



# **Finnish strategy for hydrogen economy and how it is boosting wind power**

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An aerial photograph of a wind farm in a vast, forested landscape. Two large white wind turbines are visible in the foreground, with many more extending into the distance. The sky is a mix of blue and light clouds, suggesting a clear day.

# Hydrogen Cluster Finland

**Established in 2021  
by companies with support  
of industry associations**

**Today over 85 member  
companies  
across hydrogen value chain  
and 6 industry associations**

**Our 2035 target:**

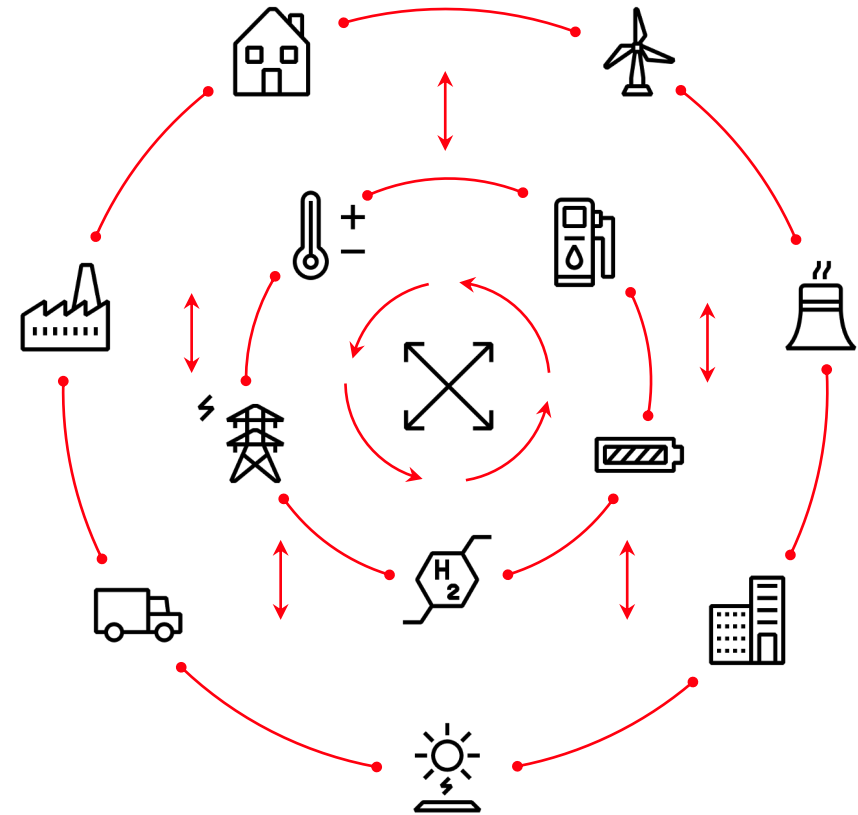
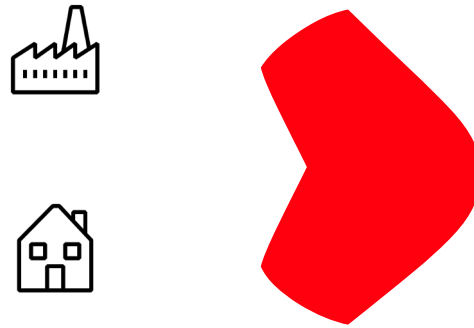
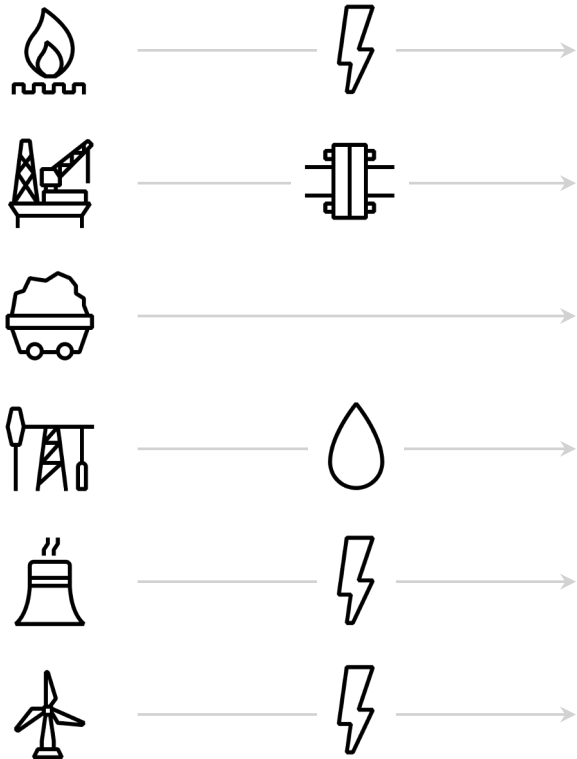
**Finland: the leading high-value  
hydrogen economy in Europe**



# Why renewables & hydrogen?

# Energy landscape will change with the need of decarbonization

Transforming from linear, wasteful to integrated and circular

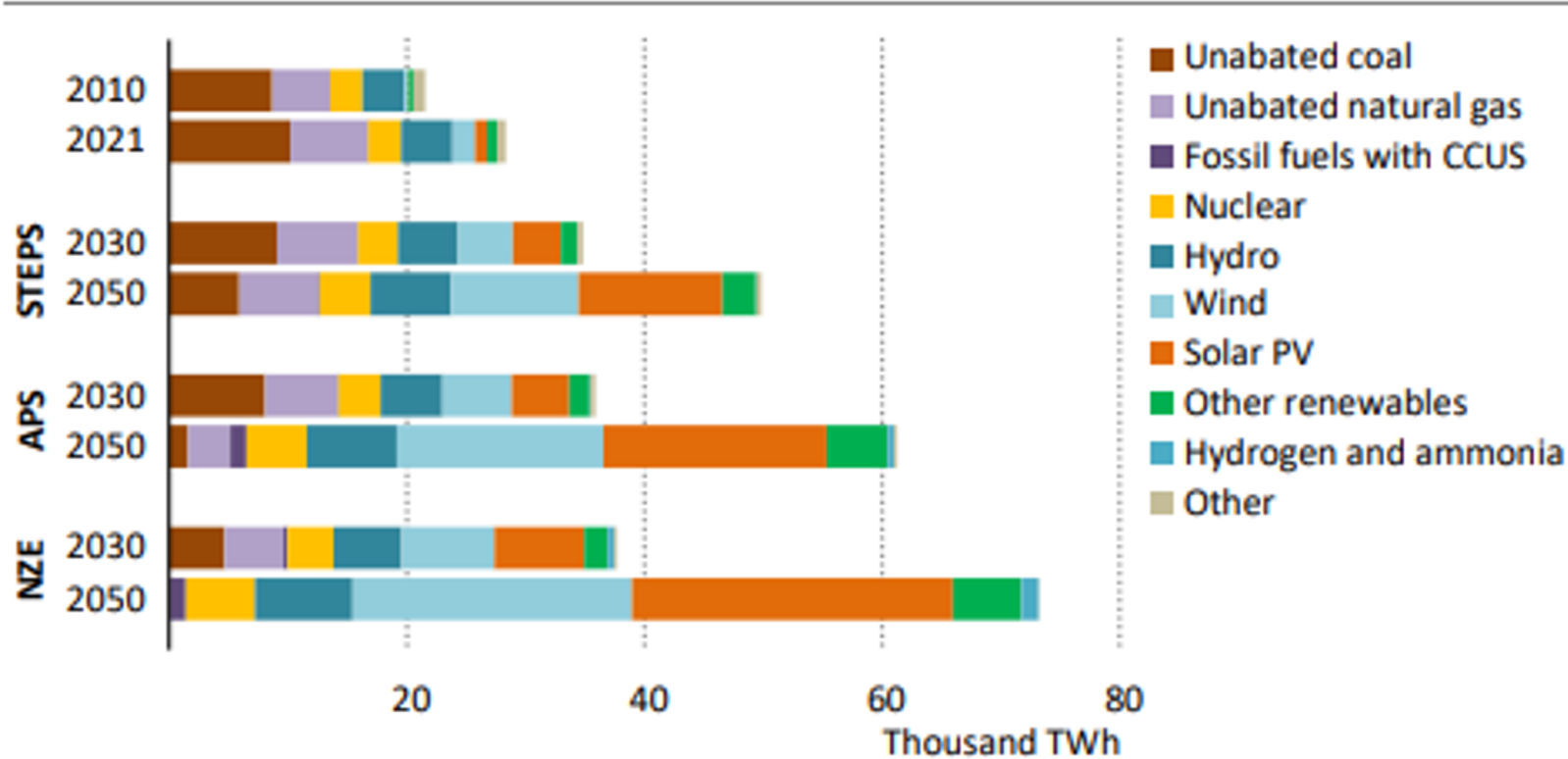


Maximize the value of used energy through high efficiency and synergies



# Electricity generation grows > 2.1x by 2050

**Figure 6.7** ▶ Global electricity generation by source and scenario, 2010-2050

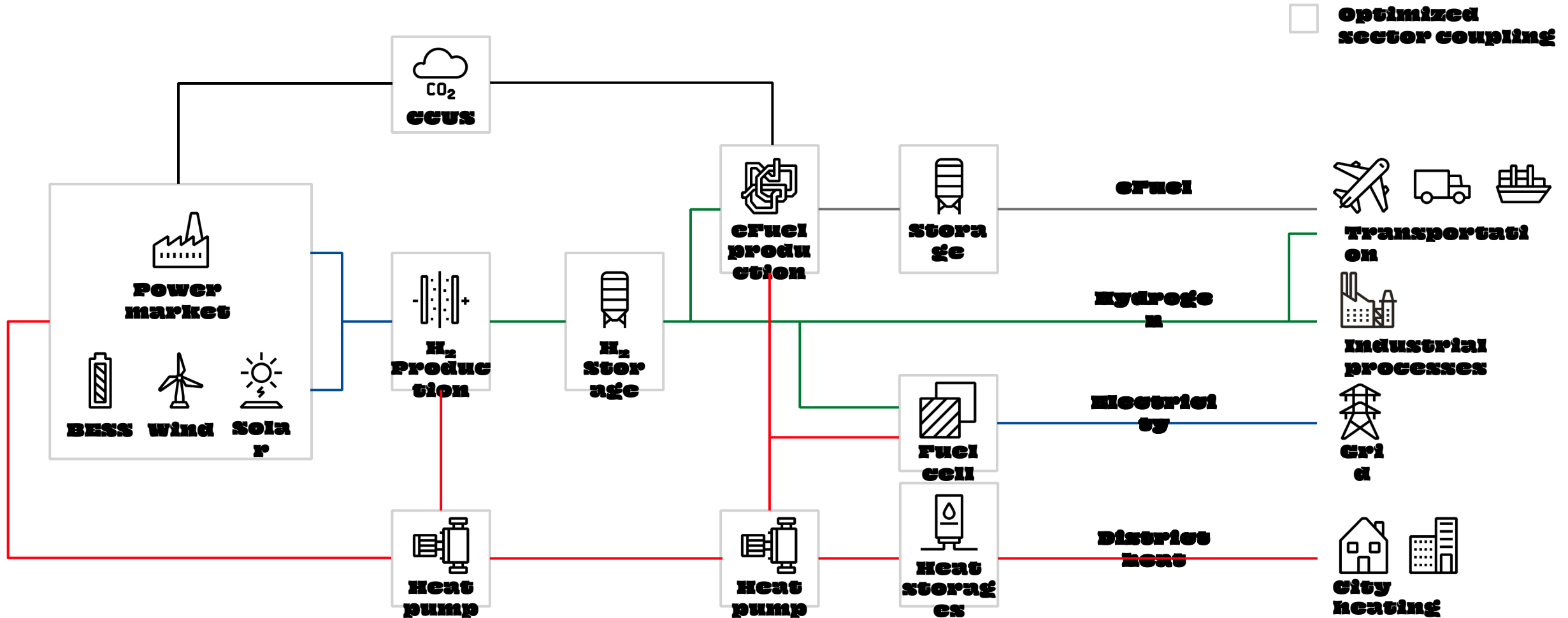


IEA. CC BY 4.0.

Electricity generation from unabated fossil fuels peak by 2030, as low-emissions sources ramp up and renewables dominate electricity supply in all scenarios by 2050



# Hydrogen is key to the circular energy system



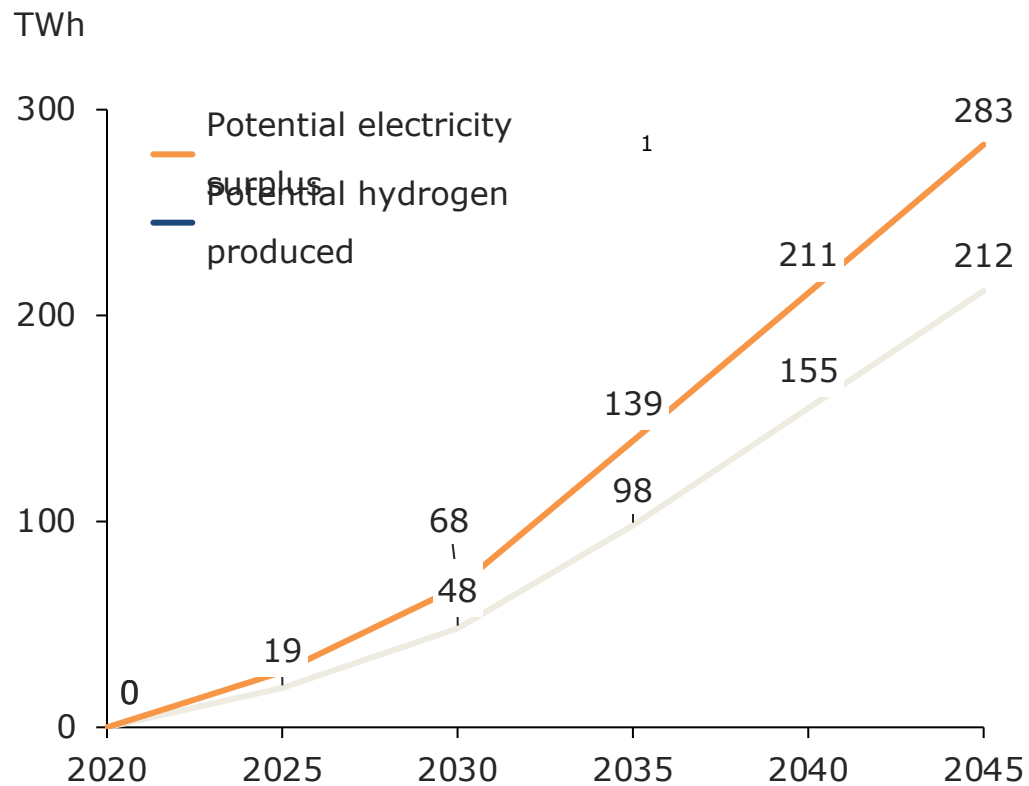


# **Finland: leading high-value hydrogen economy in Europe**

## **Hydrogen Economy Strategy 2023**



# Finland's abundant clean electricity potential creates the foundation for a H<sub>2</sub> economy.

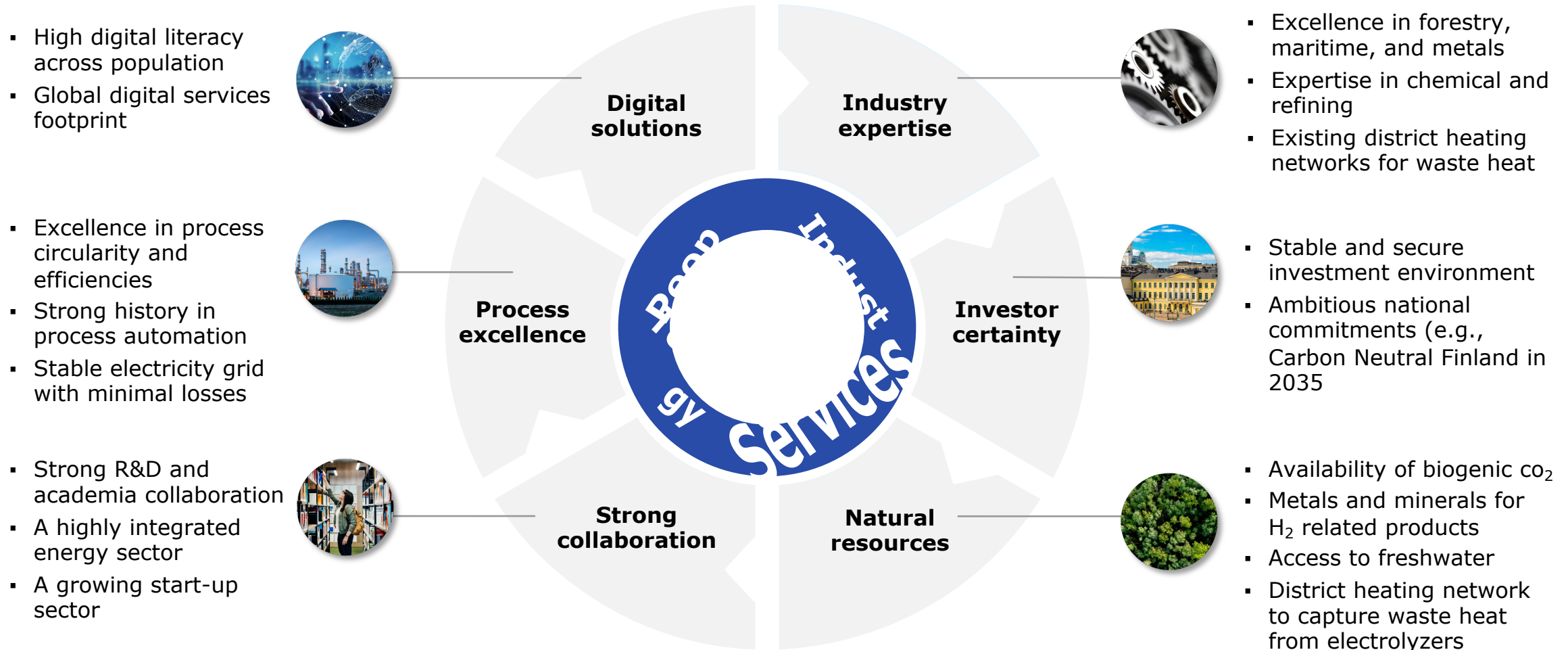


Finland could meet **14%<sup>2</sup>** of Europe's domestic RePowerEU target by 2030





# Finland has other advantages that strengthen its competitiveness in developing a H<sub>2</sub> economy.

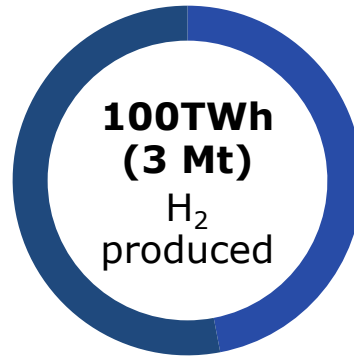


# Finland can accelerate to become the leading high-value hydrogen economy in Europe by 2035.

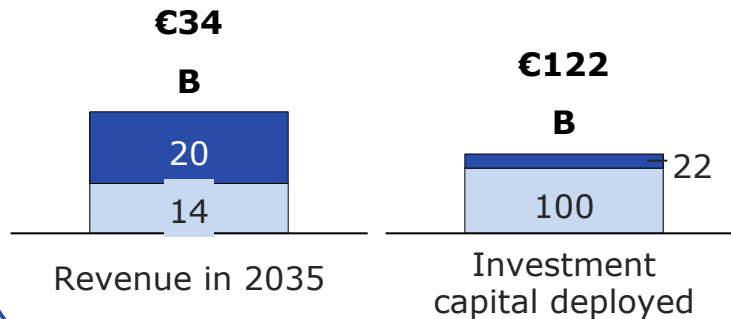
## Our ambition



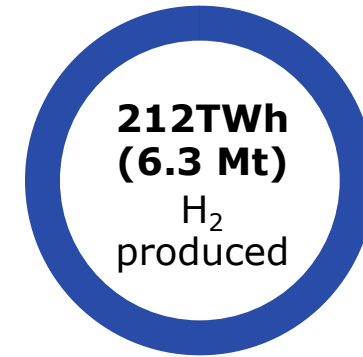
## Opportunity in 2035



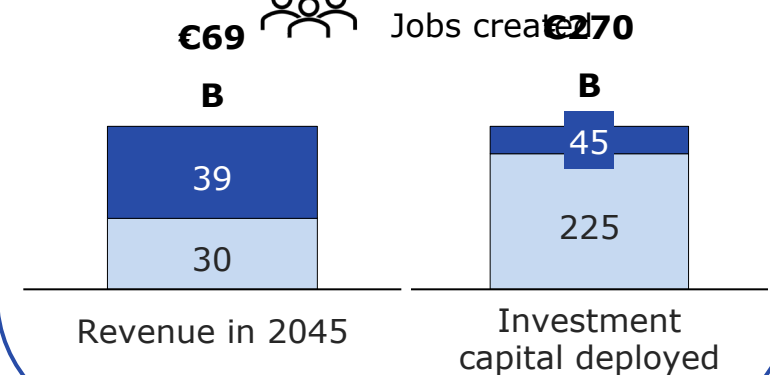
**115k**  
Jobs created



## Opportunity in 2045



**240k**  
Jobs created



■ Technology and services ■ Primary hydrogen use



# Acceleration requires seamless and agile cooperation across sectors.



1

## **Build Europe's leading hydrogen ecosystem**

Rapidly create favorable market conditions and regulation to accelerate the development of a hydrogen economy as outlined in the Government Resolution.

2

## **Drive progress through hydrogen valleys and cross-collaboration**

Establish hydrogen valleys to expedite projects based on regional strengths and ensure collaboration and sharing of best practices between these valleys.

3

## **Accelerate and align decision-making**

Establish well-led public and private sector bodies to coordinate and drive hydrogen strategy implementation. Ensure these bodies have clear mandates and the ability to make timely, cross-sectoral, strategic decisions.

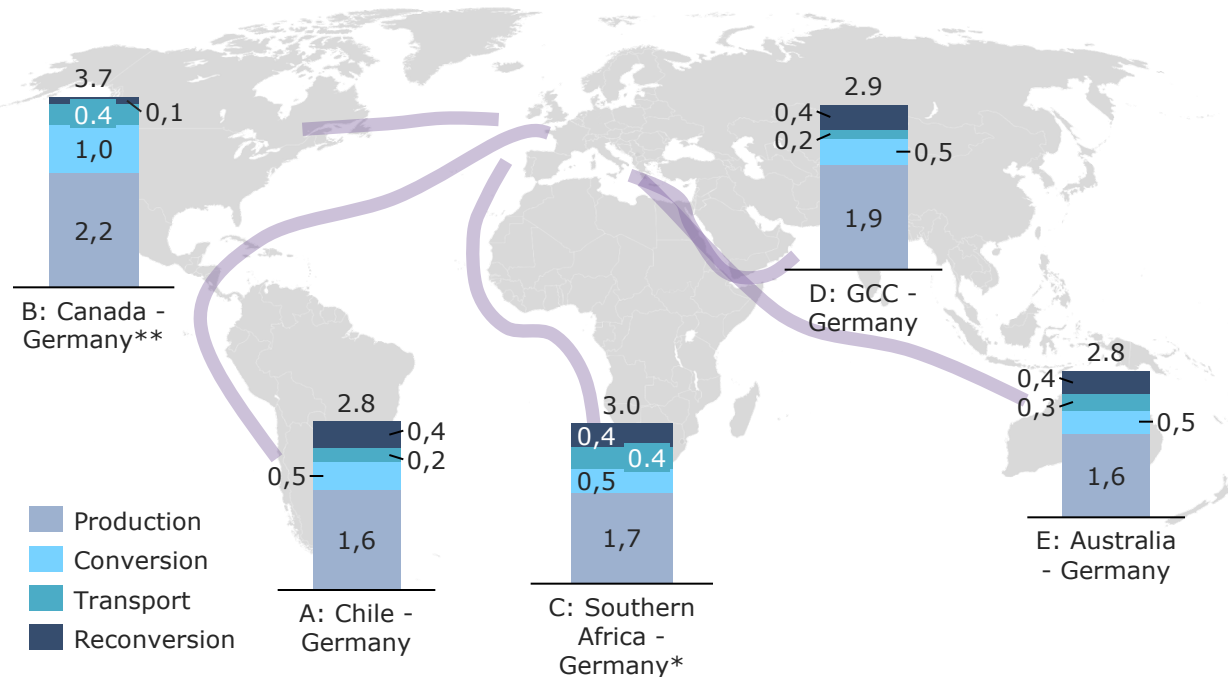
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## **Position Finland as a leader on the global hydrogen map**

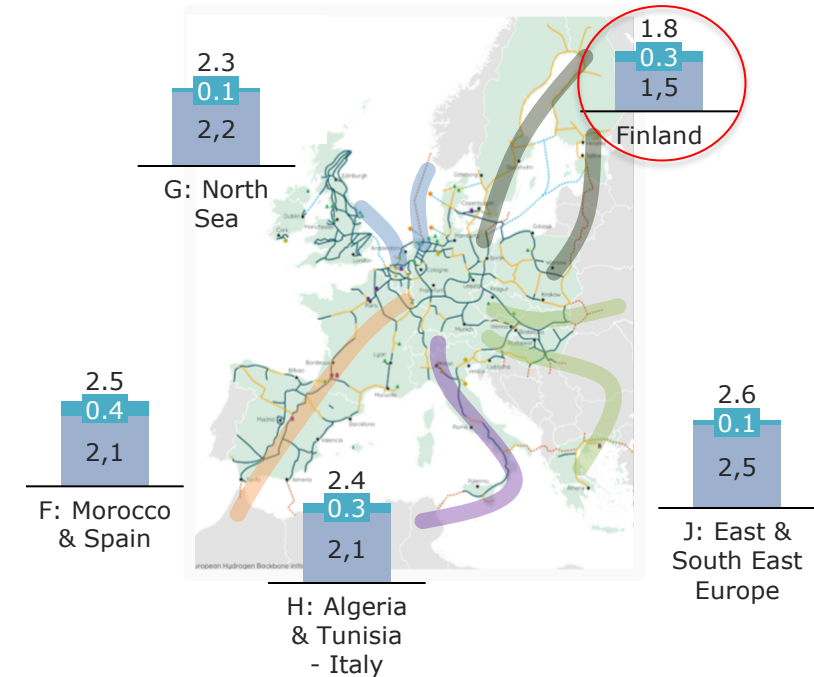
Influence hydrogen development within the EU, attract investments to Finland, and promote Finnish technology and services worldwide. Continuously communicate Finland's strengths, build strategic partnerships, and foster relationships with key countries.

# Finland's H<sub>2</sub> cost could be €1.8-2.5/kg by 2030-40 which is highly competitive.

Levelized cost of hydrogen for shipping corridors (€/kg) in 2030



Levelized cost of hydrogen for pipeline corridors (€/kg) in 2030

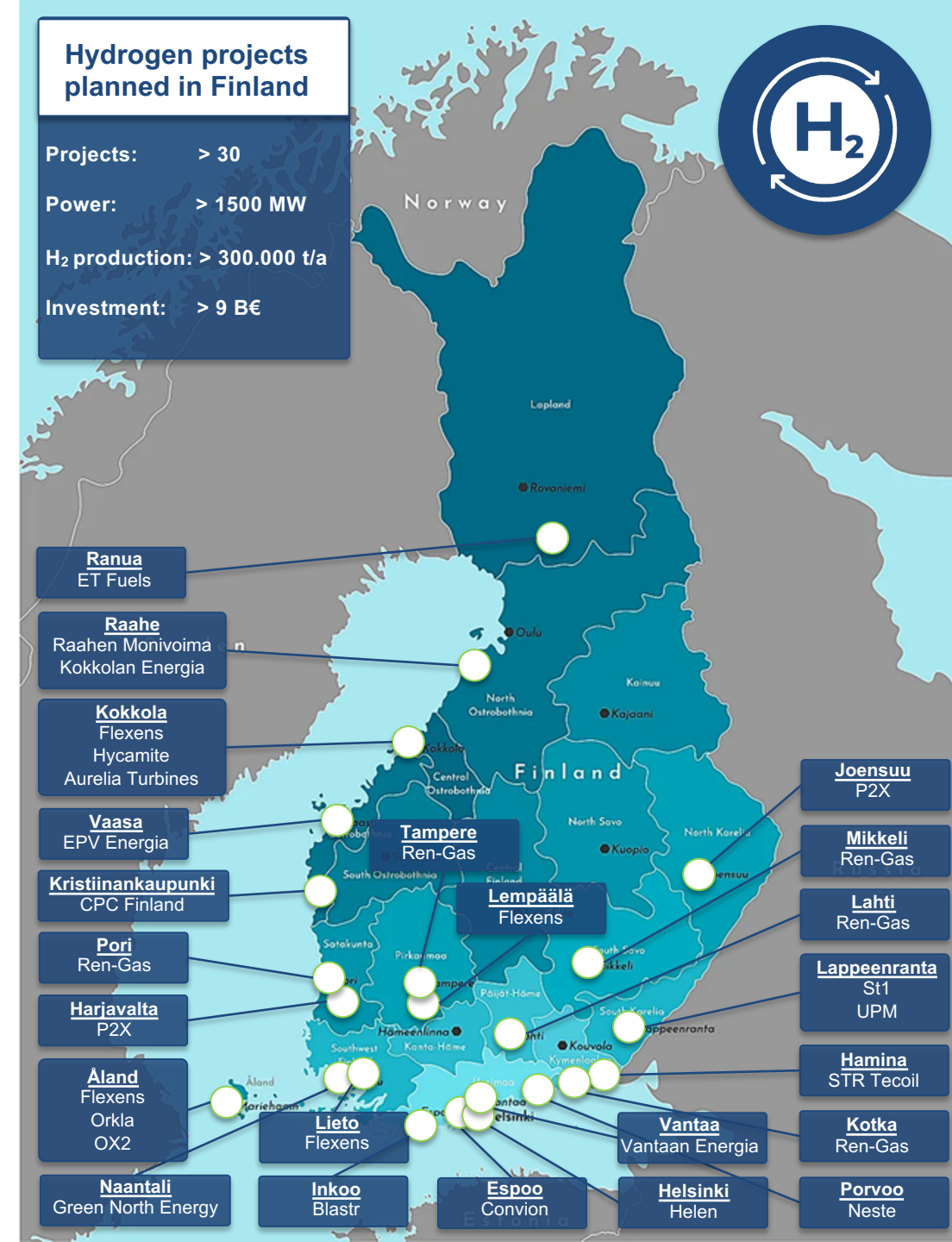


**Source:** Guidehouse analysis based on: EHB; Ministry of Natural Resources, Hydrogen Strategy For Canada (2020); Ministry of Energy, Government of Chile, National Green Hydrogen Strategy (2020); UNSW Sydney, The Case for an Australia Hydrogen Export market to Germany (2021); Department of Science and Innovation, Hydrogen Society Roadmap for South Africa (2021); Qamar Energy, UAE's Role in H2 Economy (2021). \*Carrier undefined in strategy; assumption: ammonia, \*\*Carrier undefined in strategy; assumption: LH2



# Hydrogen projects in Finland

- In 2023 there are more than 30 hydrogen projects planned or already under construction in Finland
- First projects to be commissioned in 2024
- Annual hydrogen production of the planned projects will be more than 300.000 tonnes
- Most of the produced hydrogen will be refined further into E-fuels or other products







**More information and how to join:**

**[www.h2cluster.fi](http://www.h2cluster.fi)**