



Add value.
Inspire trust.

Green Hydrogen Certification

Prove your commitment to a sustainable energy supply

Your challenges

Preserving natural capital, achieving sustainability, and implementing circular economy models in all industry sectors is one of the defining challenges. Hydrogen will play a central role in a carbon emission-free future. Especially energy-intensive sectors like transportation and industry depend on low carbon and green hydrogen to reduce their impact on the climate.

For companies, hydrogen can be an enormous opportunity to increase business resilience and decrease the dependency on fossil fuels. However, large-scale production of low carbon and green hydrogen (through electrolysis, pyrolysis, or steam reforming with CCUS) is still in an early stage. Creating the infrastructure and equipment for hydrogen requires additional investments. The transformation from fossil to hydrogen energy can be challenging, and companies need to understand the whole value chain. Hydrogen has been around for decades but has usually been used for industrial purposes without focusing on decarbonisation. The

demand for it as a low-carbon energy carrier has significantly increased in the last years. However, regulations, codes, and standards (RCS) are not yet evaluated in a way that enables companies to implement hydrogen projects and qualify equipment easily; this is especially true for large-scale systems.

What is Green Hydrogen?

Green Hydrogen is defined as 'Hydrogen produced from renewable energy sources or/and waste as well as residual materials/by-products in accordance with TÜV SÜD's Green Hydrogen certification standard CMS 70.

Why is Green Hydrogen important?

Hydrogen itself, broken down to the smallest part in the periodic table is always free of carbon. But that does not mean, that all produced hydrogen is green and free of carbon. The difference is made throughout the production process. When Green Hydrogen is produced, only renewable energy sources (mostly from photovoltaic and wind) are used to provide the energy



needed for hydrogen production, e.g., via electrolysis.

Legal requirements for Green Hydrogen

The European Union's renewable energy directive 2 (REDII) outlines several legal requirements for the economy to comply with soon. From 2021-2030, it is important for companies to adapt their energy production to renewable energy as well as to renewable fuels from non-biological origin (RFNBO).

The EU is following a strategy called "fit-for-55". It focuses on the objective to actively reduce CO2 emissions until 2030 by 55% (in comparison to 1990). Furthermore, REDII has set targets for decarbonisation and the use of renewable energy. Those strategies are prompting companies to react and align their energy strategy accordingly.

The transport sector must have a share of 14% of renewable energy by 2030 and 2.6% of fuels are supposed to stem from renewable fuels from non-biological origin. This means it is vital for businesses in the transport fuels sector to change to Green Hydrogen and have a certification to prove their compliance.

How can we help you?

Only Green Hydrogen guarantees significantly lower greenhouse gas emissions. But claiming that hydrogen is green should not stand alone. Certified Green Hydrogen can be traced back to clearly identifiable and quantifiable sources. It's the only hydrogen that is substantially sustainable, with low to no carbon dioxide emissions

throughout the production process. TÜV SÜD offers its own CMS 70 GreenHydrogen certification alongside external standard certifications such as ISCC Plus and CertifHy.

This is how Green Hydrogen certification from TÜV SÜD helps your business to prosper:

1. Verify the quality of your Green Hydrogen production through an independent partner
2. Demonstrate the sustainable nature of hydrogen from production to transport and consumption
3. Use the certification of your Green Hydrogen as a quality feature of your product for your customers

The Green Hydrogen certification process at TÜV SÜD

The Green Hydrogen certification process at TÜV SÜD follows six general steps.

1. Inquiry

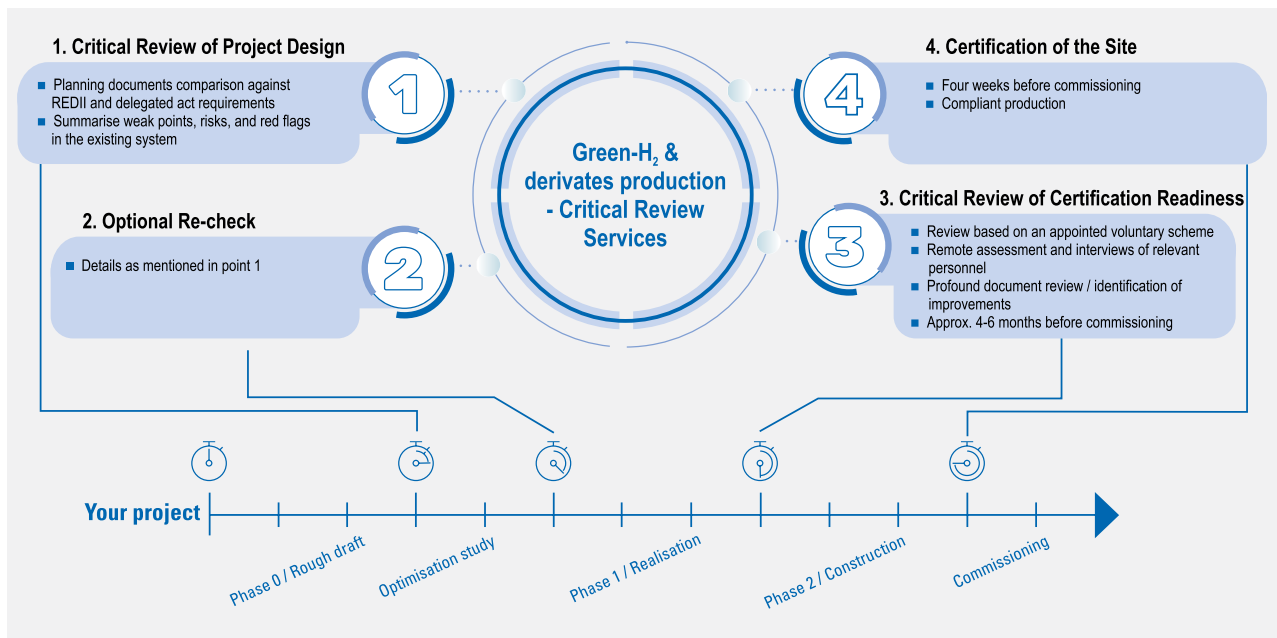
- Inquiry information questionnaire
- Eligibility check
- Proposal

2. Audit Registration

- Order placement
- Agreement with certification scheme
- Scheduling
- Approval of Certification Body

3. Document Review

- Risk assessment
- Document checklist



- GHG-calculation
- Audit plan

4. Audit

- Audit (incl. onsite audit)
- Clarification of open issues
- Audit report

5. Certification

- Technical Review by Certification Body
- Formal Review by Certification Body
- Certification decision – Issuing of Certificate
- Registration of Certificate by Certification Scheme

6. Start of certified production by certificate holder

- Quality management and documentation
- Monitoring of production, sales and GHG emissions

Your business benefits

- **Associate with a renowned and independent third-party partner** - with longstanding expertise in certification of hydrogen from renewable sources
- **Gain competitive advantage** - from the high brand recognition that TÜV SÜD provides, along with a high market acceptance and a standing for robustness, reliability, and stability
- **Strengthen your commitment to sustainability goals** – with a guaranteed proof of origin from TÜV SÜD alongside the Green Hydrogen certification, allowing

organisations to showcase their commitment to a sustainable, future-proof energy supply and provide upstream product emission information to their customers

Add value. Inspire trust.

TÜV SÜD is a trusted partner of choice for safety, security and sustainability solutions. It specialises in testing, certification, auditing and advisory services. Since 1866, the company has remained committed to its founding principle of enabling progress by protecting people, the environment and assets from technology related risks. Through 25,000 employees across 1,000 locations, it adds tangible value to customers and partners by enabling market access and managing risks. By anticipating technological developments and facilitating change, TÜV SÜD inspires trust in the physical and digital world to create a safer and more sustainable future.

Related services

TÜV SÜD provides the following related services:

- Advisory & Feasibility Services
- Training for Hydrogen
- Hydrogen Production
- Hydrogen Storage and Distribution



Transform your business today with TÜV SÜD

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