

Development of Business Cases for Fuel Cells and Hydrogen Applications for Regions and Cities

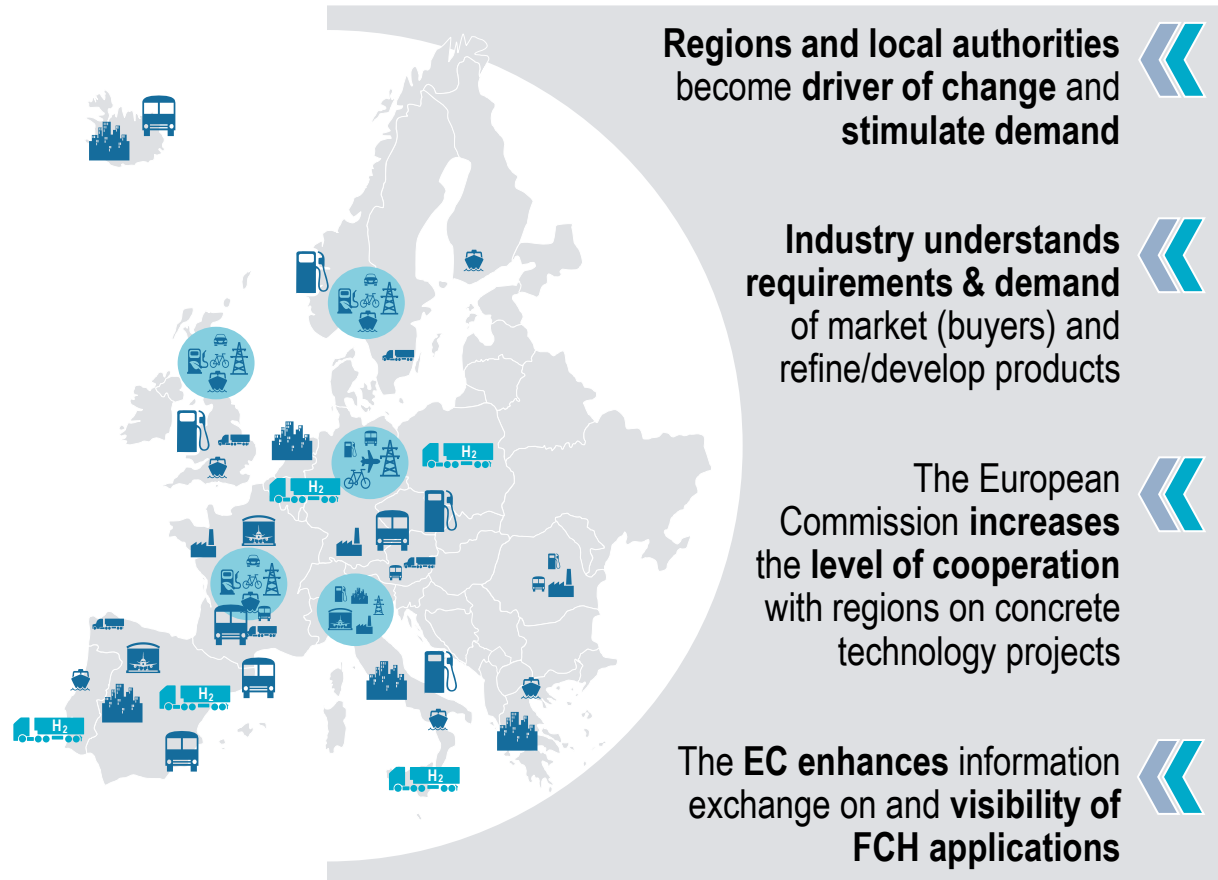
Project and initiative overview




The FCH JU's Regions & Cities initiative supports regions & cities to implement projects and become key drivers of techn. development

Objectives of the initiative


- 
Support regions in assessing FCH applications in business cases and evaluating their potential
- 
Identify & maximize the use of different financing options
- 
Support the regions/cities in the promotion of the technology – e.g. in context of their "Smart Specialization Strategies" (S3)
- 
Develop roadmaps & concepts to prepare and implement deployment projects from 2018 onwards



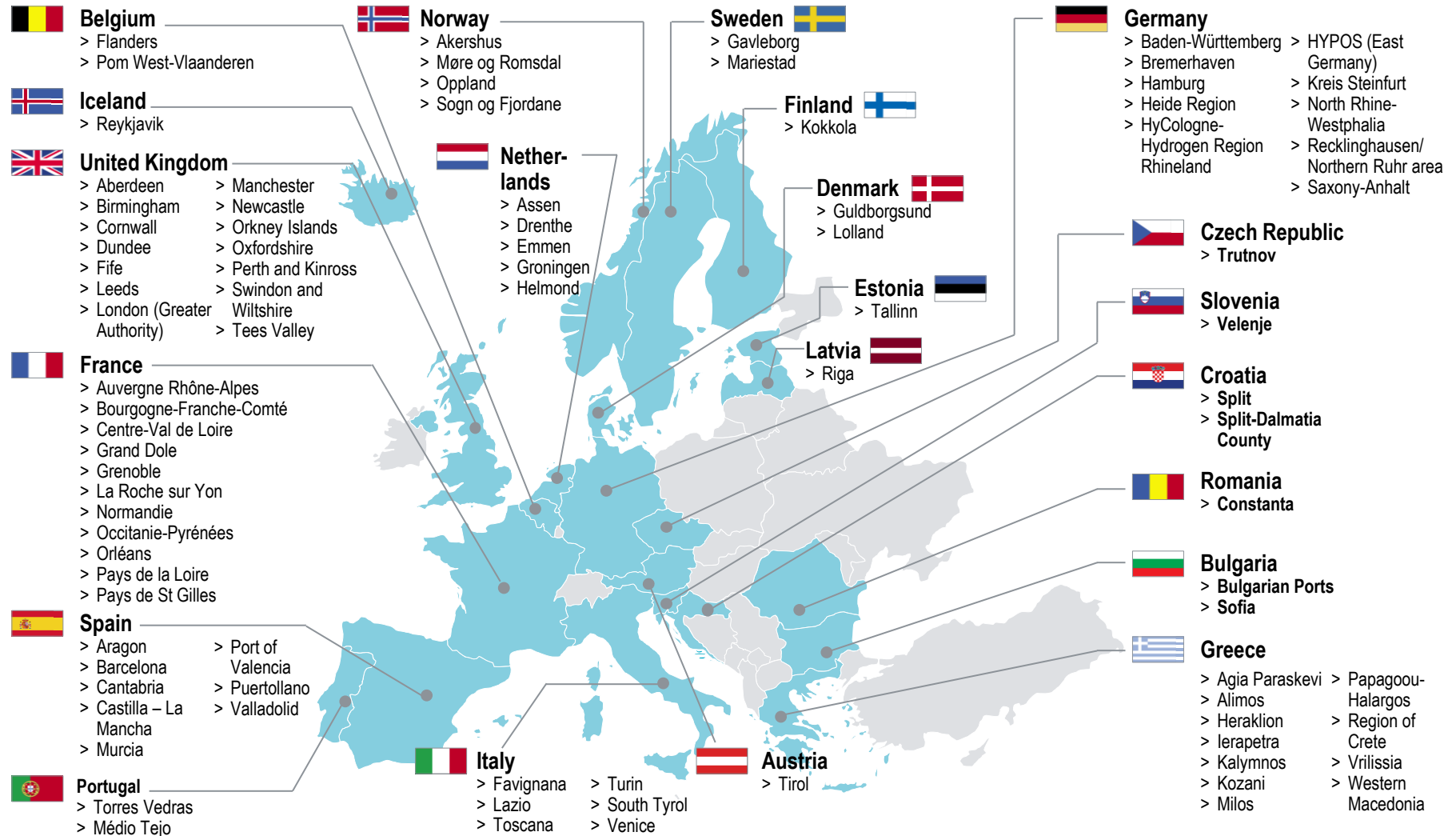
Regions and local authorities become **driver of change** and **stimulate demand** 

Industry understands **requirements & demand** of market (buyers) and refine/develop products 

The European Commission **increases the level of cooperation** with regions on concrete technology projects 

The **EC enhances** information exchange on and **visibility of FCH applications** 

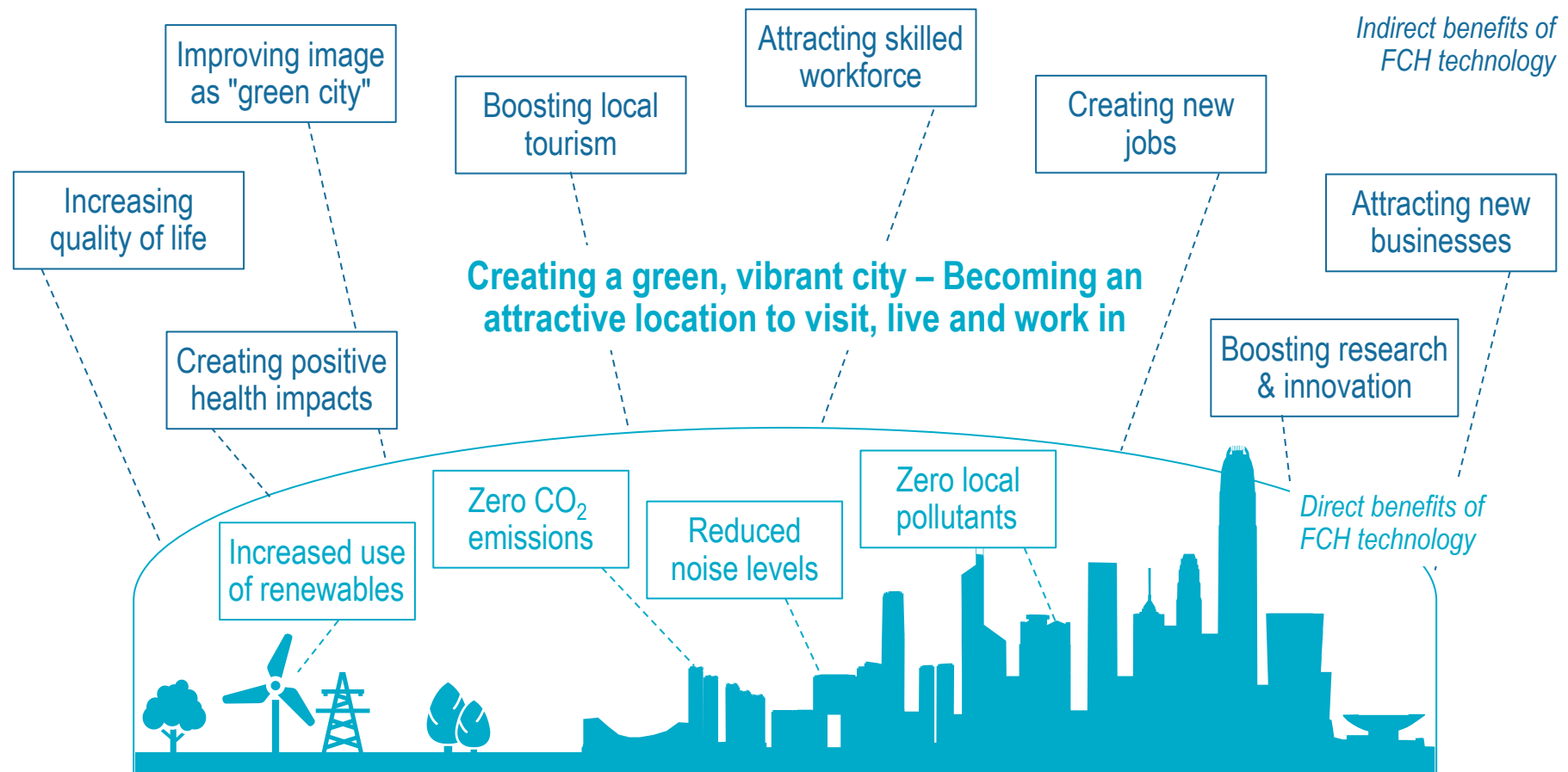
89 Regions and Cities from 22 countries are part of the initiative – even more have expressed interest in hydrogen technologies



Legend: Map shows all Regions and Cities which have signed the MoU

By investing in fuel cells and hydrogen, Regions and Cities can increase quality of living and attract people and businesses

Attractive local benefits of hydrogen technology



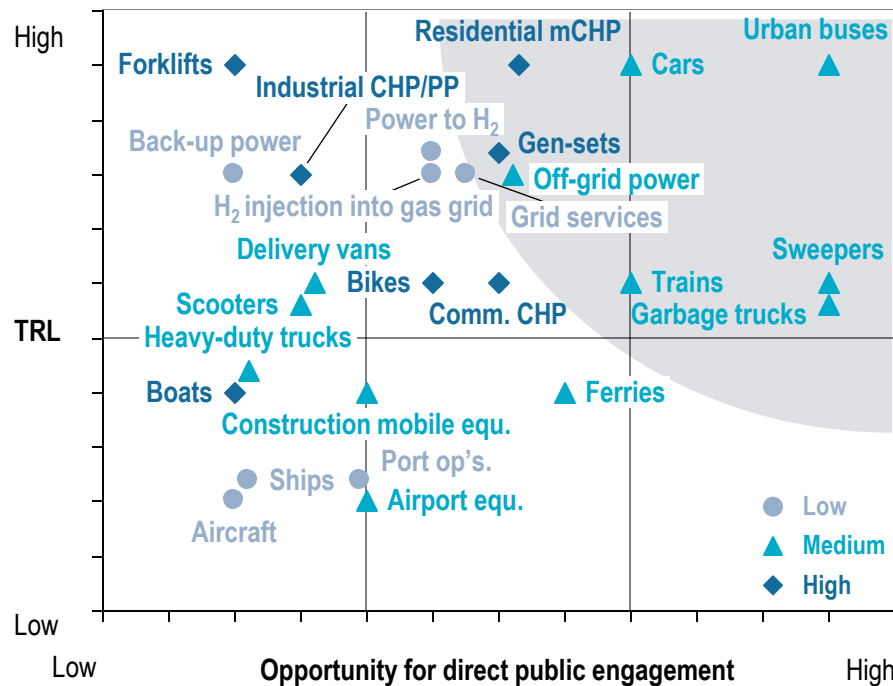
Some applications can be deployed in the short term, as they are comm. available and implementation lies within in the public domain

Short-term deployment opportunities for Regions and Cities

INDICATIVE

What applications can I deploy tomorrow?

Key considerations



- > In the short term, Cities and Regions can look for **high TRL applications** for actual deployment projects
- > **Public infrastructure sectors** are well suited for deployment of applications because of direct control of public authorities (e.g. publically-owned local/regional transport operators or utilities)
- > Cities and Regions can reduce complexity in multi-stakeholder settings by acting as **direct customers** of industry

Implementation-rel. ease of deployment:

1) Results differ depending on location, time horizon, benchmark technology as well as specific use case under consideration

2) Applications in parentheses are still to be discussed within Working Group Calls

Source: FCH2 JU, Roland Berger

In South-Eastern Europe, local project plans for first FCH projects are defined, but lack of funding is a challenge for implementation

Cluster South-Eastern Europe

1st workshop: 01/03, Athens

2nd workshop: 12/04, Sofia

PARTICIPANTS

Regions & Cities: Agia Paraskevi, Alimos, Kozani, Milos, Velenje, Vrillissia

Industry members, associations, research institutions, local decision makers



FOCUS APPLICATIONS

- > Mini-buses, sweepers, garbage trucks, cars, scooters, bikes
- > CHP for public buildings
- > Back-up power supply
- > Build-up of local HRS



Status and results

- > Greece:
 - Early stage market with concrete concepts for FCH deployments across a number of locations and applications/ use cases where implementation is yet to be started
 - Strong support by local decision makers for engaging in first FCH projects to support local sustainability plans and increase RES use
- > Slovenia:
 - Focus on local shift to clean energy by FCH use, starting with deployment of FCH mini-buses in public transport, establishment of an HRS and use of by-product H₂ from thermal power plant

Challenges and need for support

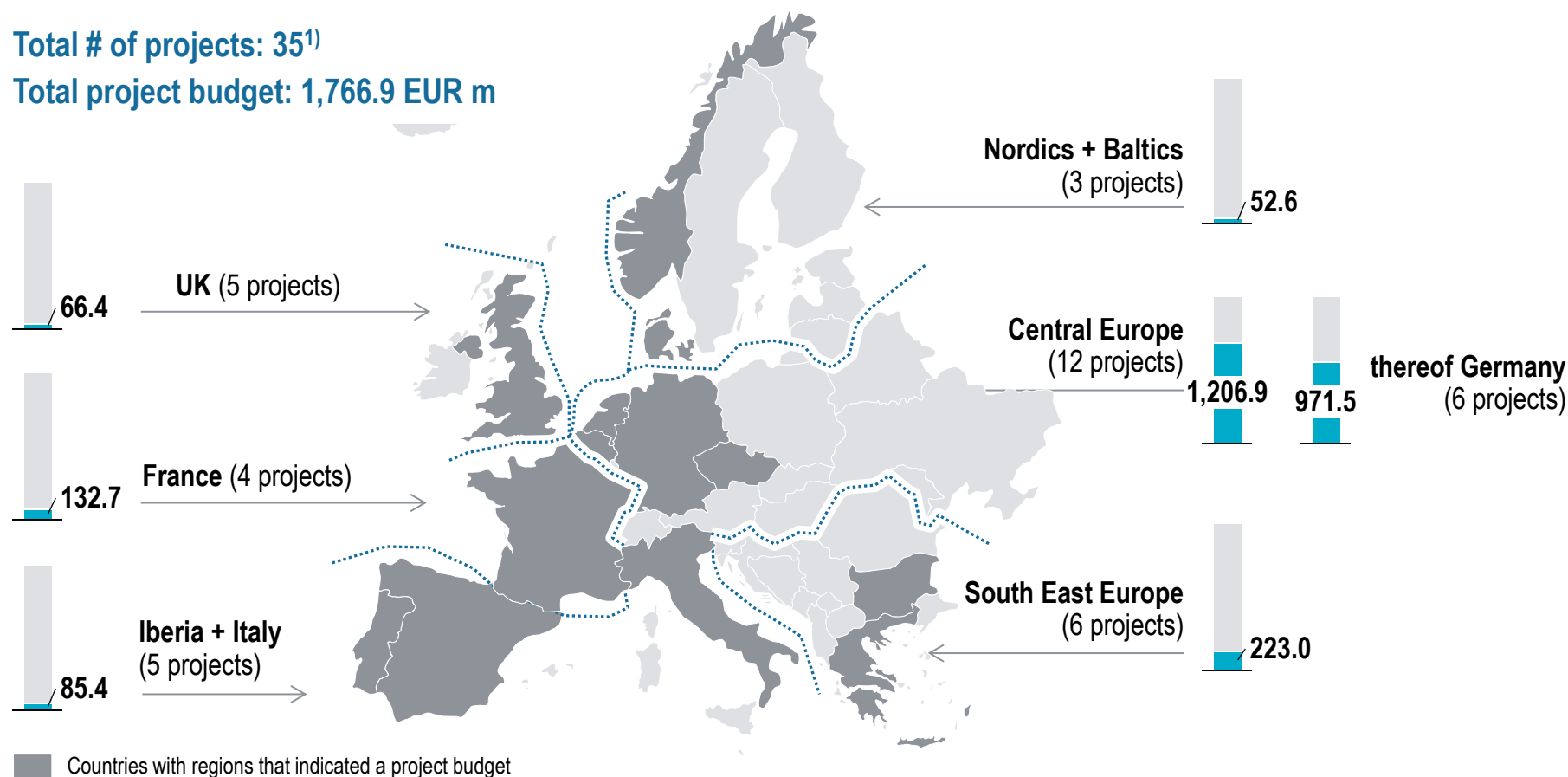
- > Lack of central government support (Greece) – Commitment for FCH by national authorities is limited, e.g. no plan for national HRS network build-up has been submitted
- > Project funding – Acquiring required funding is seen as major hurdle for project implementation
- > Lack of product availability – E.g. FCH mini buses difficult to obtain

In South-Eastern Europe, six projects with a volume of EUR 223 m are in the planning stages for implementation

Total next implementation project budget per country cluster [EUR m]

Total # of projects: 35¹⁾

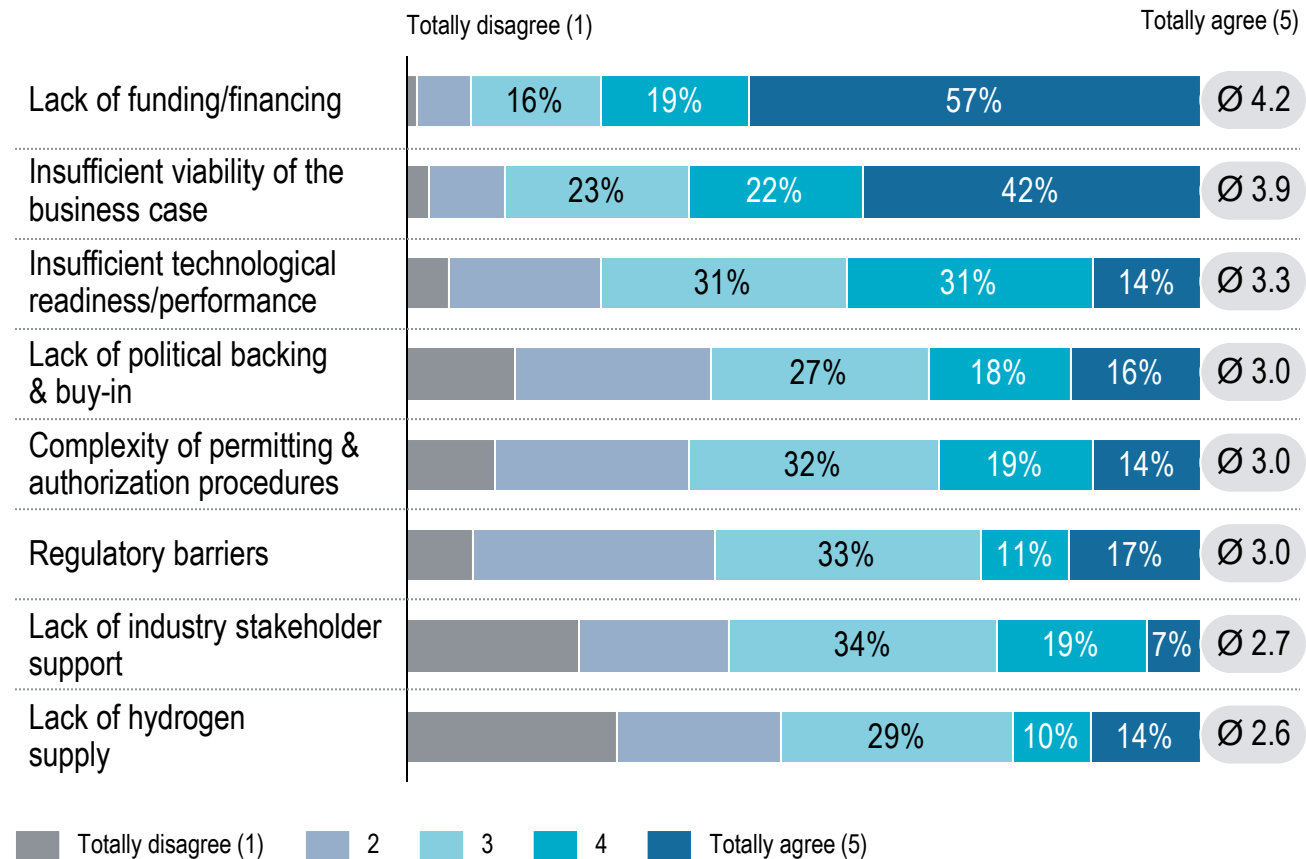
Total project budget: 1,766.9 EUR m



1) Number of projects with an indicated budget covering 41 locations in total

Funding/financing as well as business cases are the most acute hurdles to the successful deployment of FCH applications

Hurdles and challenges posing obstacles for FCH deployment¹⁾



Other reasons (selection):



"Lack of skilled local people"

"Missing public awareness"

"Lack of time"

"Insufficient coordination between different initiatives"

"Large area with small population density"

1) Question: "Within your region/city, which hurdles and challenges currently pose obstacles to the deployment of FCH applications?" (n=72-74)

Regions & Cities with existing plans need to be more concrete and newcomers have the opportunity to benefit from a large network



Concrete next steps:

Planned deployment projects

- > Scoping of concrete projects and definition of a concrete project concept
- > Definition of a realistic project financing concept
- > Engagement of relevant local stakeholders
- > Pushing the project towards implementation

Newcomers

- > Use extensive material on FCH JU Regions Initiative website to identify opportunities for hydrogen technology
- > Get in touch with the FCH JU to join the initiative
- > Create a network with experienced Regions and Cities that can share their experience
- > Start working on your local project concept

For further information or joining the initiative, please do not hesitate to get in touch with us

Relevant contact information

Your contacts at the **FCH JU**

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THINK:ACT

