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Green-skilled Workers for the Future

How Germany Can Strategically Respond to Climate Change and Migration

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Germany's economy risks falling behind in key future technologies such as electromobility. In addition, the shortage of skilled workers is hindering the country's transition to a green and sustainable economy. Green-skilled workers from non-European countries could be part of the solution to fill gaps. By promoting and facilitating the immigration of skilled workers from countries facing high climate risks, the German government would also contribute to Germany's international climate commitments.

– For Germany as an industrial location, transitioning to sustainable value chains and climate-neutral economic growth poses a significant challenge, exacerbated by labor and skill shortages.

– Skilled immigration, including from outside Europe, can help address these shortages and fill gaps. By training and recruiting green-skilled workers from countries most vulnerable to climate change, Germany can create and foster synergies between its economic policy and development cooperation.

– The expansion of green technologies is no longer just about protecting the global commons, it is now essential to securing the competitiveness of a modern economy, especially in the face of growing systemic rivalries with China.

INTRODUCTION

A glimpse of the future: In 2045, Germany's green transition has been successfully implemented, and the country is climate neutral. Energy is supplied almost entirely from renewable sources. For the industrial sector, the shift away from fossil fuels involved a competitive realignment: most of the formerly emission-intensive industries have mastered the transition to climate-friendly and resource-efficient production processes and remained in Germany. Economic experts emphasize that managed immigration also played an important role in the successful transition. Some of the measures, in place for almost 20 years now, include programs to attract qualified workers with green skills. Among them are workers from countries that are highly exposed to climate risks and where the livelihoods of many people are under threat. Anticipating needs, investments were made in training skilled workers in those countries, including with German support. This opened new opportunities for them on the labor market in their home countries and in Germany.

Back to the present: With projections of stagnant or minimal growth for 2025, the German economy remains in crisis. Confidence in its innovative and competitive strength appears to be waning. The shortage of skilled workers further endangers growth and the green economic transition, and, according to a recent report by the German Chamber of Commerce and Industry (DIHK), is becoming a risk for Germany as a business location.[1] The fundamental transformation of society and the economy can hardly be achieved with domestic skilled workers alone, especially not in key areas such as the energy sector. However, in the currently polarized debate on migration, there is little room for a fact- and needs-based debate on skilled labor immigration. At the same time, climate change has already left people in some regions of the world with no prospects for the future, as their livelihoods are disappearing, and entire regions are at risk of becoming uninhabitable. This policy brief presents concrete measures that the German government can implement to work toward the future scenario outlined above. The shortage of skilled labor, climate change and migration, particularly from countries facing high climate risks, are challenges that should be tackled together in policy design. This could open untapped potential for meeting green skills needs and be beneficial for all parties. Both Germany and the affected countries would gain urgently needed skilled workers for their green transitions, the countries of origin could benefit from remittances, and skilled workers would gain better prospects for their future.

SETTING THE COURSE FOR COMPETITIVENESS

The green transition and competitiveness are closely linked. The structural shift toward climate-neutral and thus sustainable value chains strengthens the economy, secures and creates jobs and maintains prosperity. The green transition is a decisive factor in ensuring that Germany achieves its ambitious climate protection goals and becomes climate-neutral by 2045.[2] Key factors for success include the expansion of renewable energies, increasing energy efficiency, and a sustainable use of resources, for example by establishing a circular economy.[3]

Changes associated with the green transition have far-reaching implications for the labor market (see box on page 4). Demand is not just limited to the skilled trades or engineering professions. It also requires expertise from the scientific community, know-how from consultants, or specialists and managers for planning and operations.[4] Furthermore, demand for low-skilled workers will grow as green industries expand, offering them opportunities for training and skill development.[5]

1 Deutsche Industrie- und Handelskammer, "Fachkräfteengpässe gefährden Erfolg in wichtigen Schlüsseltechnologien," November 23, 2023, https://www.dihk.de/de/themen-und-positionen/fachkraefte/beschaeftigung/fachkraefteengpaesse-gefaehrden-erfolg-in-wichtigen-schluesseltechnologien-107880 (last accessed October 28, 2025).

2 The Federal Climate Action Act (KSG) foresees a gradual reduction in greenhouse gas emissions compared to 1990 levels: at least 65 percent reduction by 2030 and 88 percent by 2040. Die Bundesregierung, "Klimaschutzgesetz und Klimaschutzprogramm. Ein Plan fürs Klima," July 17, 2024, https://www.bundesregierung.de/breg-de/aktuelles/klimaschutzgesetz-2197410 (accessed February 28, 2025).

3 In its "Climate Protection Program 2023," the German federal government has defined comprehensive measures in six areas of action: energy, buildings, industry, transportation, agriculture and land use, land use change, and forestry. See Die Bundesregierung, "Klimaschutzprogramm 2023: Mit großen Schritten zur Klimaneutralität," October 4, 2023, https://www.bundesregierung.de/breg-de/service/archiv-bundesregierung/klimaschutzprogramm-2023-2226992 (last accessed October 26, 2025).

4 Lydia Malin, Anika Jansen, Vico Kutz, "Energie aus Wind und Sonne – Welche Fachkräfte brauchen wir?," 2022, KOFA-Studie 3/2022, Kompetenzzentrum Fachkräftesicherung (Hrsg.), https://www.kofa.de/media/Publikationen/Studien/Solar-und-Windenergie.pdf (accessed February 28, 2025).

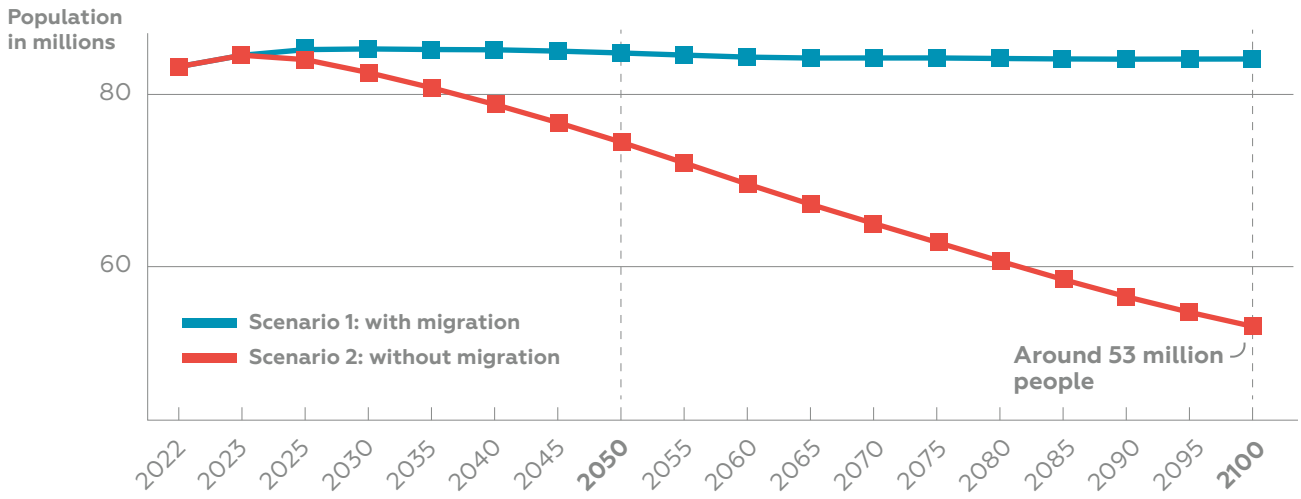
5 Prognos AG, "Defossilisierung und Klimaneutralität. Fachkräftebedarf und Fachkräftegewinnung in der Transformation," 2024, Studie im Auftrag der DIHK – Deutsche Industrie- und Handelskammer, Prognos AG (Hrsg.), https://www.dihk.de/resource/blob/125844/fb44e61c7128505cae35eac05f57d0b6/dihk-prognos-studie-fachkra-fte-fu-r-die-defossilisierung-data.pdf (last accessed October 26, 2025).

Regarding future needs, the Skilled Labour Strategy adopted in 2022 by the previous government outlines measures in several priority areas of action.[6] These include modernizing training regulations in the vocational education and training system, investing in professional development, and improving work-life balance. The facilitation and promotion of skilled immigration is a central component of the strategy to address existing labor shortages. It refers to foreign workers as "indispensable for the competitiveness of the German economy."[7] The strategy further emphasizes the need for Germany to position itself as an attractive country for international talent, citing the global competition for highly qualified workers.

Provisions introduced with the Skilled Immigration Act (FEG), which came into force in 2020 and was revised three years later, set out important steps to this end.[8] The act facilitates the immigration of skilled workers and reduces bureaucracy. However, further steps are needed to make these changes more useful for the green transition.

The recommendations for action presented in this policy brief show how the German government can facilitate labor migration from countries that are exposed to significant climate risks. The following section explains why this is also in Germany's own interests beyond the benefit of attracting skilled workers.

Population projection for Germany with and without migration



Without migration, the population of Germany is projected to decrease from around 83 million at present to around 53 million by the end of the century (scenario 2, limited to natural population development). With migration, the projection envisages a stable population development (scenario 1, including assumptions on the development of net migration). The effects of demographic change are one of the main causes of the skilled worker shortage. Labor migration is therefore an important factor in meeting the demand for skilled workers for the green transition. Other measures include, for example, up- and reskilling or improving the compatibility of work and family life, for example through more flexible working arrangements or investments in childcare. Programs that ease the burden on older workers can also help to create more attractive working conditions.

Source: Eurostat EUROPOP2023

6 Die Bundesregierung, "Fachkräftestrategie der Bundesregierung," 2022, Bundesministerium für Arbeit und Soziales (Hrsg.), https://www.bmas.de/DE/Service/Publikationen/Broschueren/fachkraeftestrategie-der-bundesregierung.html (accessed February 28, 2025).

7 Ibid., p.25

8 Die Bundesregierung, "Das Fachkräfteeinwanderungsgesetz," June 3, 2024, https://www.make-it-in-germany.com/de/visum-aufenthalt/fachkraefteeinwanderungsgesetz (accessed March 16, 2025).

THE GREEN TRANSITION AND ITS LABOR MARKET EFFECTS

The green transition requires skills in many professions and diverse areas of expertise. Green skills can range from technical skills, such as installing solar panels, to transferable skill sets, such as those in sustainability management. Determining labor demand for green jobs can therefore vary, depending on the definition and assumptions underlying the calculation. Narrower definitions focus on needs in certain occupational groups, such as technicians and engineers for which there is a shortage. Or they focus on specific sectors (for example, professions in the field of renewable energies). While this may simplify data collection, it does not do justice to the range of occupations and qualifications required for implementing the green transition as a whole and in various sectors.

A study published in 2022 by the Competence Center for Securing a Skilled Workforce (KOFA) on the shortage of skilled workers in the solar and wind energy sectors illustrates the diversity of tasks involved in the expansion of renewable energies.[9] A total of 190 relevant professions were identified, ranging from conceptualization and the approval process in construction planning, manufacturing, and transport to installation, commissioning, and maintenance. In 2021/2022, the shortage of skilled workers for solar and wind energy averaged around 216,000 people. The study recommends the recruitment of foreign skilled workers, trainees and students. The current KOFA annual review on cross-sector shortages of skilled workers identifies a lack of approximately 18,000 skilled workers in the field of building electrical engineering ("Bauelektrik" in German) and describes this as a "bottleneck" for solar and wind power plant construction.[10]

Economic experts Jürgen Blazejczak and Dietmar Engler[11] estimate the cross-sectoral labor demand for Germany's path to climate neutrality at 767,200 people.[12] In line with the German government's definitions, they divide demand into the following groups of people with different qualifications: 58 percent skilled workers, 19 percent assistants with unskilled and semi-skilled tasks, 13 percent specialists with complex tasks and 10 percent experts with highly complex tasks. Around 40 percent of the skilled workers required fall into occupational groups in which the Federal Employment Agency (BA) identified a shortage of skilled workers, specialists and experts in 2019.

9 Lydia Malin, Anika Jansen, Vico Kutz, "Energie aus Wind und Sonne – Welche Fachkräfte brauchen wir?"

10 Jurek Tiedemann und Paula Risius, "Jahresrückblick 2024 – Engpässe für Energiewende trotz sinkender Fachkräftelücke," 2025, KOFA Kompakt 02/2025, Kompetenzzentrum Fachkräftesicherung (Hrsg.), https://www.kofa.de/media/Publikationen/KOFA_Kompakt/Jahresrueckblick_2024.pdf (accessed February 28, 2025).

11 Jürgen Blazejczak und Dietmar Edler, "Arbeitskräftebedarf nach Sektoren, Qualifikationen und Berufen zur Umsetzung der Investitionen für ein klimaneutrales Deutschland," 2021, Kurzstudie im Auftrag der Bundestagsfraktion Bündnis 90/Die Grünen, https://forschungsnetzwerk.ams.at/elibrary/publikation/sonstiges/2021/arbeitskraeftebedarf-nach-sektoren--qualifikationen-und-berufen-zur-umsetzung-der-investitionen-fuer-ein-klimaneutrales-deutschland.html (accessed February 28, 2025).

12 The authors of the study based their calculations on Germany's initial goal of achieving climate neutrality by 2050. Shortly after the study was published, the Federal Climate Action Act (KSG) was revised, setting the target to 2045.

GREEN TECHNOLOGIES IN GERMANY'S STRATEGIC INTEREST

The expansion of renewable energies must be evaluated in terms of its broader implications, beyond climate protection alone. China has long dominated the global market in many future technologies, including those key for the green transition. Russia's war of aggression against Ukraine has clearly demonstrated Germany's dependence on energy imports and underlined the importance of a more independent and crisis-proof energy supply. By expanding renewable energies, becoming more energy-independent can be achieved more quickly and cost-effectively. Furthermore, certain areas, such as the hydrogen economy, require international partners and strong trade relationships.

Successful climate protection measures are an important part of Germany's soft-power toolbox. At a time when the US President Donald Trump's administration is attempting to reverse the course of industrial policy and undermine the 2022 Inflation Reduction Act (IRA), which provides support for renewable energy projects and is popular among entrepreneurs, Germany can demonstrate leadership. It can prove to be a reliable partner by keeping its climate policy commitments and consistently implementing its targets. Soft power can also have an impact in traditional security areas. For example, Germany's efforts in global climate protection and the establishment of partnership-based development cooperation were among the factors that raised enough votes in the UN General Assembly for the country to earn a non-permanent seat on the Security Council in 2019/2020. As Germany is running for the Security Council again in 2027/2028, it should take concrete steps to demonstrate its commitment to integrated security.

INDIAN SKILLED WORKERS FOR THE GERMAN SOLAR INDUSTRY

India is a prime example of the potential synergies in combining skilled worker recruitment for the green transition with climate change policies. The country ranks sixth in the Global Climate Risk Index, which measures the impact of extreme weather events such as floods, storms, heatwaves, and droughts.[13] Livelihoods in the world's most populous country are also threatened by gradual changes such as rising temperatures.

India is an attractive partner for programs aimed at recruiting skilled labor with fair and ethical standards.[14] This is due to the nation's demographic profile which features a young population with an average age of just under 29 years,[15] coupled with a high youth unemployment rate of 16 percent.[16] Furthermore, Germany is popular with young and well-qualified Indians. According to figures from the German Academic Exchange Service (DAAD) India, Indians were the largest group of international students in Germany in the 2023/2024 winter semester, with about 50,000 students, 60 percent of whom were enrolled in engineering programs.[17] The Migration and Mobility Partnership (MMPA) signed in 2023[18] underscores the strong and stable bilateral relationship between India and Germany, even beyond the area of migration policy. In 2024, the German government adopted a Skilled Labour Strategy: India to help bring skilled workers from India to Germany.[19] To further strengthen cooperation between India and Germany on the matter, the German Embassy in New Delhi has recently established the position of a Secretary for Skilled Labour Migration.

A project to recruit electronics engineers for the German solar industry, part of the alliance 10,000 Days, demonstrates how the recruitment of skilled workers for the green transition from India can be successful.[20] 10,000 Days was initiated by the Federal Ministry of

13 Lina Adil, David Eckstein, Vera Künzel und Laura Schäfer, "Climate Risk Index 2025 – Who suffers most from extreme weather events?," Germanwatch, 2025, http://www.germanwatch.org/en/93013 (accessed Februrary 28, 2025).

14 Germany is committed to ethically responsible recruitment practices, which means that the demands and conditions in the country of origin are considered. One reason behind this approach is to avoid "brain drain" for example.

15 Statista, "Indien - Durchschnittsalter bis 2050," September 3, 2024, https://de.statista.com/statistik/daten/studie/200678/umfrage/durchschnittsalterder-bevoelkerung-in-indien/ (accessed February 20, 2025).

16 Statista, "Indien: Jugendarbeitslosenquote nach Geschlecht von 2012 bis 2023 und Prognosen bis 2026," December 13, 2024, https://de.statista.com/statistik/daten/studie/1409519/umfrage/jugendarbeitslosenquote-in-indien/ (accessed February 20, 2025).

17 DAAD India, "Indian student numbers touch a record high in Germany: Indians form the largest group of foreign students in Germany – For the second year!," Press release, September 6, 2024, https://www.daad.in/files/2024/09/Indian-student-numbers-in-Germany.pdf (accessed March 19, 2025).

18 Bundesministerium des Innern und für Heimat, "Bekanntmachung des deutsch-indischen Abkommens über eine umfassende Migrations- und Mobilitätspartnerschaft," BGBl. 2023 II Nr. 128, May 5, 2023, https://www.recht.bund.de/bgbl/2/2023/128/VO.html (accessed March 16, 2025).

19 Die Bundesregierung, "Fachkräftestrategie Indien: Fachkräfteanwerbung breiter aufstellen," 16.10.2025, https://www.bundesregierung.de/breg-de/service/archiv-bundesregierung/fachkraeftestrategie-indien-2314888 (last accessed October 26, 2025).

20 10.000 Tage. "Chancenkarte und Anerkennungspartnerschaft für Solarfachkräfte," https://10000tage.org/projects/chancenkarte-und-anerkennungspartnerschaft-in-der-solarwirtschaft/ (accessed March 19, 2025).

Education and Research (BMBF) and the non-profit organization ProjectTogether. The alliance brings together government, civil society, scientific, and economic actors to work on new and innovative solutions to address the shortage of skilled workers in the green transition.[21]

In the project for skilled workers in the solar industry, the recruitment agency Green Professionals bridges the gap between the qualifications of Indian specialists and the needs of German employers.[22] Green Professionals supports suitable applicants with the recognition of their skills and professional experience, dealing with visa issues, learning the language and integrating into the German labor market. The electronics engineers are employed part-time in Germany and in a course financed by education vouchers until their qualification is fully recognized by the IHK FOSA (Foreign Skills Approval) – the central certification authority of Germany's regional Chambers of Industry and Commerce (IHKs).[23]

The Opportunity Card, introduced with the new Skilled Immigration Act, makes it possible to enter Germany and look for work even without a permanent employment contract.[24] This allows skilled workers from non-EU countries to stay for one year, provided they meet the requirements of the point system. Points are awarded for criteria such as the recognition of qualifications in Germany, language skills, professional experience, age, links to Germany, and the potential accompanying partners or spouses. While looking for employment, Opportunity Card holders are allowed to participate in job trials for up to two weeks per company and work part time (secondary employment). In the best case, a job trial leads to a recognition partnership with the aim of achieving full recognition of their foreign qualifications.[25] As of October 2024, 780 Opportunity Card visas had been issued in India.[26]

These examples demonstrate initial approaches to improving the recruitment of skilled workers and should be evaluated comprehensively to draw lessons for future initiatives. In the context of particularly climate-vulnerable countries, such as those in the V20 group, projects similar to the one described above, designed to recruit electronics engineers for the solar industry, could facilitate more targeted labor migration.

BRINGING LABOR AND CLIMATE MIGRATION POLICY TOGETHER

In addition to recruiting skilled workers from abroad, Germany needs approaches that combine labor and climate migration in policy design and action. That would make it possible to respond not just reactively to humanitarian emergencies, but to proactively promote positive economic developments. The Expert Council on Integration and Migration, for example, expanded the proposal of the German Advisory Council on Global Change (WBGU) for a climate passport to include a climate work visa.[27] The proposal for a climate work visa is based on the Western Balkans Regulation adopted in 2015, which allows people from Western Balkan countries to immigrate to Germany if they can present an employment contract with a company based in Germany. The climate work visa would also be linked to taking up employment in Germany and could facilitate immigration for people from climate-vulnerable countries. This instrument would create a new regular migration pathway. The number of total entries could be limited with country-specific quotas. Through targeted promotion of education and training – at home

21 10.000 Tage, "Unser Ansatz," 2025, https://10000tage.org/, (accessed March 19, 2025).

22 Interview with Moritz von Recklinghausen, Founder & Managing Director of Green Professionals, on March 12, 2025. The interviewee emphasized that the education voucher provides a funding opportunity that should be maintained without cuts. The financial burden on the state is comparatively low. New instruments, such as the Opportunity Card and recognition partnerships, currently play a minor role in the project, but this could change. In the course of the project, it has become apparent that German employers have little interest in electronics specialists without professional recognition. In addition, learning German without support is an obstacle. Nevertheless, the new Skilled Immigration Act has made the process easier, as the visa for the recognition of foreign professional qualifications allows part-time employment of 20 hours without the approval of the Federal Employment Agency (BA) (previously 10). This enables skilled workers to earn a living while they go through the professional recognition process.

23 The IHK FOSA is the responsible authority for recognizing foreign educational qualifications that are comparable to an IHK profession.

24 Bundesministerium des Innern und für Heimat, "Chancenkarte für gezielte Fachkräfteeinwanderung kommt," Press release, May 31, 2024, https://www.bmi.bund.de/SharedDocs/kurzmeldungen/DE/2024/05/chancenkarte.html (accessed March 19, 2025).

25 Bundesagentur für Arbeit, "Anerkennungspartnerschaft," 2025, https://www.arbeitsagentur.de/unternehmen/fachkraefte-ausland/anerkennungspartnerschaft (accessed March 19, 2025).

26 dpa, "Chancenkarte: 2.500 Arbeitswillige haben Visa erhalten," October 24, 2024, https://www.sueddeutsche.de/politik/fachkraefteeinwanderung-chancenkarte-2-500-arbeitswillige-haben-visa-erhalten-dpa.urn-newsml-dpa-com-20090101-241024-930-26911324.10.2024 (accessed March 19, 2025).

27 Sachverständigenrat für Integration und Migration, "Klimawandel und Migration: Was wir über den Zusammenhang wissen und welche Handlungsoptionen es gibt," 2023, https://www.svr-migration.de/wp-content/uploads/2023/06/SVR-Jahresgutachten_2023_barrierefrei.pdf, (last accessed October 20,2025). An English summary is available at https://www.svr-migration.de/wp-content/uploads/2023/10/SVR_Annual_Report_Summary_2023.pdf.

and abroad – and by improving conditions for labor migration from "climate hotspots," Germany could address both the shortage of skilled workers and climate-related migration.[28]

Existing instruments the government could use to attract green skilled workers from climate-vulnerable countries include migration partnerships such as those with India and Kenya. These agreements include measures to promote the migration and mobility of skilled workers, but also provisions regarding the return of rejected asylum seekers. Measures to facilitate the immigration of skilled workers include, for example, the promotion of language acquisition or improved pre-integration, the recognition of qualifications, or the expansion of visa capacities. In its development cooperation, Germany is working with 60 partner countries to further develop and expand vocational education and training. One fifth of vocational and higher education projects focus on developing skills needed for the green transition.[29]

INSTRUMENTS AND OPTIONS

The federal government should seize the opportunity to strengthen and create synergies between domestic, foreign and development policy measures. To this end, we recommend the following actions:

Consideration of "green professions" and people from countries particularly at risk from climate change in the Opportunity Card

One legislative option would be to include people who are particularly affected by the adverse effects of climate change in the Opportunity Card – for example, by taking into consideration the country of origin. Promoting vocational education and training in countries particularly at risk from climate change could help expand the pool of skilled workers available for implementing the green transition in Germany. These individuals could then take advantage of the Opportunity Card. Closely linked with this measure would be migration and training partnerships, but also stronger standardization of green skills and the use of partial qualifications.

FOREIGN SKILLED WORKERS: ALREADY INDISPENSABLE TODAY

According to figures from the Federal Employment Agency, 16.4 percent of employees subject to social security contributions in Germany in September 2025 were foreign nationals – a total of 5.7 million people.[30] 55.7 percent came from non-EU countries. This shows that foreign workers are indispensable contributors to value creation in the German economy and have become integral to many fields and sectors.

In engineering and IT professions, which are central to the green transition, the immigration of foreign workers has contributed significantly to reducing the shortage of skilled workers. Between the end of 2012 and September 2023, the number of engineers from foreign countries increased by 146.6 percent, rising from about 46,500 to nearly 115,000. Their share of all engineers working in Germany rose from 6 percent to 11 percent during this time.[31]

According to experts at the German Economic Institute (IW), the shortage of engineers and IT specialists causes an annual loss in value added of between EUR 9 billion and EUR 13 billion. The greatest shortage of skilled workers occurs in the fields of energy and electrical engineering.[32]

Tax incentives and investment guarantees for the training and further education of green skilled workers

Recruiting skilled workers is a cost factor for companies, in particular regarding their identification, qualification, or support during visa processes and when entering the country. If companies were granted greater tax deductions for costs related to recruiting personnel from countries particularly affected by

28 Ibid.

29 Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, "Fachkräfte für die weltweite Energiewende," 2023, https://www.bmz.de/resource/blob/195358/fachkraefte-fuer-die-weltweite-energiewende.pdf (accessed February 11, 2025).

30 Bundesagentur für Arbeit, "Migrationsmonitor (Monatszahlen). Deutschland," September 2025, https://statistik.arbeitsagentur.de/Statistikdaten/Detail/Aktuell/migrationsmonitor/migrationsmonitor/migrationsmonitor-d-0-xlsx.xlsx?__blob=publicationFile&v=1 (accessed October 26, 2025).

31 Alexandra Ilina, "Ingenieurmangel kostet bis zu 13 Mrd. € an Wertschöpfung," VDI nachrichten - Das Nachrichtenportal für Ingenieure, August 14, 2024, https://www.vdi-nachrichten.com/karriere/arbeitsmarkt/vdi-auslaendische-ingenieure-staerken-den-deutschen-arbeitsmarkt/ (accessed February 14, 2025).

32 Ibid.

climate change, there could be incentives for such hiring practices. Countries that are exposed to high climate risks are also often affected by conflict and instability.[33] Instruments for promoting foreign trade and investment (e.g., investment guarantees) could be used to better finance and secure investments by German companies which are active in the green sector and invest in training and education infrastructure in these countries.

Migration agreements with countries particularly affected by climate change

Bilateral migration agreements that place a particular focus on green skilled workers could be a next step to strengthen partnerships and, at the same time, contribute to development cooperation goals. To complement domestic policy and legislative measures, migration agreements with countries particularly affected by climate change could be a useful instrument, especially for facilitating labor migration to the green sector in Germany. Such agreements could, for example, speed up visa processes and improve cooperation on education and training through mutual recognition of qualifications (green skills). With Kenya and India, Germany already has two migration agreements with countries that are particularly affected by climate impacts.

Training partnerships for green skills

Climate foreign policy and development policy measures could be used to promote and advance education and training in green skills in countries most vulnerable to the adverse effects of climate change. Implemented in the form of training partnerships, such measures would create mutual benefits by training skilled workers who will be in high demand in the medium- to long-term, especially in sectors critical to decarbonization. Once qualified in partner countries, workers have the choice of working either in their home countries or in Germany.

In its communication on The Union of Skills in March, the EU Commission laid out its plan to promote green skills.[34] The Commission wants to promote public-private partnerships in this area that combine training and recruitment of workers, for example. In addition, training partnerships ("talent partnerships") were announced as part of the EU Pact on Migration and Asylum. Germany could advocate for green professions to become part of these partnerships, including in countries particularly at risk from climate change.[35]

Migration agreements with countries particularly affected by climate change are useful

It would make sense for the German government to negotiate and coordinate training partnerships alongside measures that support decarbonization processes in partner countries. One example is the Just Energy Transition Partnerships (JET-P), an instrument for investing in green transitions in Global South countries that are heavily reliant on fossil fuels. In existing JET-Ps, issues concerning labor have hardly been considered. However, a "just transition" should also include the reskilling or further skilling of workers.[36]

Removing barriers to labor migration for skilled refugees

Germany and the EU should also consider removing barriers to labor migration for skilled refugees. Due to gradual environmental change and the erosion of livelihoods – to the point where regions become uninhabitable – an increasing number of people will

33 Laura Jaramillo, Aliona Cebotari, Yoro Diallo et al., "Climate Challenges in Fragile and Conflict-Affected States," IMF Staff Climate Note 2023/001. Washington, DC.: International Monetary Fund, https://www.imf.org/en/Publications/staff-climate-notes/Issues/2023/08/24/Climate-Challenges-in-Fragile-and-Conflict-Affected-States-537797 (accessed February 19, 2025).

34 EU Commission, "Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions – The Union of Skills," March 3, 2025, eur-lex.europa.eu/legal-content/en/TXT/PDF/?uri=CELEX%3A52025DC0090 (accessed March 19, 2025)

35 Initial surveys among EU member states and partner countries did not identify widespread interest in climate-relevant jobs. See Denkfabrik für transnationale Skills Partnerships, "Transnationale Skills Partnerships – Ein Instrument zur Fachkräftesicherung im Kontext der grünen Transformation?," Themendossier VI, Bertelsmann Stiftung, December 17, 2023, Denkfabrik_TSP_Themendossier_Green_Skills_2023.pdf (accessed March 19, 2025).

36 International Labour Organization, "Guidelines for a just transition towards environmentally sustainable economies and societies for all," February 2, 2016, https://www.ilo.org/publications/guidelines-just-transition-towards-environmentally-sustainable-economies (accessed March 19, 2025).

be forced to migrate, including from places where they previously sought refuge. It is estimated that three-quarters[37] of the world's refugees already live in countries particularly affected by the impacts of climate change. Barriers for skilled refugees could be removed, for example, by allowing greater flexibility in the recognition of professional or educational qualifications. For refugees, it is often more difficult to provide evidence of their qualifications. Improving the capacity of the Federal Foreign Office to process visa applications from skilled refugees would also be beneficial. Pooling expertise in processing their applications, some of which are more complex, could make processing faster and more reliable.

Internationally standardized green skills and use of partial qualifications

Greater use and recognition of partial qualifications would expand recruitment options for jobs in the green sector. This would open more employment opportunities for less-qualified individuals in Germany and from countries particularly affected by climate change, for example in the installation of photovoltaic systems. This would also enable them to work toward full professional qualifications.[38] In addition, it would be a matter of good practice to standardize (partial) qualifications for the implementation of the green transition internationally, as is being done, for example, through the Climate Mobility Accreditation. This framework, developed by greentech.training in collaboration with international partners such as the International Organization for Migration (IOM), aims to address skill gaps in the green transition and facilitate labor mobility.[39] Germany should advocate for standardized accreditation in multilateral forums. Digital tools could simplify the verification of authenticity and ensure portability. The EU Commission also sees standardizing the recognition of qualifications as an important next step. Germany should pilot better practices in green skills training and hiring. This would also support the mobility of green skilled workers, including those from countries particularly affected by climate change.

37 UNHCR, "UNHCR report reveals climate change is a growing threat to people already fleeing war," Press release, November 12, 2024, https://www.unhcr.org/news/press-releases/unhcr-report-reveals-climate-change-growing-threat-people-already-fleeing-war (accessed March 19, 2025).

38 International Labour Organization, "Guidelines for a just transition towards environmentally sustainable economies and societies for all," 02.02.2016, https://www.ilo.org/publications/guidelines-just-transition-towards-environmentally-sustainable-economies (accessed March 19, 2025).

39 Greentech Training, "FAQ - Greentech Training," Climate Mobility Accreditation - greentech.training (last accessed October 30, 2025).

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