



ready4H₂

Europe's Local Hydrogen Networks

Club Español de la Energía, Madrid

Florian Feller – florian.feller@erdgas-schwaben.de

German Representative Ready4H₂; Head of Climate Strategy & Govt. Relations – erdgas schwaben gmbh



The Ready4H₂ alliance is united and committed to support net zero for Europe

The Ready4H₂ alliance unites 97 European gas distribution companies from 21 countries, all dedicated to deliver the hydrogen transformation in practice. We are convinced about the role hydrogen and other green gases will play in achieving net zero. Our joint goal is to become the leading European hydrogen distribution infrastructure.



MEMBER COUNTRIES (September 2022)

Austria	Italy
Belgium	Poland
Bulgaria	Portugal
Czech Republic	Romania
Denmark	Slovakia
England	Spain
France	Sweden
Germany	Switzerland
Greece	The Netherlands
Ireland	Ukraine
Israel	



Our networks are ready to adopt green molecules



Hydrogen

Currently, **96% of the pipelines** of Ready4H2 members are from a material that **allows conversion to pure hydrogen**.



Biomethane

Biomethane is already used in gas grids to deliver climate friendly energy.

Local gas distribution networks are **flexible** and can distribute and manage **varying blends** of green molecules from different sources, depending on the local mix of supply and demand, substantially reducing fossil fuel use.



The gas distribution infrastructure is crucial to supply Europe with energy. Transforming this existing infrastructure helps transform its customers.



INDUSTRY & COMMERCE

Over 99%

of industrial and commercial premises connected to gas infrastructure are served by local gas networks.



HEATING HOMES

Up to 50%

of homes are heated with gas in our members' countries. Ready4H2 Alliance members alone keep 64 Mio households warm and supply gas to 12 000 CHP plants for district heating systems.

Transformation of the local gas distribution networks will enable Europe to achieve net zero by 2045

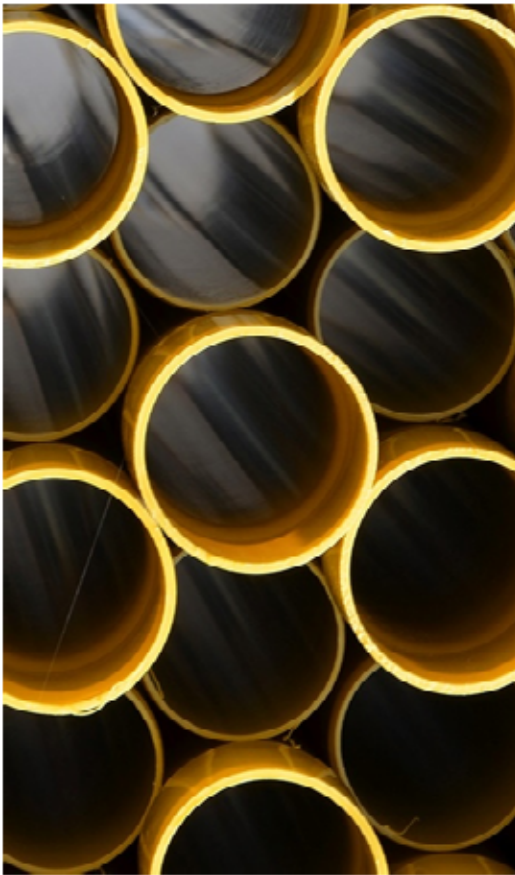


Become climate-neutral by 2045

- Local gas networks aim to be the leading hydrogen distribution infrastructure to achieve net-zero in Europe:
 - Connecting producers and consumers to enable a big hydrogen market.
 - Transforming our networks to operate with 100% hydrogen.
 - Delivering at scale through pilots, major workforce training and taking on new roles and responsibilities.
- Local gas networks can also help to convert millions of homes to hydrogen faster than a full electrification retrofit, speeding up the transition from natural gas.

Local gas networks are ready to enable a big hydrogen market, helping achieve net zero in 2045.

The transformation of the gas infrastructure enables significant advantages for reaching net zero



TRANSFORM CHEAPER

€41 billion annual savings



in Europe by 2050 when investing in combined gas and power infrastructure instead of a power dominant infrastructure

ENSURE SECURITY OF SUPPLY

Up to 3 months

of increased heat demand even during the coldest winters can be reliably supplied by gas storage and local gas networks

BALANCE FLUCTUATING POWER SUPPLY

300% increase

In solar and wind capacity estimated by 2050. Resulting increase in power supply can be managed (Hydrogen storage facilities can equalize seasonal production patterns and absorb surplus renewables) by the gas infrastructure



The Ready4H2 Roadmap - Our key actions towards net zero in 2045

Societal drive to decarbonise: European and national net zero targets

Now

We have various starting points:

- Over 2 500 DSOs in Europe - supplying a variety of customer groups
- Different gas demand profiles in different countries
- Varying future biomethane availability in different countries

But we share common values:

- Trustworthy and reliable supply, with very few interruptions
- Flexible hubs connecting distributed supply and demand
- Providing seasonal scale to deliver winter heating
- Innovation and digitisation to connect biomethane and prepare for hydrogen

We commit to action in 3 areas

Facilitate hydrogen market development

Offer access to hydrogen for consumers

Offer hydrogen producers a route to market

Build confidence in hydrogen

Transform our networks

Complete network repurposing and undertake targeted new build to ensure capacity

Continue to make our networks digital and smart

Convert our networks to net zero based on detailed roll-out plans

Deliver at scale

Deliver pilots in communities and targeted industry clusters

Attract and retain qualified workforce, upskill for hydrogen

Prepare for additional roles and responsibilities

Enablers that help local gas distribution networks to make the transition

Infrastructure and technology for hydrogen

Supply from H2 backbone, storage and local production

Conversion of existing end users and new end users

Fit for purpose policy & regulatory framework

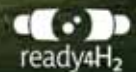
National hydrogen strategies and enabling regulation

EU policy framework

2045

One achievable goal:

Be the leading hydrogen distribution infrastructure to achieve net-zero across Europe



The Ready4H2 hydrogen roadmap shows actions and milestones for European local gas distribution networks from today's various starting points until the common 2045 net zero goal

Although exact timings will vary between local gas networks and countries, there are three **key stages**:

Early/mid 2020s

Complete the main knowledge elements to prepare for conversion, including 100% hydrogen safety case and new billing arrangements

2020s

100% hydrogen trials and larger pilots in buildings and industry, building confidence in hydrogen

Late 2020s and 2030s

Roll out and deliver hydrogen, including blending with natural gas as a stepping stone, and blending with green methane in some areas as a net zero solution



Benefits from a large-scale hydrogen transformation

EU SECURITY OF SUPPLY

No more fossil gas imports

From 2045 only renewable gas (including a substantial share of H₂) will be distributed in the European gas grids

JOB CREATION

Nearly 1 million

direct and supply chain jobs in Europe by 2050, including in green hydrogen production, operations and maintenance, and the electricity needed for green hydrogen

CO₂ EMISSION REDUCTION

540 million tonnes

of annual CO₂ equivalent abatement by 2050 if industry, buildings, transport and power across the EU switch to hydrogen




ready4H₂

Allowing local gas distribution networks to manage the transition to hydrogen is the fastest way to achieve climate neutrality

European Coordination

Local gas distribution networks need to have a role in the strategic planning of future European energy infrastructure through the creation of an independent European DSO entity for natural gas and hydrogen, ensuring a strong and fair representation.

Continuity & Authority

Local gas distribution networks should be able to use their existing organization and customer data to convert from operators of natural gas grids to hydrogen grids

Flexibility

Local gas distribution networks need to be allowed to operate pure hydrogen grids, with the flexibility to distribute hydrogen based on supply, demand and network readiness

No further unbundling

Proposed strict unbundling of hydrogen distribution networks will not help the energy transition – a unified organization needs to manage the conversion





Phase 2 of ready4H₂ has started and has three key objectives



Implementation
of the

ready4H₂
Roadmap
across Europe



European
knowledge
sharing platform



Impactful
communication