

Energy4Mobility ExpertTalk

Welche Rolle spielt Wasserstoff für eine CO2-neutrale Mobilität?*



Hydrogen Europe in numbers

400+ Members

We represent the whole value chain
from producers to end users

44+ Employees

103k+

Followers
on Social Media

We are the
fastest growing
association in
Europe



System efficiency

The role of hydrogen as an energy vector for political and climate targets



The energy (in)efficiency question

Both e-fuels as well as **Hydrogen** face some energy inefficiency narrative ...

... but this narrative breaks down immediately after one starts to think about full decarbonisation of society.

There are at least several reasons ...

System efficiency	All electrification is not feasible (without large RES curtailment)
Resource efficiency	Not enough space and resources in Europe
Energy vector (efficiency)	RES imports are needed – in form of Hydrogen and derivatives

Value of Hydrogen









Hydrogen is a key enabling technology required for the emergence of a decarbonized ecosystem, as it provides an essential bridge between variable electricity supply options (dedicated RES and grid withdrawals) and the dynamics of hydrogen demand.

More precisely, five values of hydrogen can be identified, each corresponding to a set of services that hydrogen brings to the entire energy system, including from a cross-sectoral perspective:

Arbitrage value	Separation of "cheap / expensive" electricity price hours
Insurance value	Storage for time-shifted use to ensure sufficient volumes available to end-uses subject to uncertain demand levels (e.g. H2 turbines, H2 heating technologies).
System value	Sector coupling for "transport" beyond the electricity grid avoid over-investments in other infrastructure elements, across the entire energy sector
Kick-start value	Ability to store helps to optimally size investments in RES capacity in order to comply with transition targets, thereby facilitating the emergence of an hydrogen ecosystem.
Environmental value	Hydrogen as a energy vector helps avoid CRM and electric redispatch, stress on the electricity grid and avoids RES curtailment.

Markthochlauf durch Standardisierung und Zertifizierung

Beitrag zu einem einheitlichen Markt

Current type and plug name	Region			
	Japon	China	America	Europe
AC				
Plug name	Type 1 - J1772	GB/T	Type 1 - J1772	Type 2
DC				
Plug name	CHAdEMO	GB/T	CCS - Type 1	CCS - Type 2



SAE J1772



Type 2 Connectors
(Mennekes)



SAE Combo



CHAdEMO

Thank You



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