



Existing training occupations are appropriate for hydrogen production - in addition, safety-related qualifications are needed

The production of hydrogen does not require any additional training occupations. This is the preliminary finding of the sector-analysis „Hydrogen Production“ by the BIBB. Nevertheless, according to authorized workplace safety regulations (German: [Betriebssicherheitsverordnung, BetrSichV](#)) plants and equipment for producing, storing and transporting green hydrogen must be monitored due to pressure and explosion hazard. It can be assumed that in the near future, these systems – depending on their dimension – will be part of the country's critical infrastructure (KRITIS). Therefore, working with hydrogen plants and equipment requires the consideration of effective laws and standards. Employers are responsible for ensuring that skilled workers have appropriate qualifications according to their tasks and position, and that they participate in instructions and trainings if necessary.

Skilled workers are indispensable, cross-sectional occupations are in demand

Which training occupations are required is related to the specific work tasks (see opposite table).

The relevant training occupations are cross-sectional and from the field of industrial-technical professions, for example metal-and electrical occupations as well as process technicians. Skilled workers trained in these professions are already employed in many sectors of the German economy.

Training regulations define the occupations' profiles and associated skills and knowledge based on the principle of openness to technology. This principle ensures that training regulations can be adapted to the demands of the companies that provide the occupational trainings.



Professionals during planning

Activities for plants/equipment	Typical training occupations (examples)
Planning and developing	<ul style="list-style-type: none"> › Technical system planner › Technical product designer
Installing	<ul style="list-style-type: none"> › Plant mechanic for sanitary, heating and air conditioning systems › Industrial mechanic › Information Technology Specialist
Monitoring and Commissioning	<ul style="list-style-type: none"> › Mechatronics fitter › Electrical system fitter › Information technology specialist
Operating	<ul style="list-style-type: none"> › Chemical technician › Chemical Production specialist
Maintaining	<ul style="list-style-type: none"> › Mechatronics fitter › Electronics technician for automation technology
Safety monitoring	<ul style="list-style-type: none"> › Protection and security specialist › Company firefighter

Legislations provide safety for employers and employees in hydrogen production

Several legal regulations apply for the production, storage and transport of hydrogen to ensure safety for plant operation and for working processes. These include, for example

- › **Workplace safety regulations (German: Betriebssicherheitsverordnung, BetrSichV)**
- › **Accident prevention regulations by Accident insurance providers**

The legislations determine which safety-relevant qualifications are required, depending on the skilled workers' function and the specific work tasks.

Currently, there are no specific requirements for skilled workers related to **planning and development** as well as to **installing of plants**.

Commissioning takes place depending on the type (first or recurrent commissioning after maintenance, adaptation or review), on the size and on the environment of the plant. It is always carried out by 'persons qualified for testing'. They are either employed by the company or by approved monitoring institutions.

'Persons qualified for testing' have to fulfil requirements that are different with regard to high pressure plants and explosion hazard. 'Persons qualified for testing' are instructed and assigned by managing directors who take the responsibility for their activities.

For **plant operation** employers have to assign 'skilled persons'. According to the workplace safety regulations, a skilled person provides specific knowledge for the fulfilment of a certain task: "The requirements for expertise depend on the respective type of task. Requirements include appropriate vocational training, professional experience or recent relevant professional activity. The knowledge has to be kept up to date".

According to the work place safety regulations, **maintenance activities** have to be carried out by employees who are 'skilled' assigned and instructed - or by contractors providing comparable qualifications.

Working with the hydrogen network or with hydrogen plants – as well as operating hydrogen plants – requires from employers to set protective measures considering the special characteristics of hydrogen. Respective recommendations are currently elaborated by the DGUV („German Social Accident Insurance“, see: [DGUV Forum 6/2022](#) (in German)).

In order to fulfill their mandate according to Section 14 of the German Social Code VII (German abbreviation: [SGB VII](#)), employers' liability insurance associations and accident insurance funds (accident insurance institutions) issue 'accident prevention regulations' (DGUV regulations) in their respective fields.

Interim conclusion of the BIBB sector analysis

Existing training occupations largely cover the qualification requirements for skilled workers. In addition, safety-related qualifications are needed.

Since hydrogen technologies have already been in use for many years existing regulations can be applied.

More detailed information is available in the full version of the BIBB sector analysis "Hydrogen Production" (in German).



[BIBB sector analysis "Hydrogen Production" \(PDF\)](#)
(in German)



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