

An isometric illustration of a hydrogen valley facility. The scene includes wind turbines, solar panels, a large ship, a train, a bus, and various industrial buildings. A network of pipes and roads connects these elements. A large white cloud is in the top left. A colorful dotted line forms a circular path around the 'Clean Hydrogen Partnership' text. A sign with 'www.h2v.eu' is visible near a residential area. The overall color palette is dominated by blues and purples.

Clean Hydrogen
Partnership

Technology evaluation framework – Partner categorization and scouting

Hydrogen Valley Facility

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



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



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

Commercial



Technical



Regulatory



Valley governance



- Knowledge material specifically developed as part of the H2V Facility project
- Links and information to other third-party resources and material

Interactive Formats

- Webinars with content experts (Roland Berger, Worley and external speakers)
- Project Development Assistance experience sessions with Hydrogen Valley practitioners

Target audience



Hydrogen Valleys



Project developers



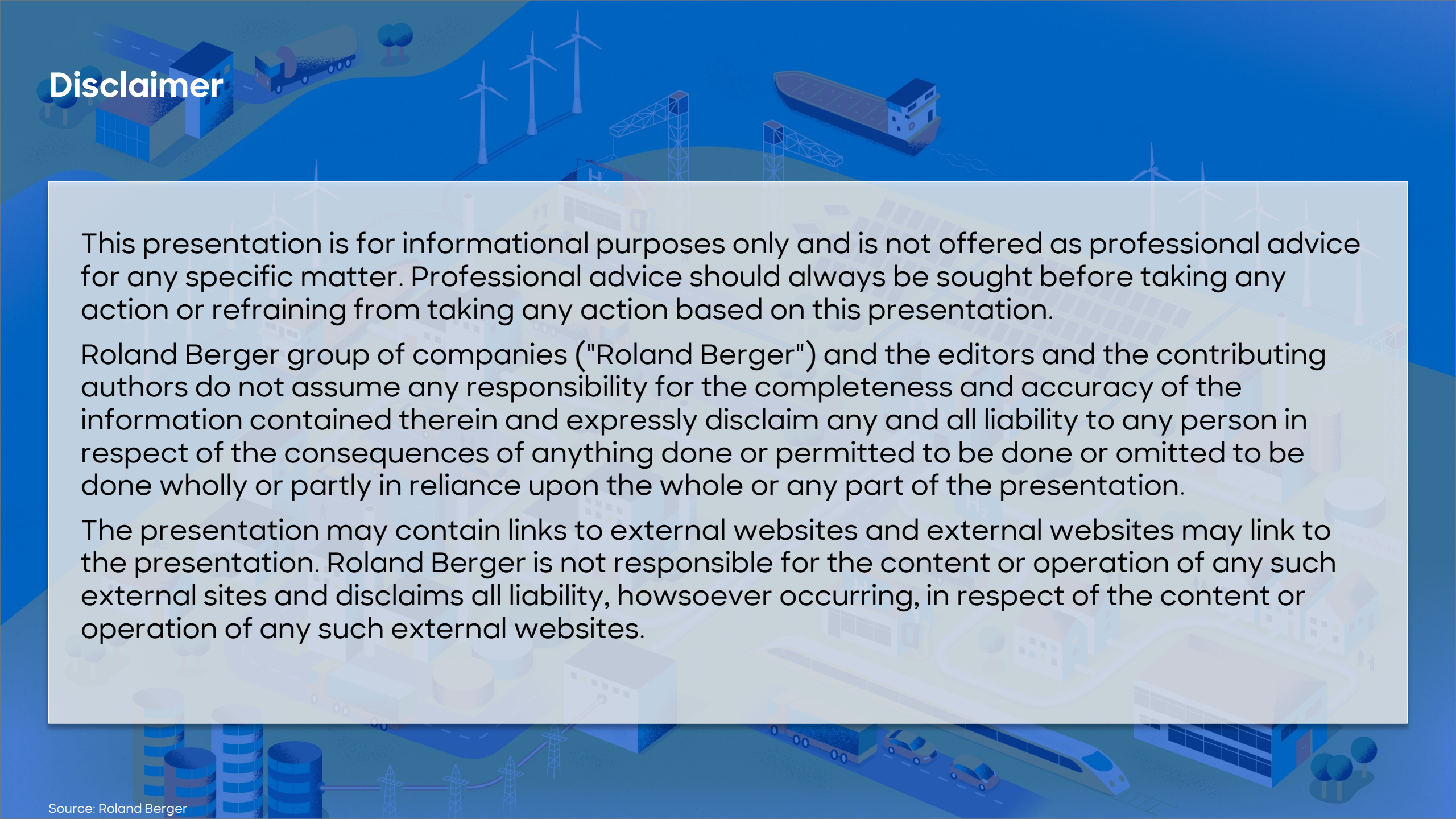
National, regional and local authorities



Investors



Other hydrogen practitioners



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Key objective of this document is to support Hydrogen Valleys in their technology assessment with a focus on partner categorization and scouting

Key objectives and content of this document

Key objectives



Conduct a **technology assessment of relevant technologies** for all major components of the Hydrogen Valley project

Key content

1

H₂ value chain assessment

Structured approach to evaluate and prioritize all relevant value chain steps based on their strategic relevance for the Hydrogen Valley and other potentials

2

Technology scouting

Comprehensive approach to prioritize focus technologies based on a detailed technology analysis considering aspects such as cost reduction and innovation potentials

3

Partner categorization and partner scouting

Guidance on the identification of potential partner types for focus technologies and on the scouting of potential partners

To select suitable technologies for key components along the Hydrogen Valley value chain, a thorough 4-step technology assessment is recommended

Technology assessment – overview

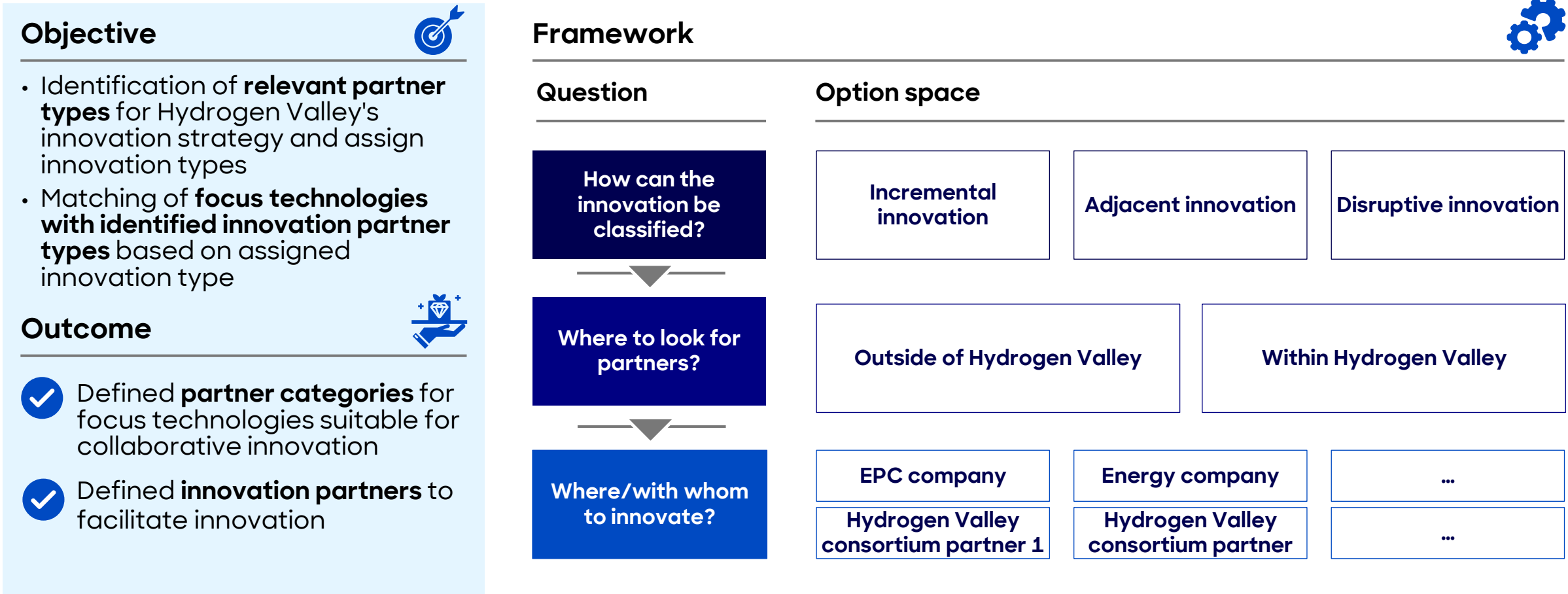
Focus level	H ₂ value chain		Technology		Focus of this document	
					Company types	Specific companies
						
Process step	1 H₂ value chain assessment		2 Technology scouting		3 Partner categorization	4 Partner scouting
Description	Identification of relevant value chain steps		Prioritization of focus technologies based on concrete project setup		Identification of potential partner types for focus technologies	Scouting of potential partners
Deliverables	High-level analysis with key value chain steps		Detailed analysis with key technologies		List of potential partner categories	Short-list of potential partners



It is recommended to repeat the technology assessment in regular intervals

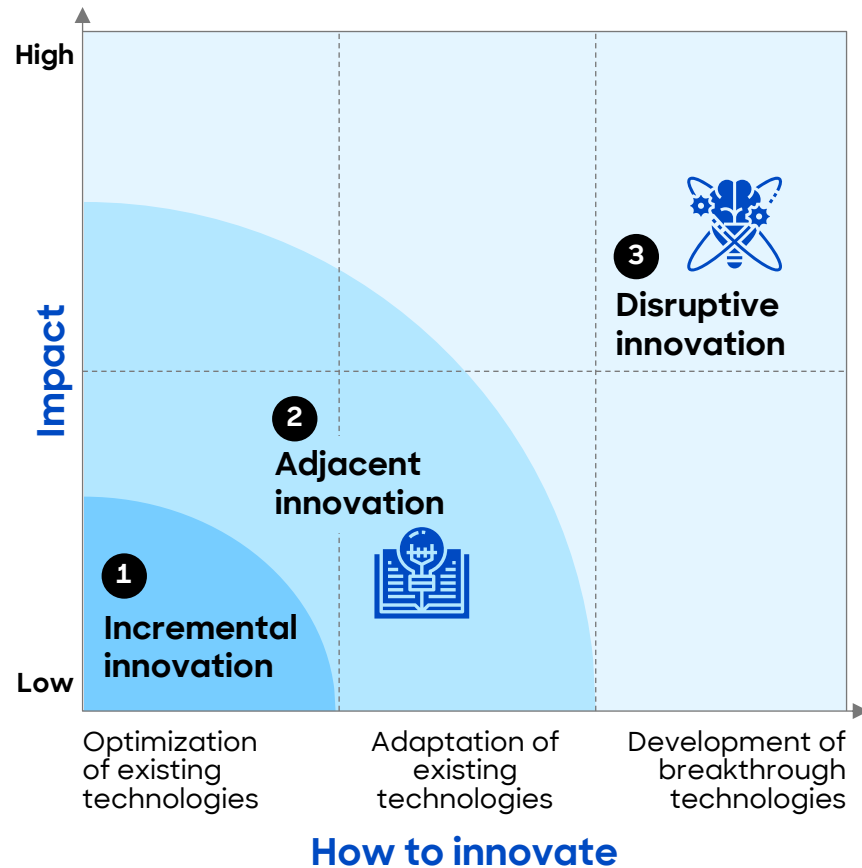
With the partner categorization, appropriate innovative partner types can be assigned to each prioritized technology as per technology scouting

Partner categorization framework



There are three types of innovation depending on the impact on the market and technology readiness level (TRL) – Incremental, adjacent and disruptive

Types of innovation



Description

1 Improvements to existing technologies but still require innovation to reduce costs, improve efficiencies and optimize operations

2 Innovation to technologies underway aimed to have a considerable impact on the performance of the technology

3 Developing new technologies by introducing disruptive innovations aimed at changing the way a technology works or acts in order to set new standards and to outperform existing technologies

Example

Optimization of operations

Scarce material replacement

AEM electrolyzer technology

Depending on the type of innovation, different types of partners are suitable – Start-ups for more disruptive, established players for incremental innovation

Categorization of partners and types of innovation

Type of partner	H ₂ technology providers	H ₂ -related component providers	Industrial gases companies	EPC companies	End-application OEMs	Industry players
Type of innovation	Incremental innovation	Incremental innovation	Incremental innovation	Incremental innovation	Incremental innovation	Incremental innovation
	Adjacent innovation	Adjacent innovation	Adjacent innovation	Adjacent innovation	Adjacent innovation	Adjacent innovation
	Disruptive innovation	Disruptive innovation	Disruptive innovation	Disruptive innovation	Disruptive innovation	Disruptive innovation
Description	Established H ₂ technology providers with mature technology	Component providers with mature technology and willingness to release new technologies	Gas companies seeking competitive advantage by deploying innovative technologies	EPC companies with experience in assembly of H ₂ focusing on technical feasibility of innovations	OEMs for H ₂ end use applications (e.g., trucks, tugboats) with focus on innovations driving down costs	Players along H ₂ value chain seeking to deploy cheaper/more efficient H ₂ technologies

Type of partner	Energy companies	Scale-ups	Start-ups	International research institutes	International universities
Type of innovation	Incremental innovation	Incremental innovation	Incremental innovation	Incremental innovation	Incremental innovation
	Adjacent innovation	Adjacent innovation	Adjacent innovation	Adjacent innovation	Adjacent innovation
	Disruptive innovation	Disruptive innovation	Disruptive innovation	Disruptive innovation	Disruptive innovation
Description	Mature companies focusing on innovations for various downstream applications of H ₂ production	Emerging companies striving to bring innovative H ₂ -based innovation to the market	Nascent companies building upon disruptive innovation and/or exclusive IP rights in H ₂ sector	Research institutes and innovation clusters focusing on fundamental and applied research in the H ₂ space	International universities and academia with broad expert network focusing on fundamental H ₂ research

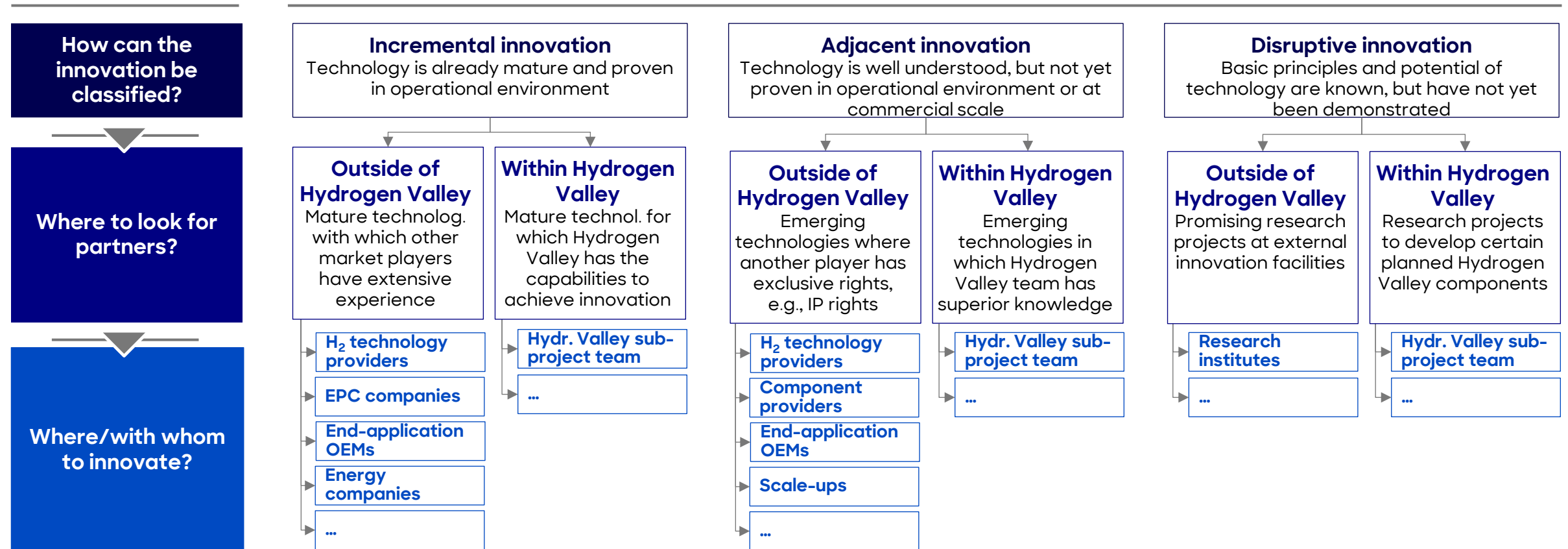
■ Established players with primary H₂ focus
■ Established players with secondary H₂ focus
■ Other (emerging companies and research facilities)

For each focus technology and depending on its innovation potential, a suitable long-list of partners can be created

Process of partner categorization per focus technology

Question

Option space



Based on the long-list of partners, a short-list of potential partners can be created for all focus technologies

Partner scouting framework



Objective

Identification of potential partners for each partner category as defined per partner categorization



For selected focus technologies, partners should be scouted at the component level if this has been identified as a key innovation area



Outcome

Shortlist of potential partners assigned to the specific innovation areas

