

HyUSE

Use of hydrogen in combustion technology for industry and mobility

Start October 2024

Subsidy € 14.246.250

€ 2.344.685 **Private contribution**

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2 research institutes 7 universities 12 industrial partners

5 universities applied science



TU/e













Research Tasks



HYDROGEN AS A FUEL

in the energy intensive industry and for power generation



HYDROGEN FOR MOBILITY

and stand-alone energy systems



SYSTEM ASPECTS

of hydrogen introduction in various value chains



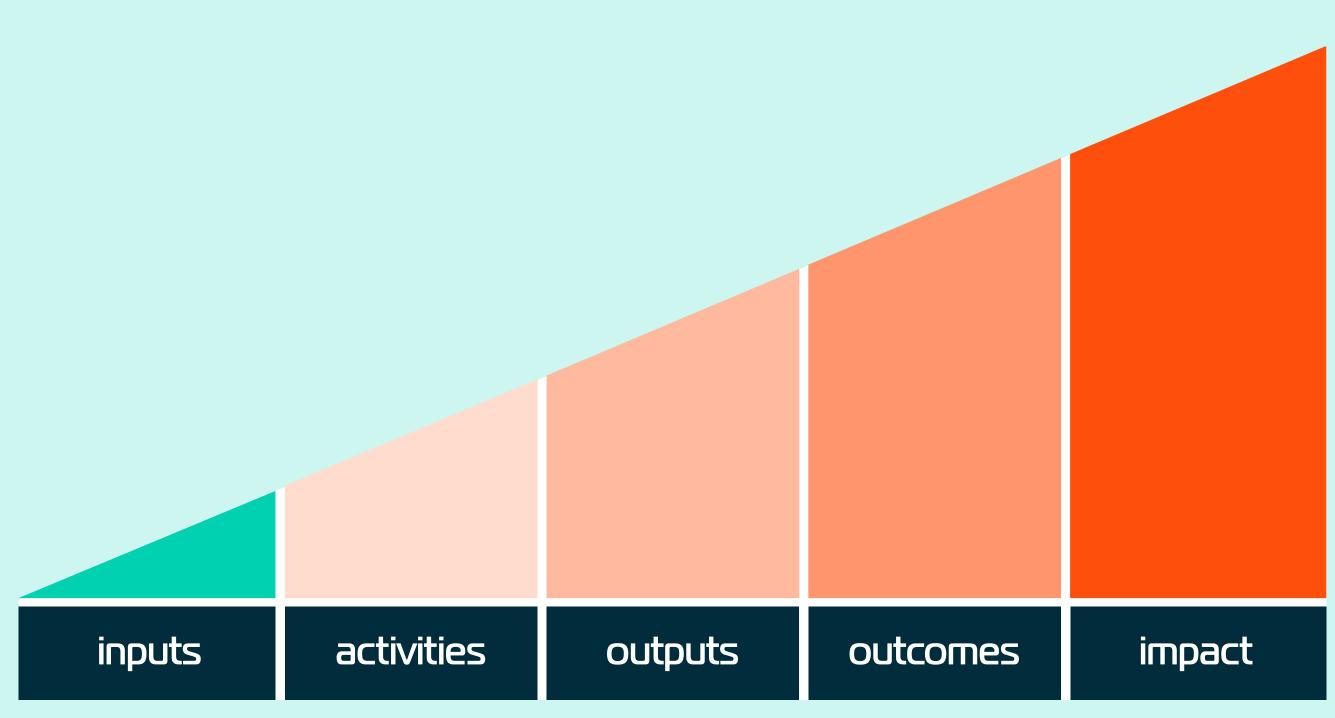
NON-TECHNICAL ASPECTS

of hydrogen introduction (policy, funding instruments and incentives, public support)



GroenvermogenNL ambitions

Acceleration	V
Scaling up	V
Reducing costs	V
Innovative ecosystem	V
New talents	V



Experts & state of art laboratories, funded talented researchers & resources.

Activities are structured in three technical tasks and two system-level tasks: Use of **hydrogen** as a fuel in the energy intensive industry and for power generation; Use of hydrogen for mobility and standalone energy systems; System aspects of hydrogen introduction in various value chains; Non-technical aspects of hydrogen introduction (policy, funding instruments and incentives, public support).

Improvement of hydrogen utilization methods for heat and power. Optimization of energy conversion processes. Identification of novel applications for hydrogen across various sectors. Modelling and simulation tools for system evaluation, and educational materials and practical guidelines to disseminate findings.

Adoption of and integrate hydrogen technologies into existing systems, Valuable insights into their technical, economic, and environmental aspects in sectors like energyintensive industries and power generation. Informing decisionmaking processes and policy development. Enhancing capacity **building** through educational outputs.

Acceleration both existing and newly developed H2 production technologies. Reducing costs of H2 production through innovation (new materials, more efficient electrolysis, system integration). Innovative ecosystem with new participants in the consortium. New talents because approximately 20 PhD's are recruited and become involved in hydrogen issues.

Z	2024	2025	2026	2027	2028	2029	2030	Beyond
	Methodology and overview ecosystem	 Combustion systems, fuel cell, and techno- economic research 	• Assessment of appli-cations	Design and prototyping		esting, ions, policy mix, of hydrogen valleys.		• Continue phase 2