



SESSION I

Impacts of the energy transition on employment, quality of work and skill needs - Germany

REJEnerAXion: Energy for a just and green recovery deal: the role of the industrial relations in the energy sector for a resilient Europe

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wmp consult

- Established in 2001 and based in Hamburg, **Germany**
- Independent private **research company and consulting firm**
- 14 researchers and consultants with academic backgrounds in economics and social sciences
- Consultancy work and research on issues related to **industrial relations, work and employment, industrial policy, company restructuring, sustainability/CSR** for social partners, public authorities, and other actors and institutions
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Main characteristics of the country's energy system

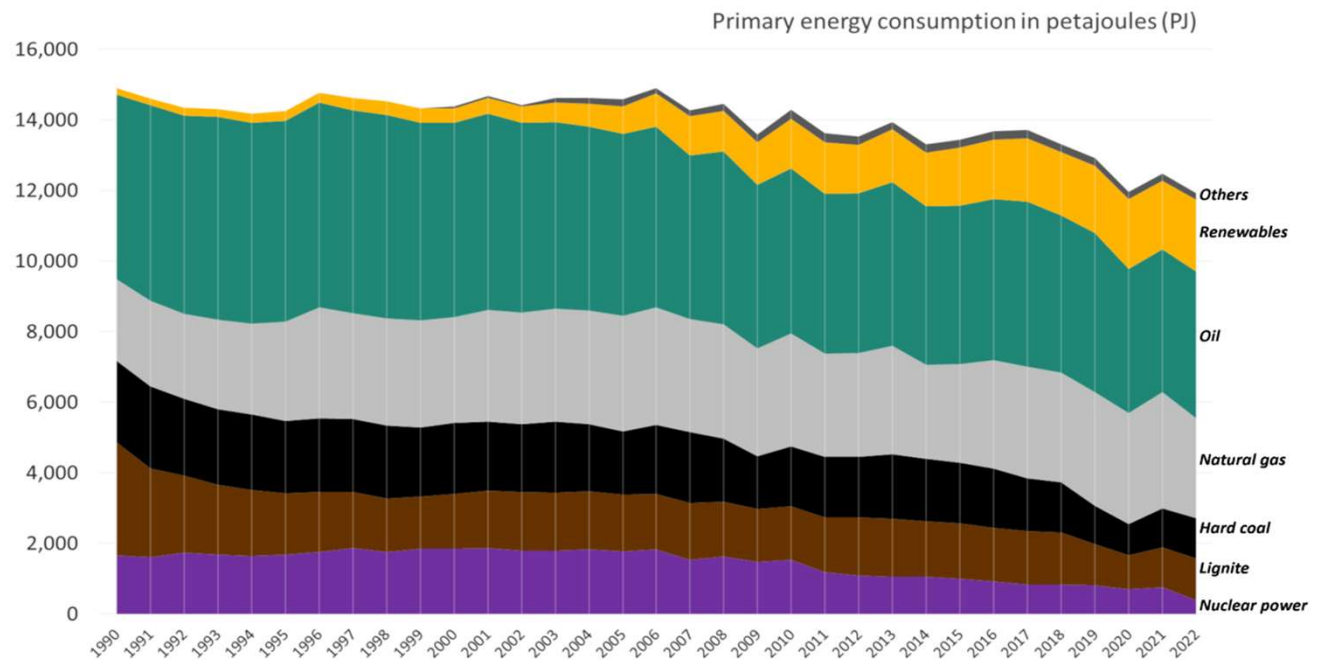


Energy mix and dependence

- **Most important energy source in 2022:** mineral oil (35 %), followed by natural gas (24 %) and renewables (17 %).
- Since 1990, the **energy mix has changed considerably:** hard coal - 61 %, lignite - 70 %, mineral oil - 22 %; gas +37 %, renewable energy +900 %.
- **Primary energy consumption has been decreasing.** Between 1990 and 2022 it fell by 21 %

German energy sources' share in primary energy consumption 1990 - 2022.

Data: AG Energiebilanzen 2022, preliminary.



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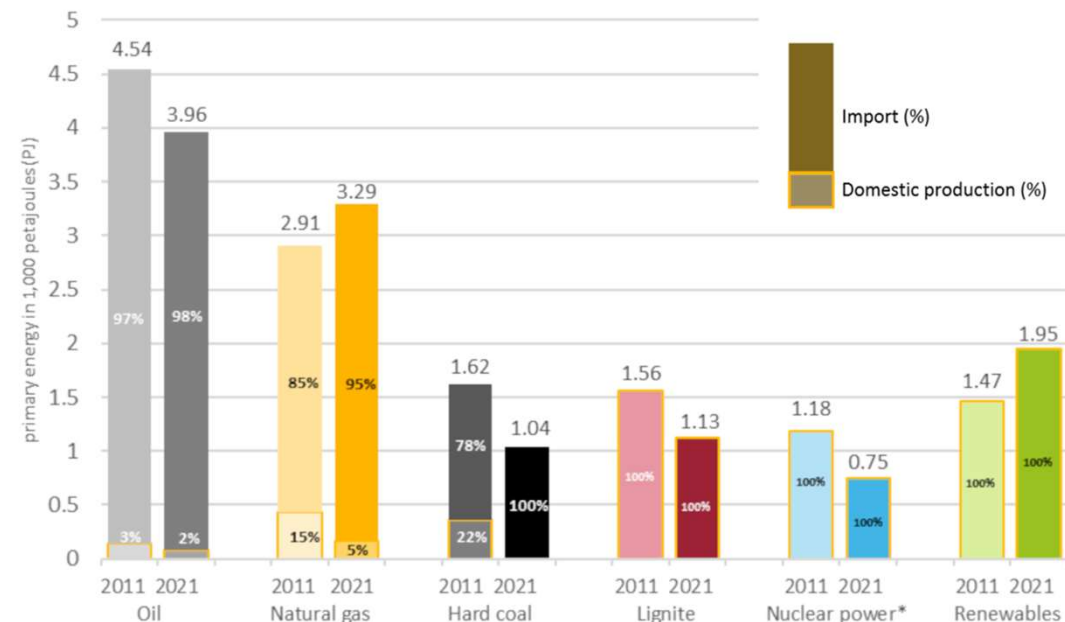
Source: <https://www.cleanenergywire.org/factsheets/germanys-energy-consumption-and-power-mix-charts>

Energy mix and dependence

- The energy **import dependency** was 64 % in 2020 (2011: 62 %; Eurostat)
- Import dependency exists for hard coal (100 %), oil (98 %) and gas (95%); lignite, nuclear power and renewables were completely produced from **domestic sources** in 2021.
- Until the end of 2021, **Russia** was the main supplier of oil and natural gas to Germany

Import dependency by primary energy source 2011 and 2021 for Germany.

Data: BGR 2022.



*While the uranium is imported, BGR considers nuclear energy domestic, as significant additional production steps in Germany/Europe are necessary to turn it into fuel rods.

Source: <https://www.cleanenergywire.org/factsheets/germanys-dependence-imported-fossil-fuels>

Policy framework and the strategy for the energy transition

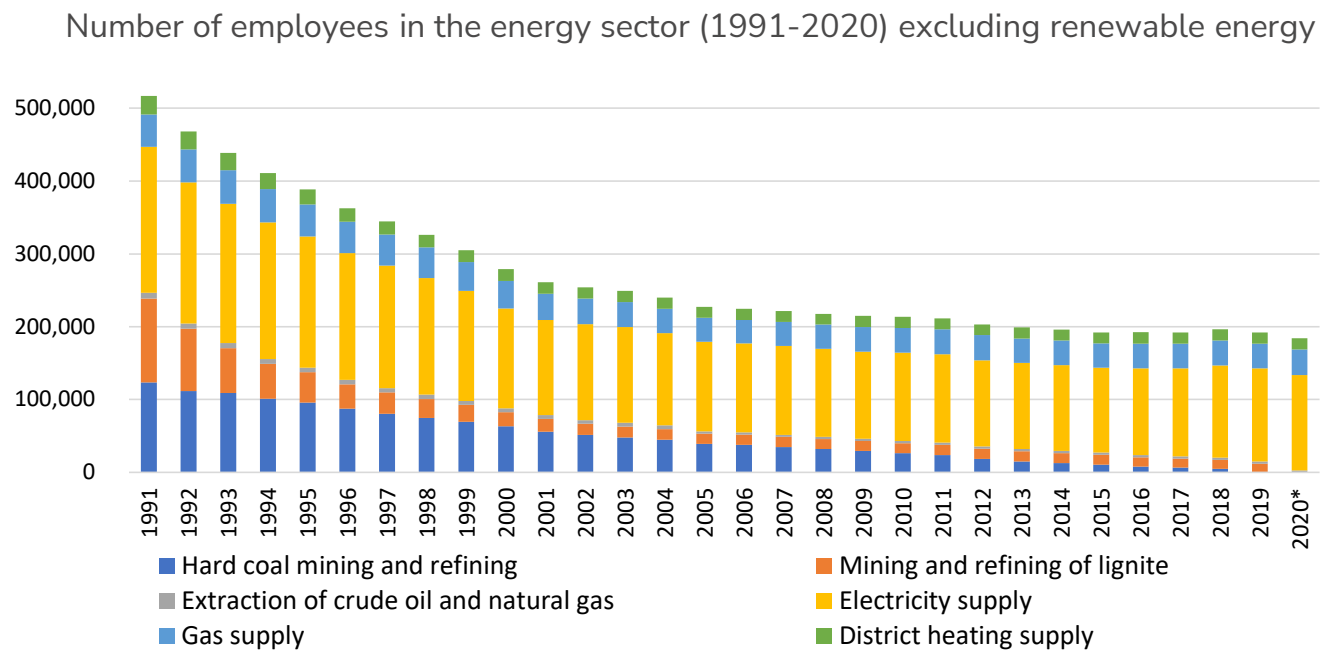
- Central **strategies of the energy concept** “Energiewende” (energy turnaround):
 - reducing primary energy consumption/energy efficiency,
 - greenhouse gas reduction,
 - expanding renewable energy.
- To achieve the current goals, **a fundamental transformation of Germany's energy sector is necessary:**
 - shift from fossil fuels to renewable energy including phase out of lignite mines and lignite-fired plants until 2038 (North Rhine-Westphalia: 2030) and hard coal-fired plants until 2027

Impacts of the energy transition on employment, quality of work and skill needs



Employment, quality of work and skill needs

- **Number of employees** in the energy sector (2019: 192,263) **excluding renewable energy is declining** - especially in the coal sector
- Employment in **renewable energy** in 2021: 344,100; **BUT** figure includes employees for the construction of renewable energy plants and jobs in operation and maintenance as well as employment in the provision of renewable fuels. Between 2000 and 2021, the number of jobs in the renewable energy sector roughly tripled. However, the number of employees was lower in 2021 than in 2011 (collapse of the domestic photovoltaic industry).



Note: *: for the year 2020, no employment data for lignite mining and refining are provided by the Federal Ministry of Economics and Climate Protection.
Source: Bundesministerium für Wirtschaft und Klimaschutz 2022

Employment, quality of work and skill needs

The results of the interviews suggest that the total impact of the energy transition on the workforce is difficult to determine:

- All interview partners agreed that the energy transition will **result in the loss of jobs in the companies in the fossil fuel industry and energy-intensive sectors**, while **new jobs and occupational fields are being created in renewable energy**. However, some interview partners pointed out that because of a too slow transition to renewable energy it can be assumed that German **fossil fuel power plants must continue to be operated for a longer period** than planned.
- It was criticised that the **effects of the energy transition on energy-intensive sectors and companies in the value chain of fossil fuel companies are often not considered** and are not part of the political measures. In addition, the interviewees also noted that there is a lack of adaption measures for gas-fired power plants (which are affected by the sanctions against Russia and the switch to hydrogen).
- There were **differing views among the interviewees as to whether the energy transition will actually lead to job creation**. For example, regarding photovoltaics, it was remarked that currently there is very little domestic manufacturing capacity for solar power systems and thus hardly any jobs in production.

Employment, quality of work and skill needs

With regard to working conditions and the quality of work, interview partners pointed out that the energy transition and the expansion of renewable energy does not per se lead to a deterioration in working conditions:

- Working conditions in companies in the **coal industry and the energy industry** (electricity, gas supply, district heating) are **well above average**:
 - Trade union density is high and workers receive high collectively-agreed wages.
 - Employees in the coal industry enjoy benefits from the **strongest form of codetermination in Germany** (Montanmitbestimmung), which guarantees them parity representation on the company's supervisory board (executives must obtain workers' approval before making decisions involving issues such as changes in wages and working hours, layoffs, and safety standards).
- A high degree of unionisation and a high collective bargaining coverage do not (yet) exist in **the renewable energy** sector. In the many small and medium-sized companies in the renewable energy sector, **co-determination plays less of a role**.

Employment, quality of work and skill needs

The interviewees assumed that only a few completely new professions will be created in the course of the energy transition. Rather the demand for certain professions will change and qualifications in certain professions will be extended to meet new requirements.

- According to the interviewees the system of **vocational education and training provides good preconditions** for transformations (teaching of basic qualifications, open to new technology); social partners are involved in developing new training regulations and modernizing existing ones.
- Frequently the energy transition merely requires an **upgrading of existing qualifications**. For example, some Chambers of Crafts and Trades offer **further training to become solar technology specialists** for craftsmen in the trades of sanitation, heating and air-conditioning, construction, roofing, electricity and metal working.

Employment, quality of work and skill needs

All interview partners agree that there is a widespread shortage of skilled workers in various professions and that this threatens to limit the expansion of renewable energy in Germany.

- Even though regional differences prevail in Germany, the experts interviewed for this study assumed that there is a **shortage of skilled workers in almost all occupational groups related to the energy transition** (particularly jobs in construction and technical professions).
- The expansion of renewable energy requires many professions that are **also in demand in other sectors** and are already **in short supply**. The general lack of trained specialists is intensified by **demographic change**. It was also noted that (vocational) **training in Germany is in general lengthy** (3 years) and therefore cannot solve the shortage of skilled workers in the short term.

The role of industrial relations and social dialogue in these processes of a just transition to clean energy



The role of social dialogue

In the coal industry in particular, involvement of the social partners and consensus-building processes can be seen:

- **“Coal consensus”**: Involving various interest groups (including social partners) in a coal commission a plan for a coal phase-out was reached in 2019.
- For the social partners, it was particularly important that the process of **structural change** in the coal regions is **politically and financially supported, employees are protected, and social dialogue plays a role in shaping the transition**.
- Regarding a **just transition for workers**, the coal consensus includes labour market measures such as funding for jobs, job guarantees, and most important **early retirement compensation for employees in mines and coal-fired plants** (from the age of 58 without pension reductions).
 - Interviewees pointed out that employees in open-pit mining and lignite- and hard coal-fired power plants will be **hardly affected by unemployment**: by 2038 when the mines and coal-fired plants will be closed, many employees will have reached retirement age or will receive early retirement benefits.

The role of social dialogue

- In addition, the “coal consensus” **gives the social partners a co-responsibility** for shaping the energy transition through collective bargaining agreements.
- The interview partners emphasise that, **collective agreements are used as an essential element for socio-ecological transformation**. For example, via these agreements remuneration components of employees are cut or eliminated in exchange for a guarantee of employment.

The role of social dialogue


Social partners share a common interest to promote regions that are negatively affected by structural change. They are also in agreement that the appropriate strategy is to establish new industrial companies and support existing ones in affected regions to generate value added and workplaces.

- Interviewees on the employee and employer side **often held similar views on questions concerning the design of structural change** and the interpretation of issues and challenges (for example, the need for an accompanied energy transition, the effects on employment, the skills shortage, the limiting regulation on state aid, or the operation of the gas networks with hydrogen).
- Trade unions focus on the social aspects of a just transition and on ensuring that new jobs with good working conditions are created where jobs are lost. Employers associations are also committed to the establishment and development of industry. The demands lead to a partial **overlap of interests** and a common ground between the social partners **at the regional level to join efforts to influence and shape structural change**.

Thank you!



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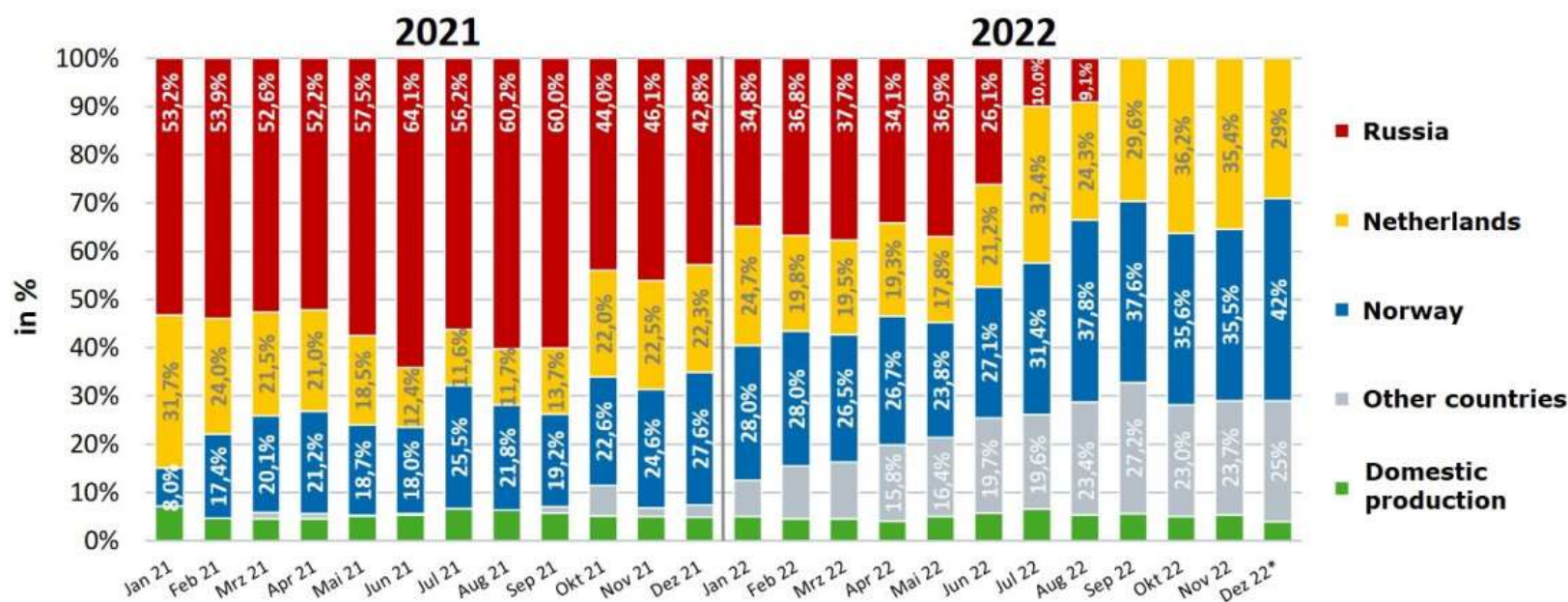
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ANNEX



Energy mix and dependence

Origin of the natural gas consumed in Germany



Sources: ENTSOG, FNB, own calculations

*preliminary, partly estimates

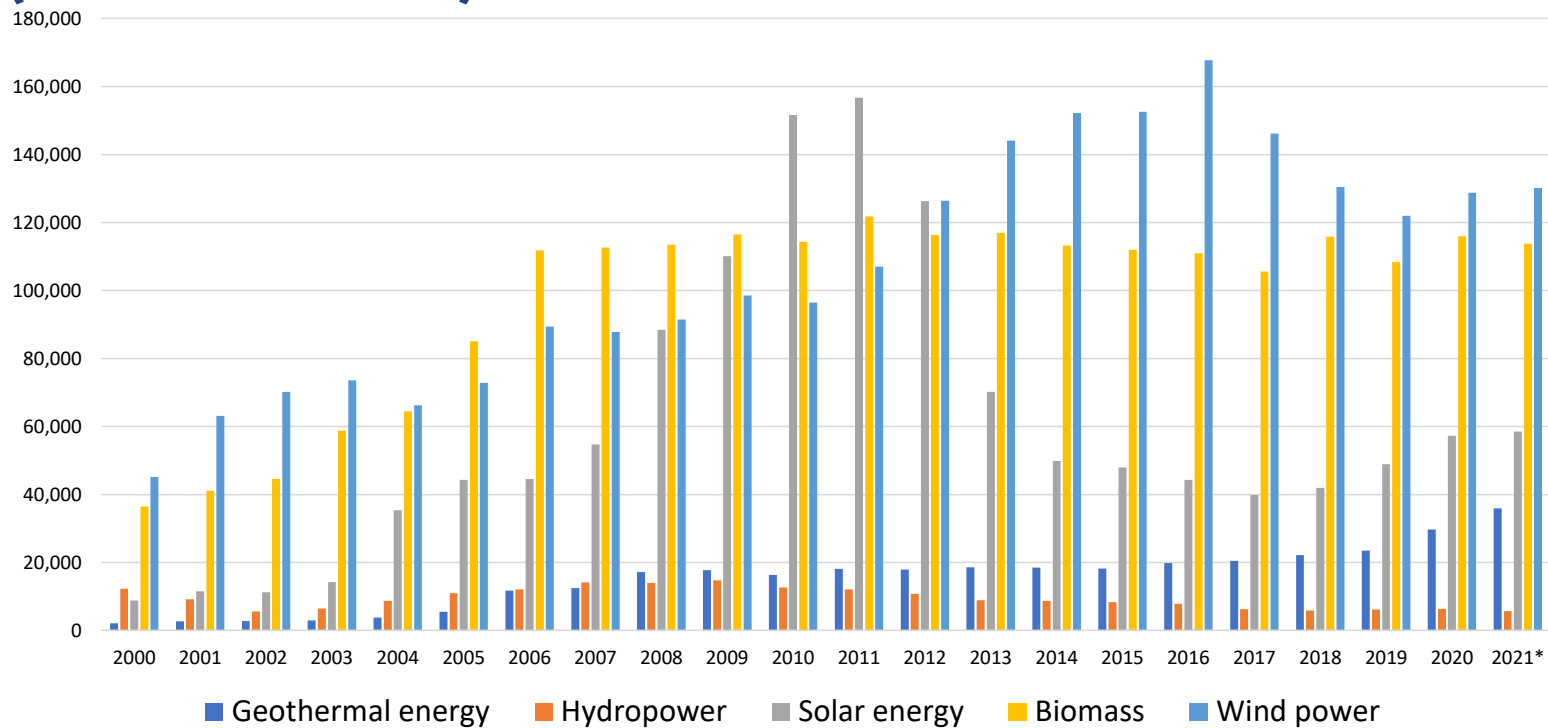
Source: <https://www.cleanenergywire.org/factsheets/germanys-dependence-imported-fossil-fuels>

Policy framework and the strategy for the energy transition

- Central strategies of the energy concept**
“Energiewende” (energy turnaround): reducing primary energy consumption/energy efficiency, greenhouse gas reduction, expanding renewable energy.
- Primary energy consumption** is to be reduced by 30 % by 2030 (50 % by 2050; 1990-2022 it fell by 21 %). Since 2008, energy consumption has fallen by an **average of 1.4 % per year**. In order to achieve the 2030 target, consumption would have to **decline by an average of 1.9 % per year from 2023 onwards**.
- To achieve the current goals, a **fundamental transformation of Germany's energy sector is necessary**: shift from fossil fuels to renewable energy including phase out of lignite mines and lignite-fired plants until 2038 (North Rhine-Westphalia: 2030) and hard coal-fired plants until 2027

Dimension	Targets
Greenhouse gas reduction	<ul style="list-style-type: none"> -65 % in 2030 (vs. 1990), net greenhouse gas neutrality by 2045
Share of renewable energy	<ul style="list-style-type: none"> gross final energy consumption: 30 % in 2030, 45% in 2040, 60 % in 2050 gross electricity consumption: 80 % in 2030 heat consumption: 50 % in 2030 energy consumption in the transport sector: 14 % in 2030
Energy efficiency	<ul style="list-style-type: none"> primary energy consumption: -30 % by 2030 (vs. 2008), -50 % by 2050 final energy productivity: 2.1 % per year (2008 - 2050, vs. 2008) gross electricity consumption: -25 % in 2050 (vs. 2008) primary energy consumption in buildings: -80 % by 2050 (vs. 2008) energy consumption in transport: - 40 % in 2050 (vs. 2005)

Number of employees in renewable energy sector (2000-2021)



Source: Bundesministerium für Wirtschaft und Energie (2022)

The Revierwende project

- The Revierwende project was launched on the initiative of the German Trade Union Confederation DGB (Deutscher Gewerkschaftsbund) to support trade unions in their regional activities in regions affected by the coal phase-out.
- Through the work of the initiative the transformation in German coal regions should be accompanied by participation-oriented processes influencing structural developments. Furthermore, within the framework of the initiative, former coal regions should be made sustainable and future-proof by attracting companies to the regions that maintain or create good work for the next generation of workers.
- The activities of the offices include networking and exchange, the provision of content-related and technical know-how, advice on transition processes, training, and special qualification.