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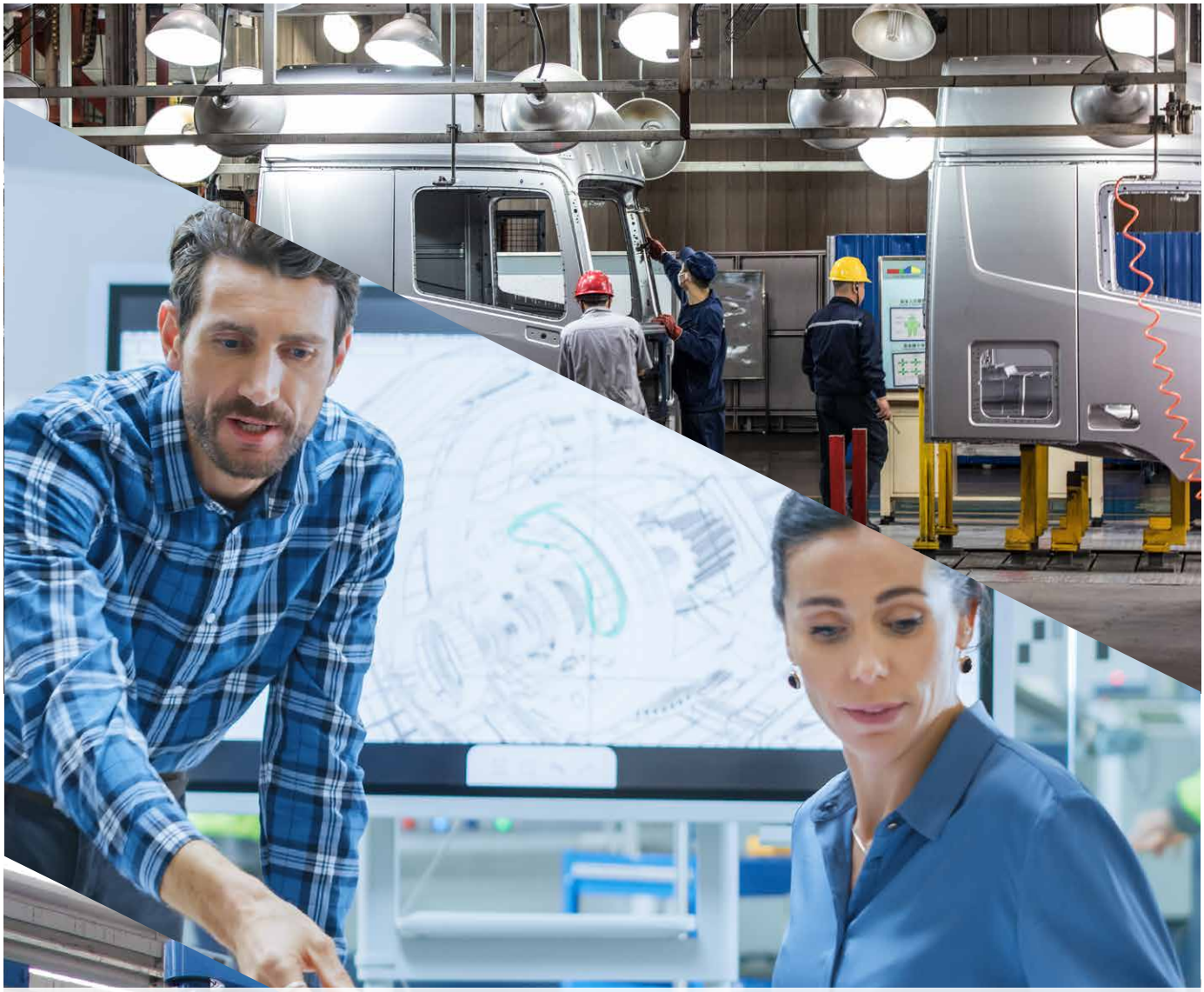

Trade union demands for the hydrogen economy: Towards an H2-ready work-force

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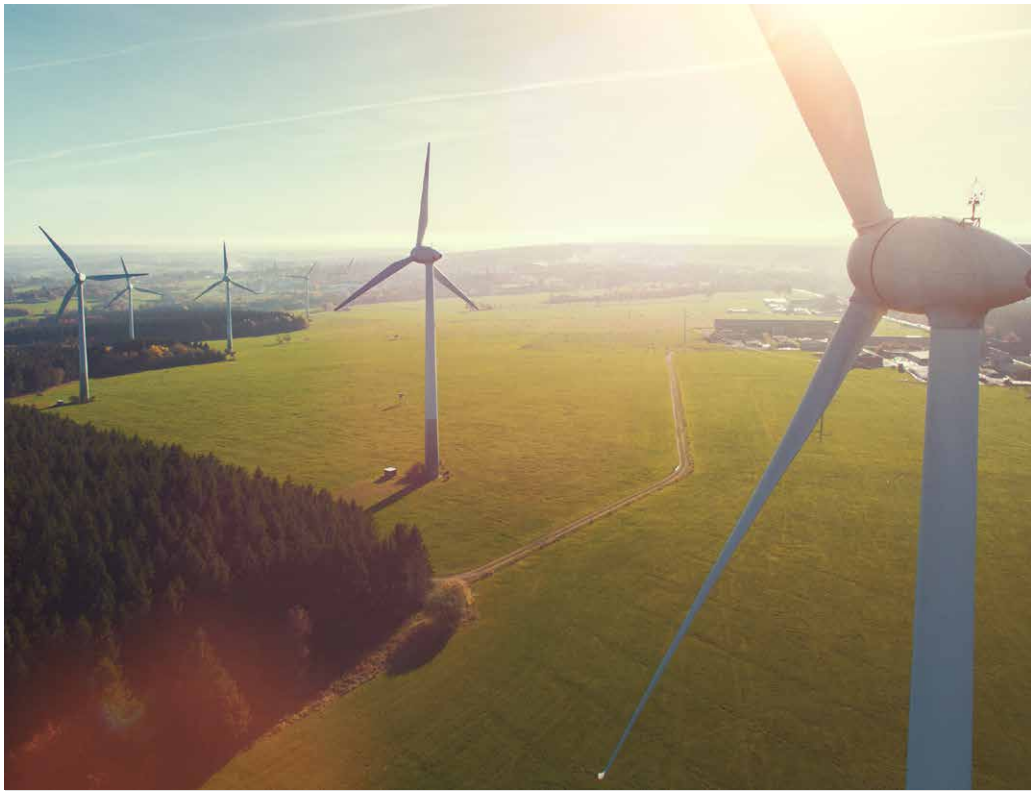
With the tightening of national and European climate targets, ramping-up the hydrogen economy in Germany, Europe and the world becomes all the more urgent. In view of the climate targets that have been agreed, climate neutrality can only be achieved with climate-neutral hydrogen and synthetic fuels that are based on it.

The current political debate focuses primarily on the technological and economic aspects of the hydrogen economy. This view falls short of what is needed for a successful ramp-up. Even the most innovative technology depends on employees who can master it. Therefore, not only must facilities and infrastructure be designed to be H2-ready, but we also need a well-qualified "H2-ready workforce".

The goal of the ramp-up of the hydrogen economy must be to establish a comprehensive hydrogen value chain in Germany and Europe.

The DGB and its member unions call on politicians to broaden the current discussion to include the effects on employment in the hydrogen economy, including qualification requirements, social acceptance as well as regional significance.



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1. Climate-neutral hydrogen secures jobs

Climate-neutral hydrogen is the prerequisite for climate-neutral energy-intensive industries or, for example, climate-neutral shipping and aviation. Securing energy supply without hydrogen-powered CHP plants is also inconceivable. If you want to secure modern industrial capabilities in Germany, secure socially acceptable mobility and heat, and at the same time realise climate neutrality, you must also provide sufficient hydrogen. Climate-neutral hydrogen secures jobs and prosperity in the long term.

As of today it is difficult to estimate how many new jobs will be created by a hydrogen economy. Previous studies usually only refer to gross effects and assume optimal ramp-up conditions. It is therefore important that the ramp-up of the hydrogen economy and the subsequent transformation of industry and services are supported by employment-oriented measures.

These are our demands:

» We need a rapid **ramp-up of hydrogen production** in Germany and Europe already in the **short term in order** to achieve the climate goals in the long term. This requires a **massive development of renewable energies**. The obstacles to expansion are well known, and so are possible solutions. Politicians must finally back up national climate policy with action. In view of droughts and scarce water resources, competition over drinking water production must also be ruled out.

» **Precise effects on employment** have not yet been analysed. What is needed here are **studies within the framework of the national hydrogen strategy** that take up possible developments in different sectors and develop scenarios of what quantitative and qualitative employment effects could be associated with them. Otherwise, the debate on employment effects will be too broad and undifferentiated and raises false expectations. Likewise, possible skilled labour and qualification needs must be identified so that the education system and labour market can adapt to the new requirements.

» In order for the ramp-up of the hydrogen economy to quickly secure jobs, financing instruments are needed that specifically support the transformation of industry. This includes a public **transformation fund** for strategic investments in the future viability of industrial value creation and to cushion increased operational costs, as well as targeted funding programmes and **climate protection contracts / carbon contracts for differences that** enable application on a large industrial scale. Climate protection contracts and support programmes should be **linked** to the aspect of **securing employment and good working conditions**.

» **"Green" products** will initially be more expensive than their established counterparts. This also applies to products that become part of the hydrogen value chain. Therefore, the state should specifically act as a buyer of such products, for example through **procurement quotas** for sustainable raw materials such as "green" steel, or **promote** their **acquisition, e.g.** fuel cell-powered commercial vehicles, buses, railcars, locomotives or construction machinery.

» Combined heat and power (CHP) plants will continue to play a key role in the energy system of the future. Therefore, reliable political framework conditions are needed in time to enable a conversion to and the construction of new **hydrogen-based CHP plants**.

2. Qualified for the hydrogen economy

An H2-ready workforce requires much more than studies that explore possible employment effects. The issue of qualification will be central in the next 10-15 years and will gain importance in the short term when switching to new technologies.

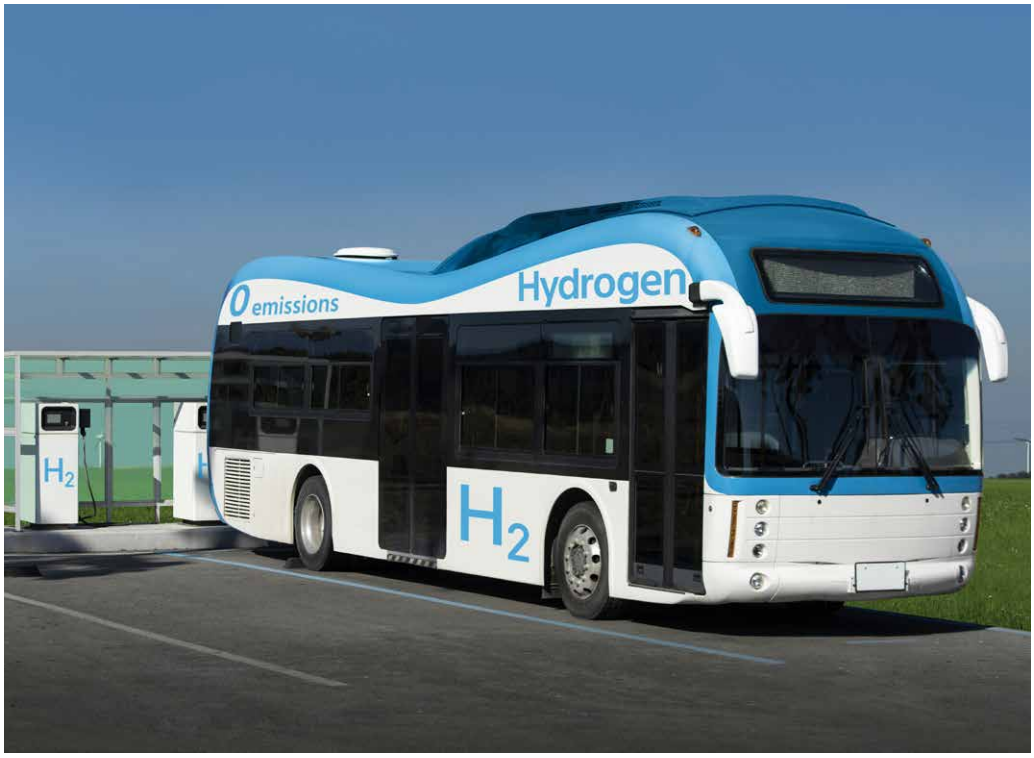
Qualification needs in the various sectors differ widely when it comes to the use of hydrogen. Sometimes transformation means establishing a new process or new equipment (e.g. hydrogen direct reduction). Sometimes it means developing and selling new products (e.g. fuel cell-powered means of transport). Sometimes it means making fuel or feedstock climate-neutral (e.g. synthetic naphtha, synthetic paraffin). In addition, the topic of digitisation also places new demands on the qualifications of employees. In part, there may be an overlap of job requirements.

Hydrogen is not only a topic for research. In production and use, current and future employees at all levels of qualification will play a decisive role in shaping the hydrogen economy. Whether engineers, electrical or mechanical engineers, car mechatronics technicians, heating installers, but also staff of other departments of a company, such as logistics, purchasing or sales: all of them will need specific knowledge about hydrogen and often also about working in the high-voltage sector. And above all, they must be given the opportunity to obtain these skills at an early stage. Even for emergency or breakdown services, new requirements arise when one thinks of an accident or, for example, a fire at a hydrogen filling station.

We therefore need to take a close look at the qualifications along the hydrogen value chain: from development and production to distribution and use. The qualifications do not have to be available to all employees from day one. But they must be built up continuously as the hydrogen economy ramps up, with the participation of the workforce. And this development takes time. The experience of previous pioneers of the hydrogen economy shows that half a year to a year of additional qualification is necessary for each employee. And this not only applies to large companies, but also to employees in small and medium-sized enterprises. As always when you deal with a technology that comes with a lot of regulatory requirements, administration staff must also be qualified and available in sufficient numbers.

These are our demands:

» A broad-based **hydrogen qualification dialogue** should determine sector by sector which qualifications staff will require in the future when hydrogen is used. This dialogue must not only involve industry associations, but must be designed as a dialogue among social partners and also include other actors such as chambers, the Federal Employment Agency and the scientific community. The aim should be to arrive at sector-specific qualifications, e.g. in the form of additional professional qualifications and standardised adaptation qualifications. If necessary, new occupational profiles can also be considered. The continuous skills monitoring of the Federal Institute for Vocational Education and Training (BIBB) and the Institute for Employment Research (IAB) on changing requirements in occupational fields should be included here and used to identify need for action in qualification and vocational training.



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» Technological support programmes should always include **accompanying research relevant to employment and society**. Pilot projects can be used systematically to identify qualification needs of the future and then roll out corresponding programmes on a broad scale. At the same time, it is necessary to involve society in order to avoid acceptance problems during the ramp-up of the hydrogen economy.

» In order to be able to address the issue of qualification in the company, **binding strategic personnel planning** is required in order to derive personnel development needs.

» Works councils must have a stronger say in issues such as **job security, qualification measures, training** and **further education**. In this way, workers can also get more involved in the issues themselves and do not only have to hope for the company management to do a good job.

» The employment agencies with their advisory services on continuing education (employer service), job qualification (lifelong career counselling for employees), qualification support for the unemployed as well as career orientation/career counselling before working life (pupils) must adapt to this. Last but not least, existing labour market policy instruments must be further developed and financial support during qualification must be secured in order to enable the smoothest possible matching between existing workforce and new requirements. In addition, suitable continuing education opportunities must be provided.

3. Lack of skilled labour brings additional pressure

Existing vocational qualifications can be used across the hydrogen economy value chain. Frequently these are qualifications in short supply already today, unfortunately, which will be further exacerbated by the ramp-up of the hydrogen economy as demand continues to increase. Engineers, mechanical engineers, electrical engineers and junior IT operatives are just a few examples. Increasing demand for labour is owed not only to the hydrogen economy itself, but also a reorientation of the economy towards climate neutrality in general.

In Germany the supply of skilled labour is high. In case of long-term shortage of skilled labour in core professions of the hydrogen economy, however, Germany might not be able to pursue important activities along the value chain. As a consequence, employment opportunities for members of other professions could also be limited.

These are our demands:

» For the ramp-up of the hydrogen economy to be successful, **more students and trainees** are needed in critical areas. With regard to **climate neutrality**, policy-makers should present **an assessment as to** which and how many skilled workers will be needed in future for sustainable professions – taking into account future demographic developments. There must be **proactive capacity building** in teaching and practice.

4. Co-determination and collective agreements for more innovation

What applies to the hydrogen economy must also apply to other sectors of the economy: Climate-friendly products and services must not be systematically based on practices that are harmful to society. We need good working conditions, co-determination and collective bargaining coverage in this industry right from the start. This is something that the government must demand for the good of the society it represents.

Co-determination is a motor for corporate innovation. This innovation engine is indispensable in times of transformation.

These are our demands:

» **State subsidies** should only be granted to companies that offer their workers good working conditions and respect and comply with the principles of co-determination. Making subsidies conditional on companies being **bound by collective agreements** is an important step in this direction. This also applies to the instrument of climate protection agreements and to public procurement.

» • Transformation must be managed: not only by management, but also by labour. This requires works councils with strong co-determination rights. Therefore, **new co-determination rights** should be included in the Works Constitution Act on issues such as **environmental and climate protection**, so that also employees can be a driving force in the ramping-up of the hydrogen economy.

» If parts of companies with a focus on hydrogen are spun off, **collective agreements** must also **be binding in these spin-offs** in order to avoid wage dumping and worse working conditions.

» **Collective bargaining, co-determination and democratic participation** at the workplace must also be taken into account in **smaller companies**. Here, too, it is important for employees to have a binding say in the changeover processes at company and enterprise level at an early stage.

5. Exploiting regional potential

In order to build a strong position in the global development of the hydrogen economy, strong and active hydrogen regions are needed. Each region is different. And the economic opportunities of the hydrogen economy are not evenly distributed.

The hydrogen economy requires a broad spectrum of job qualifications, some of which are based on different levels of education. The potential for regional structural development must be identified against this backdrop. Regions with a strong industrial core and a network of business and science seem to be at an advantage. But also regions with a strong footing in renewable energy production can use green hydrogen to build another mainstay of the energy sector and thus diversify their economic activity overall.

From a regional structural policy perspective, qualification must change its character. Especially against the background of structural change, employees from other sectors must also be given the opportunity

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to obtain the necessary qualifications to be able to work in the hydrogen economy and related areas. If you want to promote a hydrogen economy in a coal region, previous qualifications of workers in the coal industry will not necessarily match the requirements of the hydrogen economy.

These are our demands:

» Regional hydrogen networks and projects must **involve local workers and trade unions**. At present, too much emphasis is placed on company management, industry associations, business development agencies, scientists and consultants as actors, which means that important issues receive too little attention.

6. Creating acceptance from the start

Neither energy transition nor climate protection lack ambitious goals. In practice, however, they fail because of a number of obstacles. Whether it is the expansion of renewable energies or the expansion of the grid, recent years have shown time and again that the acceptance of society is essential when it comes to implementing necessary projects.

The ramp-up of the hydrogen economy therefore also needs a ramp-up of the hydrogen society. Hydrogen raises safety issues for people that must be addressed early and transparently. In this context, broad-based promotion of acceptance pays off twice over. Society supports the ramp-up of the hydrogen economy and by educating society transparently, young people who want to become professionally involved in the hydrogen economy in the future also come into contact with the subject matter. This not only ensures acceptance, but also tomorrow's jobs.

These are our demands:

» **Technological support programmes** should always include **accompanying social research**. Pilot projects can be used to involve society and avoid acceptance problems during the ramp-up of the hydrogen economy.

» **Low-threshold information offers** on the topic of hydrogen are needed to get the people to support the ramp-up.