



Mission Innovation Hydrogen Valley Platform 2.0

Briefing and Project Update

Markus Kaufmann, Roland Berger
hydrogenvalleys@rolandberger.com

February 8th, 2023

The Hydrogen Valley Platform is a joint initiative of the Clean Hydrogen Joint Undertaking and Mission Innovation, supported by Roland Berger and Inycom

Who we are: The project team



The **Clean Hydrogen Joint Undertaking** (formerly Fuel Cells and Hydrogen Joint Undertaking) is an EU body in form of a **public private partnership** supporting research, technological development and demonstration (RTD) activities in fuel cell and hydrogen energy technologies



Mission Innovation is a **global initiative** of 24 countries & the EU working to **accelerate global clean energy innovation** with the objective to make clean energy widely affordable. The Platform has been developed under the **"Renewable and Clean Hydrogen" Innovation Challenge**



Roland Berger is a leading global **management consultancy**. With a growing cross-functional expert group, **Roland Berger serves clients along the entire hydrogen value chain** with a variety of management consulting services – from corporate strategies to project development and investor support



Inycom is a Spanish **technology company** with long recognized experience thanks to its success based on business excellence guiding principles. Inycom's core business consists of providing **high quality technology solutions and service**

Platform sponsor

Framework initiative

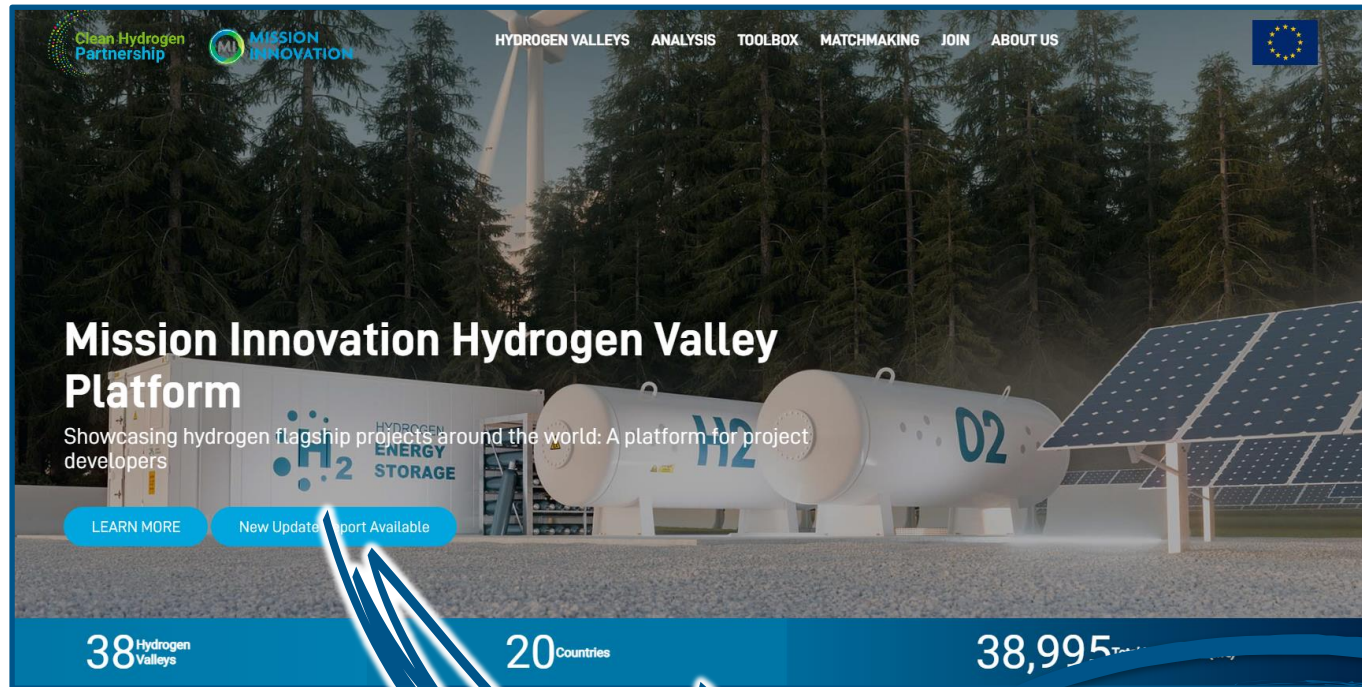
Platform development

Platform development

www.H2V.eu

The Hydrogen Valley Platform is a global site for collaboration, best practice sharing and visibility to promote the clean energy transition through H2 projects

What we do: The Mission Innovation Hydrogen Valley Platform

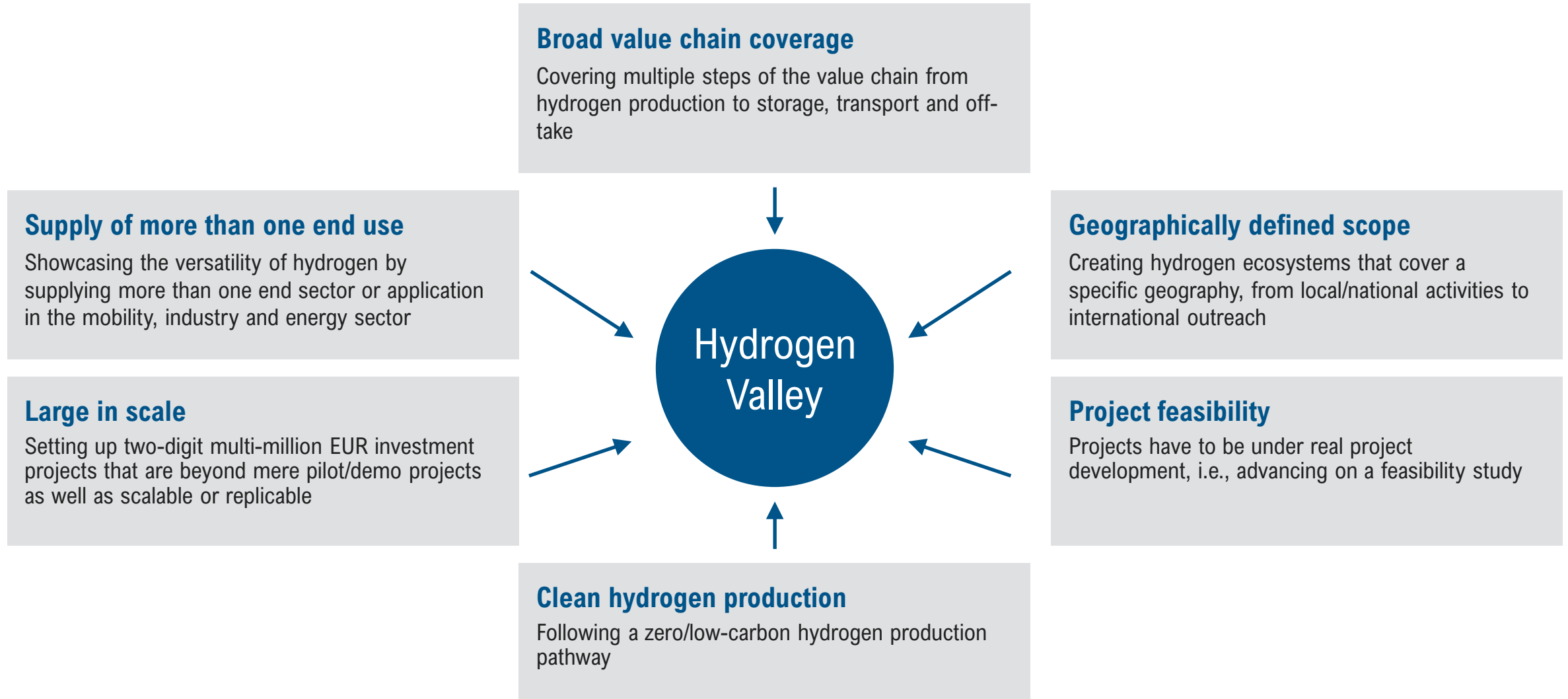


Key elements of the platform

- World map of Hydrogen Valleys
- Individual Hydrogen Valley profiles
- Data, analysis, visualization
 - Insights: value chain, technologies, stakeholders, capacities, cost, funding & financing, challenges & success factors, etc.
 - Best practices for project development
- Toolbox for project development
 - Other global hydrogen platforms and databases
 - Reference studies and reports
- Hydrogen Valley members area

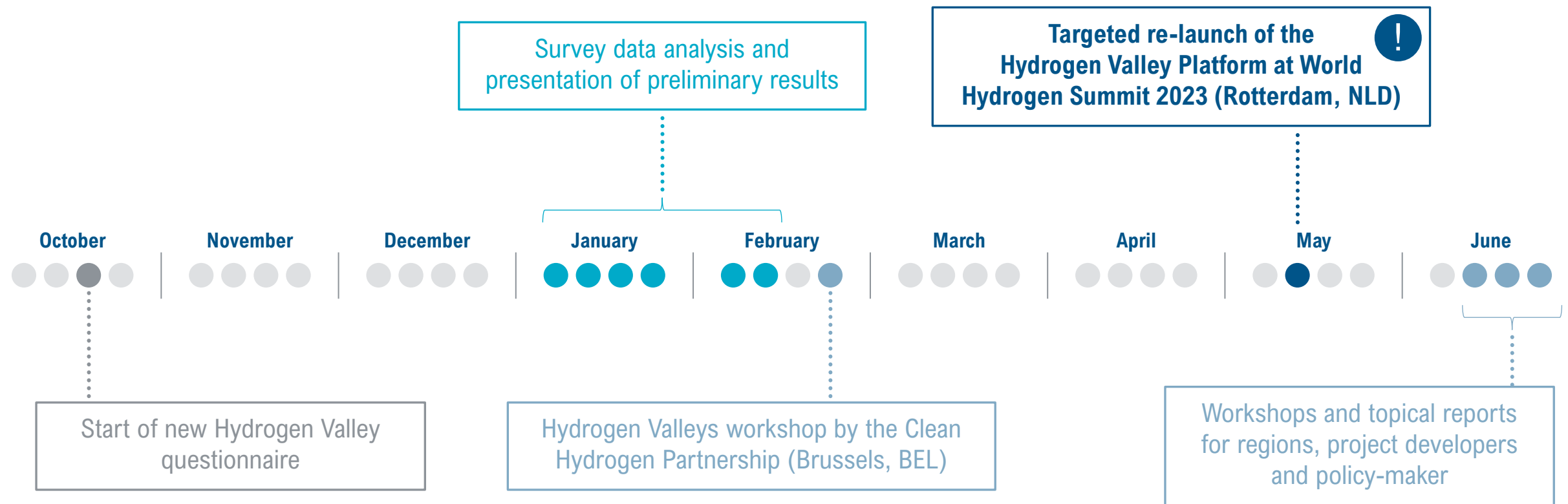
www.H2V.eu

We have defined six criteria to what defines a Hydrogen Valley – Different terms for the same concept have developed globally (hubs, clusters, ecosystems, ...)



The relaunch of the Hydrogen Valley platform is targeted for May '23 at the World Hydrogen Summit

Timeline and key milestones of the MI Hydrogen Valley Platform development



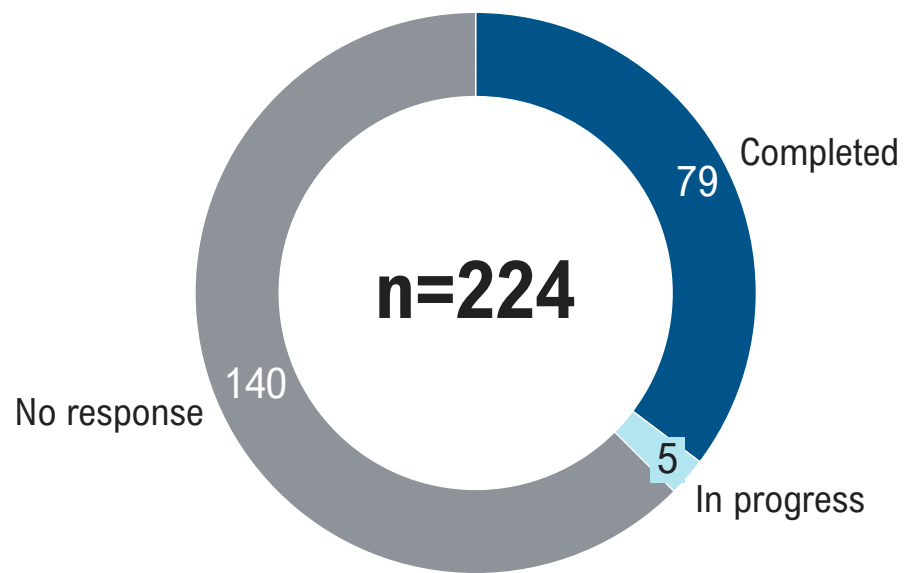
■ Important project milestones & events ■ Technical process ■ Planned activities

Confidential

Based on the already obtained survey responses, the number of Hydrogen Valleys on the platform will more than double

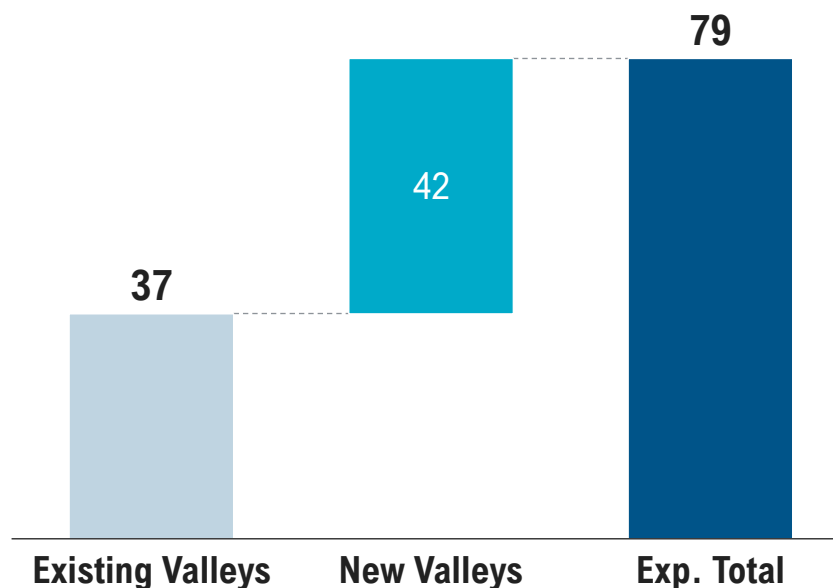
New Hydrogen Valley survey – current responses to our survey

Preliminary results of new questionnaire



Overall survey response rate: c. 40%

Number of Hydrogen Valleys on the platform¹⁾



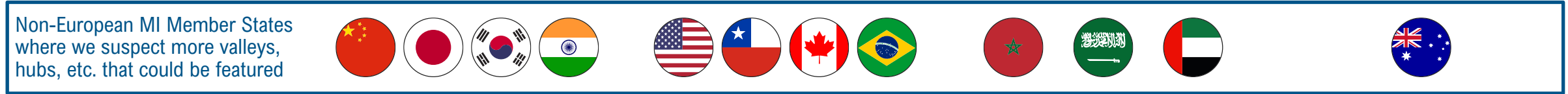
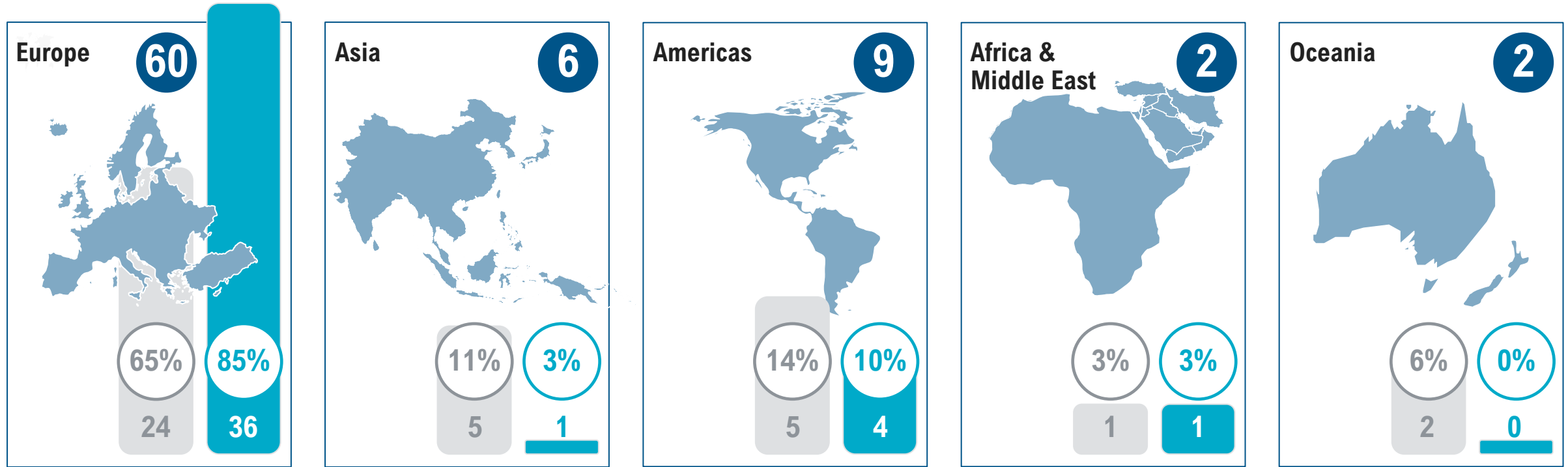
... doubling the # of valleys

- The ambitious target of **100 Hydrogen Valleys** on the platform is **within reach** – but an **additional push to project developers** is required
- **Supporting efforts from Mission Innovation member state representatives** could help in obtaining additional questionnaire completions

1) Anticipated number of new Hydrogen Valleys as of December 06

However, the Hydrogen Valleys currently on track to be displayed on the platform are primarily located in Europe – We would like to show a more global picture

New Hydrogen Valley survey by geography – current responses to our survey



Existing Hydrogen Valleys New Hydrogen Valleys Total number of Hydrogen Valleys as of 02/2023

Confidential

We have developed a data request around five key topics of typical hydrogen valley development – The survey is online-based with confidentiality options

Hydrogen Valley questionnaire

1. Project fundamentals

Key project facts (contact, website, short description)

Location (country, city, geo-coordinates, second location, covered area/region)

Stakeholders (lead developer, partners, sponsors, project connections, new joiners)

Production and end uses (capacity, volumes, consumption, offtakers)

Investment and team (total investment, staff members)

Motivation and timeline (main drivers, start date, exp. COD, status, planned expansions)

2. Value chain & technologies

Technologies along the value chain

Primary energy sourcing (renewables, natural gas, etc.)

H₂ production (electrolysis incl. tech, SMR+CCUS, etc.)

H₂ storage / conversion (cylinder, cavern, ammonia)

H₂ transport / distribution (pipeline, truck, ship, HRS)

End-use applications (mobility, energy, industry)

3. Preparation & execution

Timeline (planned time vs. actual, permitting)

Parties involved (stakeholders, staff members)

Preparation funding (budget, funding source for preparation)

Governance (lead entity, risk sharing mechanism, governance mechanism)

Permitting (Regulatory provisions / hurdles, clarity on procedures, status)

Best practices (activities, hurdles, barriers, key success factors)

4. Commercials & financing

CAPEX (total budget, spent budget, overhead share)

Funding (main funding sources, instruments, duration)

LCOH (sales prices of H₂)

Anticipated average input costs (electricity, natural gas)

Green H₂ (costs, share (%))

Blue H₂ (costs, share (%), CCUS, capture rate)

Other zero/low-carbon sources of H₂

Best practices (competitiveness, activities, resources, hurdles, barriers, key success factors)

5. Impact & analysis

CO₂ abatement

Project benefits (economic value added, jobs created, industrial policy elements)

The survey

- Different levels of confidentiality ("opt-out")
- Online survey, easy to complete
- Validated with selected project developers

Please reach out to us to discuss how we can mobilize even more (non-European) hydrogen valleys for the platform

Your contacts

Markus Kaufmann

Principal
Hamburg, Germany

markus.kaufmann@rolandberger.com
hydrogenvalleys@rolandberger.com

+49 (0) 160 7442144

Martin Hölscher

Senior Consultant
Hamburg, Germany

martin.hoelscher@rolandberger.com
hydrogenvalleys@rolandberger.com

+49 (0) 160 7444355



Roland
Berger

