| | Technical studies reviewed | - | - | - | - |
| | Conceptual/basic design developed | - | - | - | - |

Example for two workstreams

Source: Roland Berger

# For the Hydrogen Valley business model, 3 elements, i.e., the service coverage, the asset model and the execution model are specified along the value chain

## Business plan and budget (1/6)


Documentation control

A. Project outline

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C. Schedule & key milestones

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This exemplary Hydrogen Valley focuses on hydrogen production, storage, and end use within the value chain

**Business model**

| | Primary energy sourcing | $H_2$ production | $H_2$ storage | $H_2$ transport | $H_2$ distribution | $H_2$ end use |
|---|---|---|---|---|---|---|
| **Coverage** | *Description of product/services coverage and value proposition along the $H_2$ value chain* | | | | | |
| **Asset model** | *Description of asset models incl. management of physical and financial assets, revenue streams incl. pricing and lifecycle management along the $H_2$ value chain* | | | | | |
| **Execution model** | *Description of key partners, go-to-market strategy, process of value creation, enablers, key capabilities and resources as well as key offtakers* | | | | | |

Source: Roland Berger

# A financial dashboard with transparent assumptions and revenue projections enables informed decision-making and robust business planning

## Business plan and budget (2/6)


Documentation control

A. Project outline

B. Project breakdown & WBS

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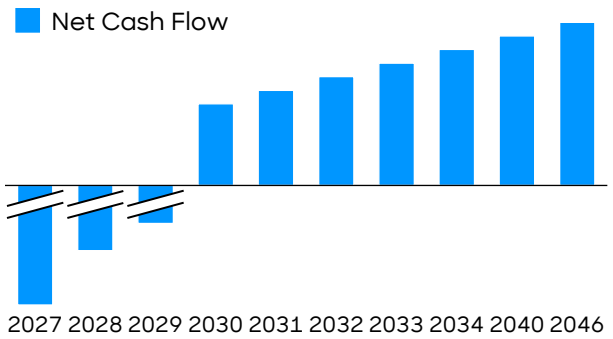
### Exemplary Hydrogen Valley - Financials

**Assumptions**

| | Yearly avg. on XX years |
|---|---|
| LCOH [EUR/kg] | XX |
| H2 sales prices [EUR/kg] | XX |
| Revenue [EUR m] | XX |
| EBITDA [EUR m] | XX |
| Net Income [EUR m] | XX |
| Free cash flow to equity [EUR m] | XX |

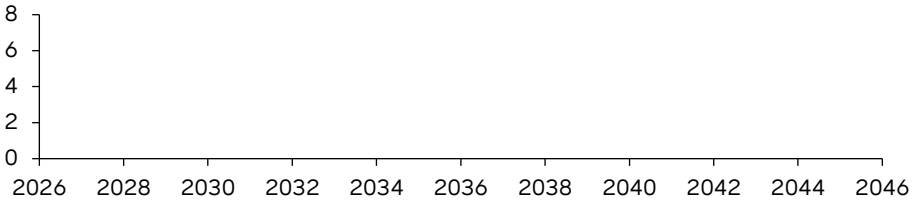
**Cash Flow**



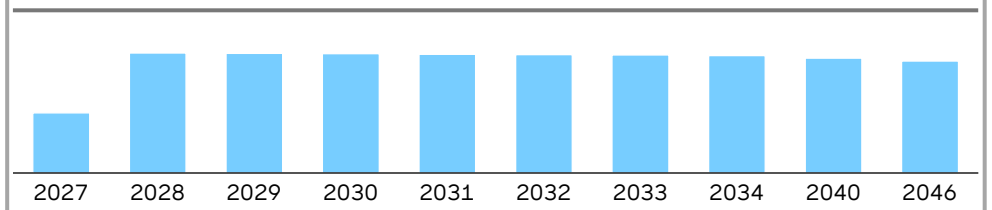

**Returns**

| | Overall project |
|---|---|
| Investment [EUR m] | XX |
| MOIC [x] | XX |
| Average ROE [%] | XX |
| IRR [%] | XX |

**$H_2$ sales price**




**Revenue development**




Source: Roland Berger

# A transparent overview of key assumptions ensures consistent, comparable, and reliable business planning and budgeting across multiple locations

## Business plan and budget (3/6)


Documentation control

**A.** Project outline

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### Key assumptions

| | | Location 1 | Location 2 |
|---|---|---|---|
| **Revenue** | Electrolyzer capacity [MW] | XX | XX |
| | Gross Capacity factor [%] | XX | XX |
| | Degradation rate [%] | XX | XX |
| | Average $H_2$ production [tons] | XX | XX |
| | $H_2$ sales price [EUR/kg] | XX | XX |
| **OPEX** | Yearly Average O&M [EUR/MW] | XX | XX |
| | Yearly Average G&A [EUR/MW] | XX | XX |
| **CAPEX** | Electrolyzer price excl. freight [EUR/kW] | XX | XX |
| | EPC Price (excl. ELY purch.) [EUR/kW] | XX | XX |
| | Contingencies [% of EPC costs] | XX | XX |
| | Development costs [EUR m] | XX | XX |
| **Financing** | Target leverage [%] | XX | XX |
| | Tenor [years] | XX | XX |
| | Financing costs [all-in] | XX | XX |
| | Target EIRR [x] | XX | XX |

Source: Roland Berger

# A consolidated budget gives hydrogen valley developers clear cost visibility and control

## Business plan and budget (4/6)


Documentation control

A. Project outline

B. Project breakdown & WBS

C. Schedule & key milestones

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### Project budget – Consolidated overview

**Overview**

| | |
|---|---|
| Technology | XX |
| Electrolyzer capacity [MW] | XX |
| Offtake agreement period [years] | XX |

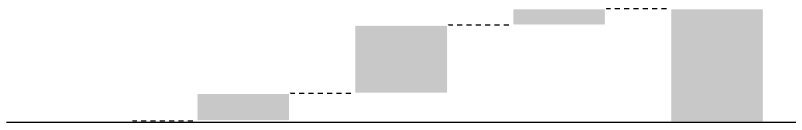
**Main milestones**

| | |
|---|---|
| Project start | XX |
| FID | XX |
| Construction period | XX months |

**CAPEX & Financing**

| | |
|---|---|
| Electrolyzer price (excl. freight) | XX EUR/kW |
| EPC price | XX EUR/kW |
| Contingencies | XX |
| Development costs (EUR m) | XX |
| Tenor (years) | XX |
| Target EIRR | XX |

**CAPEX [EUR m]**




**CAPEX breakdown [EUR m]**

| | | | | | |
|---|---|---|---|---|---|
| Electrolyzer incl. plant | - | XX | XX | XX | **XX** |
| Insurance | - | XX | XX | - | **XX** |
| Taxes | XX | XX | - | - | **XX** |
| Development costs | XX | XX | XX | XX | **XX** |
| Senior Debt - IDC | - | - | XX | XX | **XX** |
| Senior Debt - Fees | - | XX | XX | XX | **XX** |
| Initial WC Requirement | - | - | XX | XX | **XX** |
| **Total** | **XX** | **XX** | **XX** | **XX** | **XX** |

**Comments**

- *Descriptions and additional explanations on CAPEX and financing*

# An overview of funding needs and sources is key for financial feasibility, investor transparency, and internal clarity on capital requirements

## Business plan and budget (5/6)


Documentation control

A. Project outline

B. Project breakdown & WBS

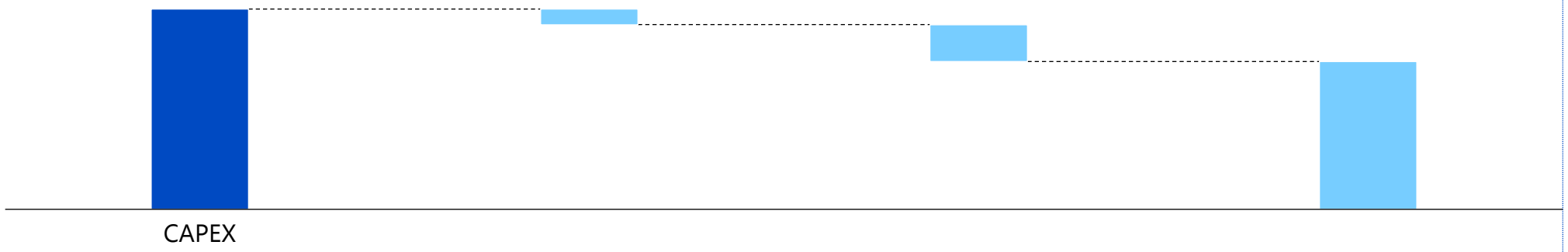
C. Schedule & key milestones

D. Business plan & Budget

E. Risks & inter-dependencies

F. Project governance


**Funding needs and sources [EUR m]**




| Financing structure | Public grants | Equity | Debt |
|---|---|---|---|
| • *Details and description on financing structure* | • *Details and description on public grants* | • *Details and description on equity financing* | • *Details and description on debt financing* |

Source: Roland Berger

# An overview of debt funding - its structure, sources, DSCR, and repayments - is essential for financial feasibility

## Business plan and budget (6/6)


Documentation control

A. Project outline

B. Project breakdown & WBS

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### Funding structure and sources of debt [EUR m]

| Year 1 - Year 4 | Year 5 - Year 8 | Year 9 - Year 12 | Year 13 - Year 16 | Year 17 - Year 20 |
|---|---|---|---|---|

**Debt service coverage ratio** [EBITDA/Total debt service]

| XX | XX | XX | XX | XX | X | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

***Description of funding structure, sources of debt, debt service coverage ration and debt reimbursement***

Source: Roland Berger

# A key element of the hydrogen valley project charter is identifying risks and interdependencies and defining a corresponding mitigation and action plan

## Risks and interdependencies


Documentation control

**A.** Project outline

**B.** Project breakdown & WBS

**C.** Schedule & key milestones

**D.** Business plan & Budget

**E. Risks & inter-dependencies**

**F.** Project governance


### Key risks

| Risks | Impact | Likelihood | Controls / Mitigation plan | Action plan |
|---|---|---|---|---|
| **Risk 1: Design Risk**<br>Design of Hydrogen Valley is inadequate, doesn't meet technical standards, or requires changes, leading to delays or increased costs | Low<br>-<br>Poor design could result in rework, cost overruns, or reduced plant efficiency | Medium<br>-<br>Depends on contractor and engineering expertise | • Engage experienced EPC and conduct detailed feasibility studies<br>• Review designs with third-party advisors and stakeholders to ensure suitability | • Request a performance guarantee from EPC/MC/O&M contractor<br>• Implement a strict design approval process<br>• Schedule regular design assessments |
| **Risk 2 : Construction Risk**<br>Cost overruns, delays, compliance with health and safety standards, and quality control issues during construction | Low<br>-<br>Directly impacts project budget and delivery schedule | Medium<br>-<br>Common in large-scale infrastructure projects | • Engage an experienced EPC contractor with proven track record in similar projects<br>• Implement strict construction oversight and risk sharing clauses in contracts | • Develop a robust project management and quality control plan<br>• Regularly monitor construction progress<br>• Ensure compliance with health and safety standards |
| **Risk 3 : Operational Risk**<br>Risks associated with performance, increasing operational costs, compliance with maintenance standards, resource availability, or external disruptions | Low<br>-<br>Could lead to lower performance, increased maintenance costs, or operational delays | Low<br>-<br>Assuming proper construction, operational risks should be manageable | • Ensure clear operational guidelines, maintenance contracts, and service availability agreements<br>• Develop contingency plans for unexpected operational disruptions | • Set up a maintenance schedule and operational performance monitoring system<br>• Implement a long-term O&M contract to minimize disruptions |

**Example risks - to be adapted to project context**

Source: Roland Berger

# Within the project governance chapter, the organizational structure of the project organization and roles and responsibilities are established

## Project governance (1/2)


Documentation control

A. Project outline

B. Project breakdown & WBS

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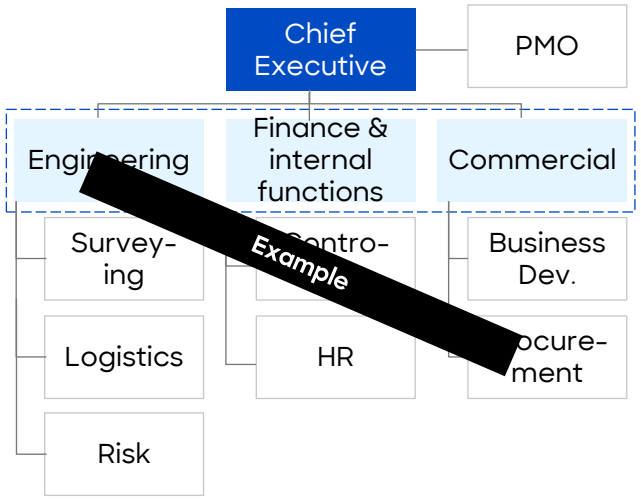
### Project organization

#### Organizational structure of a project organization




#### Roles and responsibilities

| Role | Responsibility |
|---|---|
| **CEO** | Responsible for strategic leadership and oversight and key decision-making |
| **Head of Engineering** | Responsible for design and construction methodologies to enhance efficiency and cost-effectiveness while preserving performance |
| **Head of Financing** | Responsible for securing financing (debt and equity) to fund the project development and construction |
| **Head of Commercial** | Responsible for market a[redacted]ffake contract negotiation, stakeholder engagement and pricing strategy |
| **Business Development** | Responsible for the identification of strat[redacted]rtunities and partnerships to secure project delivery and value creation |
| **Procurement** | Responsible for the identification, evaluation and selec[redacted]uppliers, cost management and quality assurance |
| **PMO** | Responsible for project governance, sub-project management, resource allocation, support of other functions (e.g., Engineering, Commercial etc.) |
| **Human Resources** | Manages overall recruitment necessary to strengthen teams along projects development lifetime |
| **Risk** | Produces initial risk assessment of the stream and associated projects |

Example

Source: Roland Berger, Project Management Institute

# For effective project governance in a Hydrogen Valley, it is important to have clarity on key contacts and maintain all contacts in a single, accessible location

## Project governance (2/2)


Documentation control

A. Project outline

B. Project breakdown & WBS

C. Schedule & key milestones

D. Business plan & Budget

E. Risks & inter-dependencies

F. Project governance


### Key contact persons

| Name | Role | E-Mail | Phone number |
|---|---|---|---|
| **Hydrogen Valley lead developer** | | | |
| Name, Surname | Business Development | name.surname@hydrogenvalley1.com | +32XXXXXX |
| Name, Surname | Technical Office | name.surname@hydrogenvalley1.com | +32XXXXXX |
| Name, Surname | Value Engineering | name.surname@hydrogenvalley1.com | +32XXXXXX |
| Name, Surname | Project Financing | name.surname@hydrogenvalley1.com | +32XXXXXX |
| Name, Surname | PMO | name.surname@hydrogenvalley1.com | +32XXXXXX |
| **Partner 1** | | | |
| *TBD* | *TBD* | *TBD* | *TBD* |
| *TBD* | *TBD* | *TBD* | *TBD* |
| **Partner 2** | | | |
| *TBD* | *TBD* | *TBD* | *TBD* |
| *TBD* | *TBD* | *TBD* | *TBD* |
| **Public/local authority** | | | |
| *TBD* | *TBD* | *TBD* | *TBD* |
| *TBD* | *TBD* | *TBD* | *TBD* |

Source: Roland Berger

Roland Berger