Towards a just transition for workers in the built environment in Europe

Building materials and on-site construction sectors

Annex I: Country fiche – Czechia

ECORYS

Answering tomorrow's challenges today

Country Fiche
Czechia

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1. At a glance[1]

Strengths and Opportunities

• Opportunities in construction sector:
  ○ With 413,056 persons employed in 2023, the Czech construction sector represents a substantial share of national employment (7-8% of total jobs, given that total employment was 5.48 million in 2023). Its net turnover of 51,867.64 million euro in 2023 underscores its economic weight.
  ○ Employment shifts towards managers, clerical and professional jobs were observed between 2010 and 2020, while some craft and technical occupations decreased. The sector's apparent labour productivity increased from EUR 20,801 in 2011 to EUR 26,689 in 2018 (+23.3). Upskilling and reskilling initiatives (e.g. CraftEdu e-learning2, DoubleDecker project3) can improve employability and career prospects for workers.
• Opportunities in building materials sectors:
  ○ Manufacturing sub-sector of construction (e.g. off-site element production) has experienced growth and relatively strong profitability, suggesting potential for more industrialised, productive methods (prefab elements). Meanwhile on-site construction remains craft-intensive and fragmented, and combined with weak training engagement this may impede large scale adoption of prefab or modular techniques4. Skills in this sector shift to machine operators, technicians and quality engineers, and the skills needs include industrial production, quality control, product innovation and logistics.

Weaknesses and Threats
• Challenges in construction sector: ○ Although productivity improved between 2011 and 2018, it still remains below the EU average.

[1] The core construction sector is assessed in detail in all ten countries, while the depth of analysis varies in the building material industries, with the one or two biggest industries (measured by volume of material output produced in tons) analysed per country. For Italy, the Netherlands, Czechia, Denmark and Ireland, the analysis focuses on either steel or cement, depending on which material has the highest output. Germany, France, the United Kingdom, Poland, and Spain are subject to a deeper analysis, including steel or cement and an additional industry (either timber or glass) selected based on its importance in material output.

[2] CraftEdu H2020 project results website: https://cordis.europa.eu/article/id/430567-e-learning-platform-ensures-green-construction-skills-in-czechia-and-slovakia

[3] Build Up Skills DoubleDecker project final report, 2024. Available at: https://database.craftedu.eu/cs/vystupy

[4] European Construction Sector Observatory Country Fact sheet Czech Republic 2021. Available at: https://single-market-economy.ec.europa.eu/sectors/construction/observatory/country-fact-sheets/czech-republic_en

- The industry is composed of many micro and small firms, which reduces training capacity and makes it difficult to implement large-scale renovation and retrofit programmes. Smaller firms often lack the resources to organise in-house upskilling.
- A high share of self-employed and subcontracted workers results in limited social protection, weaker access to on-the-job training, and poor in-house training capacity. Late payments in Czech construction rose from 24% of B2B invoices in 2019 to 39% in 2020, causing cash-flow risks and greater vulnerability for small firms and subcontractors. Combined with a high presence of migrant and non-standard workers, often employed by micro-firms that circumvent labour regulations, this creates a precarious and unstable working environment.
- The sector faces severe labour shortages, with vacancy rates rising sharply. At the same time, adult participation in training has declined significantly across both the narrow and broad construction sectors, limiting the availability of qualified workers. Reports indicate that firms are increasingly hiring untrained workers to reduce costs, while training budgets (particularly in VET) are insufficient.

Key organisations

- Construction Trade Union (Odborový svaz Stavba – OS Stavba): represents building and related trades (construction workers, site operatives, some specialist crafts). This is the main union for construction-sector workers, representing employees in building trades, site operations and related fields. OS Stavba negotiates collective agreements at multiple levels, provides a regional service structure via managers and safety inspectors, and maintains a support fund for unemployed or sick members. By participating in social dialogue and labour negotiations, they are well placed to push for labour protections, retraining and fair conditions during the green transition.
- Czech-Moravian Confederation of Trade Unions (Českomoravská konfederace odborových svazů - ČMKOS): As the largest trade-union confederation in Czechia, ČMKOS defends workers' rights at a national scale, influencing employment policy, labour law and social dialogue. In the context of decarbonisation, ČMKOS produces research on the "green economy and labour market" and actively calls for social-justice safeguards such as retraining, regional protections and collective-agreement clauses tied to climate transition.
- Construction Employers' Association (Svaz podnikatelů ve stavebnictví ČR - SPS): The Czech Construction Employers' Association represents a broad range of construction firms, including many small- and medium-sized enterprises. As an employer association, SPS is involved in vocational education, training initiatives and public consultations, giving it a key role in coordinating upskilling and transition plans. Because employers will bear much of the costs and operational change of green construction, SPS's support is crucial for implementing worker-centred training and procurement standards.
- Ministry of the Environment / Managing Authority of OP Spravedlivá Transformace (Just Transition): The Czech Ministry of the Environment acts as the managing authority for the Just Transition Operational Programme (OP Spravedlivá Transformace), which is funded by the EU Just Transition Fund.

Key initiatives and partnerships

- Tripartite Dialogue via social dialogue institutions: The Czech social-dialogue system (tripartite) involves unions (e.g., ČMKOS), employers (e.g., Confederation of Industry, SPS), and the government. While this is more general than just construction, it provides a channel for negotiating structural change, social protections, and transition-oriented policies.

Hotspots of a Transition in the Construction Sector

Czechia

Legend

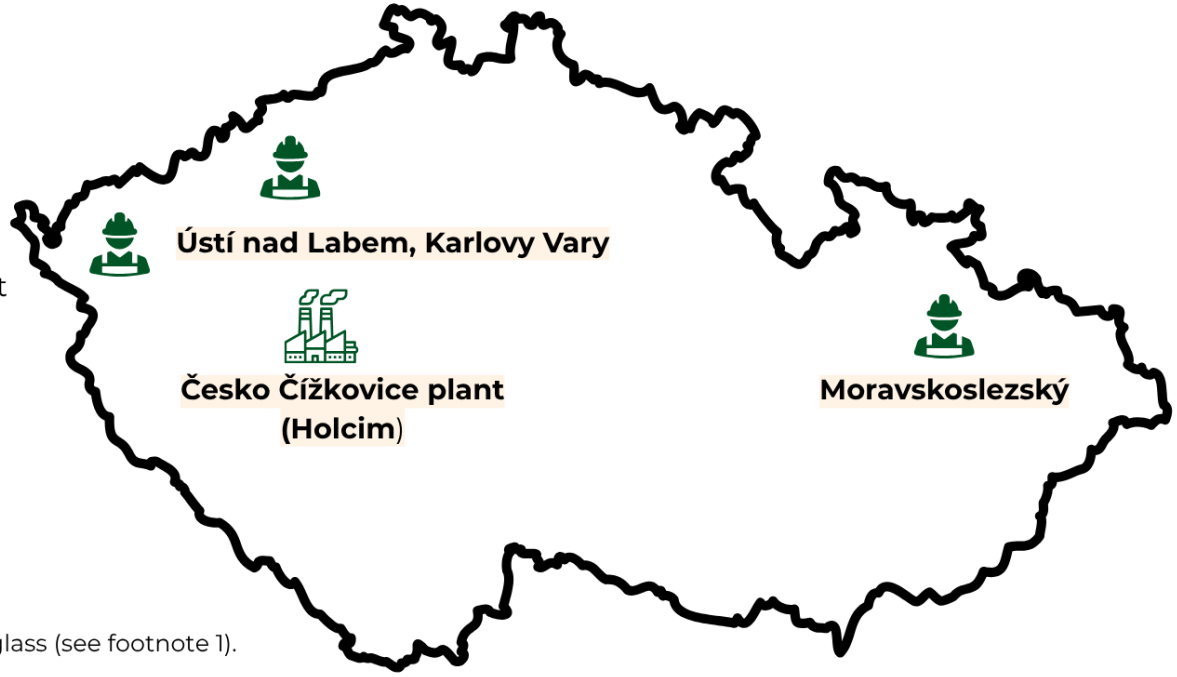
On-site construction:

Expected job creation through the Operational Programme Just Transition

Building materials:

Cement

Modernisation of production site and reskilling of workers



Not covered in the analysis: steel, timber and glass (see footnote 1).

2. The broad construction sector

The construction sector today

Economic indicators (2023)[5]	Employment (2023)	Workforce characteristics
Construction (NACE F): • Number of enterprises: 199,428 • Value added (million € per year): 10,333 (3.6% of GDP) • Net turnover (million € per year): 51,868 Architectural and engineering activities; technical testing and analysis (NACE M71): • Number of enterprises: 47,498 • Value added (million € per year): 2,705 (0.9% of GDP) • Net turnover (million € per year): 8,469	• Total employment in the construction sector: 413,056 • Organisation/structure of the construction sector and its supply- and value-chain including materials sector: ○ The enterprise size distribution indicates a predominance of small firms: according to the DoubleDecker project analysis, 67% of the workforce is employed in businesses with fewer than 20 employees.	• Employment composition shows a high share of self-employment. The European Construction Observatory reports the share of self-employed in narrow construction at 19.8% in 2020 (down from 22.2% in 2010), a level higher than the EU-27 average of 11.7%. In addition, • Employment shifts towards managers, clerical and professional jobs were observed between 2010 and 2020, while some craft and technical occupations decreased. • Detailed information on age, gender, education levels and nationality was not available.

[5] For countries outside the euro area, figures were sourced from Eurostat, which reports them already converted into euro.

The legislative framework for decarbonisation and its impacts on workers

Decarbonisation policies and emission timelines and targets
• National climate energy plan (NKEP): approved in 2024, sets targets for energy, transport and protection of climate. • Czech Recovery and Resilience Plan (RRP): allocates around €1.6 billion to large-scale renovation and energy-efficiency measures for buildings. These investments are designed to be accompanied by measures to support labour-market adjustments and training/upskilling linked to renovation supply chains. • OP Spravedlivá transformace (Operational Programme Just Transition, 2021–2027): focused on coal regions (Moravian-Silesian, Ústí and Karlovy Vary), it allocates 40 bn CZK (€1.7 bn) for new employment, business support, research and development, and clean energy projects in these regions. • Zero Carbon Roadmap - Pathway to climate-neutral buildings in the Czech Republic: part of World Green Building Council's BuildingLife programme, the Czech Green Building Council provides a comprehensive analysis and proposals for the decarbonisation of the Czech construction industry and the building sector. • Green Savings Programme: a subsidy programme of the Ministry of the Environment, focuses on reducing the energy consumption of residential buildings, construction or purchase of houses with very low energy consumption, environmentally friendly heating methods, renewable energy sources, and currently also adaptation and mitigation measures in response to ongoing climate change. The programme is currently financed through RRP, Modernisation Fund and a share in the revenue from auctions of emission allowances European Union Allowances (EUAs) and EU Aviation Allowances (EUAA)under the EU Emissions Trading System (ETS). • EFEKT Programme III 2022-2027: is a national funding programme aimed at implementing the energy savings, increasing energy efficiency and reducing energy consumption. • ENERG Programme: consists of interest-free loans for business to finance energy-saving projects. It is a complementary programme to EFEKT and focuses on projects within Prague. • Joint Boiler Replacement Scheme: launched by Ministry of Environment, it subsidises boiler replacements for low-income households. • 2050 target: net-zero greenhouse gas emissions by 2050 (EU Climate Law) 2030 targets: • 55% reduction in greenhouse gas emissions compared to 1990 levels. • Non-ETS emissions decrease by 26% compared to 2005 levels. • EU-ETS emissions decrease by 62% compared to 2005 levels. • increase energy efficiency, i.e. reduce final energy consumption to 846 PJ. • share of RES in final energy consumption 30%.

Impacts on the construction industry
• **(Expected) impacts on the construction sector and investments:** Czechia's climate and energy policies (including the EPBD and the Green Savings Programme) are expected to significantly increase demand for building renovation, energy-efficiency measures and renewable energy integration. The RRP alone

allocates €1.6 billion to renovation, which will further boost labour demand for retrofit and modernisation works. Despite technological change, the country still has substantial long-term workloads in infrastructure, new energy facilities (including nuclear), and building modernisation.

- **(Expected) impacts on employment, skills and activity of on-site construction workers:** The sector already faces acute shortages of qualified workers, as too few students enter technical and vocational pathways. Renovation-driven demand will intensify competition for skilled labour and create localised surges in activity, likely increasing subcontracting and reliance on small craft firms. Many traditional construction roles will expand in scope, requiring new competencies in lifecycle carbon, circularity, digitalisation and BIM.
- **Skills and workforce composition:** Demand is expected to rise sharply for technical installers and specialist retrofit trades, including electricians, HVAC and RES installers, energy-performance inspectors, and technical managers. For highly skilled labour (engineers and technicians for new technologies) demand could increase by 27-43%, according to the Czech Moravian Confederation of Trade Unions (CMKOS) analysis. At the same time, automation and robotisation are advancing in the Czech construction sector, shifting skill needs towards mid- and high-level technical and digital capabilities.

Towards a just transition for construction workers

Just transition vision in construction

- **Collective Agreements:** The construction/materials sector is covered by multi-employer collective agreements. In particular, Construction Employers' Union (Svaz podnikatelů ve stavebnictví) and the Construction Workers' Union (Odborový svaz Stavba ČR) negotiate a binding sectoral agreement on wages and conditions. The new higher-level collective agreement for construction covering 2024-2029 obliges employers to invest in workers' skill development (articles 23 and 25).
- **Country-level policies for just transition, in the core construction sector**
    - Operational Programme Just Transition 2021-2027 (Operační program Spravedlivá transformace): a national programme financed from the EU Just Transition Fund that targets coal and other carbon-intensive regions.
- **Just transition considerations in relevant policy debates:** n/a

Labour implications of the decarbonisation agenda

- **Labour rights challenges:**
    - Late payments and precarious work: The European Construction Observatory Czechia country fact sheet . notes significant issues with late payments. The total value of overdue B2B invoices increased from 24% in 2019 to 39% in 2020, representing an increase of 62.5% in late payments. This can create cash-flow risks for firms and subcontractors and increasing precarity for workers, especially the self-employed. The sector also relies heavily on foreign workers (mainly from Ukraine), many employed under non-standard or poorly protected arrangements. Weak labour-law enforcement, due to thousands of micro-firms, further exacerbates risks for migrant and subcontracted labour.
    - High share of small firms and self-employment: Self-employment and the prevalence of small firms limits social protection, weakens enforcement of labour standards, and restricts workers'

access to paid training and collective agreements. Firms often hire untrained workers to cut costs and that VET training budgets remain insufficient. Proposed solutions include stronger lifelong-learning funding, more attractive trainer careers, and procurement rules that reward quality and decent working conditions.

- **Movement between trades:** Employment is shifting towards managerial, clerical, and professional roles, while some craft and technical occupations are declining. Traditional trades will require new competencies in lifecycle carbon, circularity and digitalisation, while some routine tasks may decline due to automation. Limited movement of workers from material-production industries into construction, partly due to less attractive wages and conditions.
- **Geographical distribution of implications**: Although migration towards Prague can create local labour imbalances, regional differences in transition impacts are relatively limited because the Czech Republic is small and construction activity is broadly dispersed across regions.

Benefits for workers brought by the green transition in the construction sector	Disadvantages for workers brought by the green transition in the construction sector
• Growing demand for renovation, energy-efficiency upgrades and modernisation projects is expected to create significant new employment opportunities, particularly in technical and specialist construction roles. • Expanding upskilling and reskilling initiatives can strengthen employability, support career progression and help workers adapt to new technologies, including digital and energy-efficient construction methods. Companies increasingly cooperate with vocational schools and offer retraining to ensure workers can acquire the necessary competencies. • Public funding and emerging qualification platforms are enhancing access to lifelong learning, with renovation-related investments supporting training for priority trades and encouraging faster adoption of modern construction technologies.	• Workers in routine, low-skill on-site roles may be negatively affected by automation and industrialisation. • Self-employed workers and those in micro and small enterprises may have less access to training and social protection, making them more vulnerable during the transition. • There is a risk of increased inequality between different groups of workers (e.g., women, youth, migrants), unless targeted measures are implemented. The construction workforce increasingly relies on migrants (especially from Ukraine), many of whom face weaker protections and higher exposure to illegal or semi-legal work arrangements. Labour-market mobility is constrained by the lack of affordable housing, making regional inequalities harder to overcome. • Research and core innovation in green technologies is lacking in Czechia.

Ways to reinforce benefits and reduce disadvantages

- Expand and subsidise training opportunities, especially for small firms and self-employed workers.
- Implement targeted recruitment and support measures for underrepresented groups (women, youth, migrants) and structurally weaker regions.
- Strengthen public procurement quality standards to incentivise decent working conditions and quality outcomes.
- Develop a nationally adopted construction strategy to improve coherence across education, procurement, and labour protection measures.

Workers groups most affected

- **Professional groups in the core construction business and supply chain with the highest environmental footprint and how they are affected:**
  - Craft and technical trades directly involved in retrofit works (such as HVAC installers, carpenters, electricians (low- and high-voltage), hydro-insulators, stove and chimney builders, inspecting technicians and window installers) are expected to be positively affected due to rising demand for energy-efficient renovation.
  - Electrical and mechanical installers, as well as commissioning and energy-performance verification specialists, will also benefit as requirements for system integration and measured energy savings increase.
  - Management and coordination roles are expanding as digitalisation, automation and AI adoption accelerate, with strong growth in demand for managerial and professional profiles.
  - Conversely, low-skill routine on-site roles may be negatively affected, as industrialisation and automation reduce demand for repetitive manual tasks or transform them into more technical oversight functions.
- **Groups where most training is needed and what kind of training:**
  - Training needs are highest among the craft and technical trades most directly involved in renovation, including HVAC, electrical installation, insulation, window installation and diagnostic professions. These groups require upskilling in areas such as commissioning, energy-performance verification, zero-emission building (ZEB) requirements, digital tools, and modern retrofit techniques.
  - Managers and project coordinators increasingly need training in digital construction tools, automation, data management and project planning to operate within more technologically advanced systems.
- **Gaps in skills development:**
  - Self-employed workers and those in micro and small firms have limited access to employer-provided training and social protection, leaving them less equipped to acquire new competencies.
  - Women and young people remain under-represented in many high-demand technical fields, and current entry rates into vocational and technical education remain insufficient to meet future labour needs.
  - The construction education system is fragmented, and there is no systematic data on student numbers by trade or on employability outcomes. This limits evidence-based planning and targeted training. Weak labour data, combined with fragmented employment structures and the presence of undocumented or illegal work, also hinders effective enforcement, making it difficult to assess workforce conditions, identify training needs and monitor workplace safety.

Workers positively affected	Workers negatively affected
• Craft and technical trades • Electrical and mechanical installers and commissioning professionals • Managers and project coordinators	• Low-skill routine on-site roles • Self-employed and micro and SMEs

Existing protection mechanisms

- **Existing mechanisms to protect or reinforce labour rights/conditions during the transition:**
  - Public funding for training: Funding from national programmes and the RRP supports upskilling for renovation and energy-efficiency works, with lifelong learning framed as central to the transition. Trade unions participate in bipartite dialogue and national consultations to ensure training reaches workers.
  - National Qualification Platforms (NQPs): These platforms coordinate ministries, vocational schools, employers, and associations to align curricula with labour market needs, standardise qualifications, and incorporate worker perspectives.
  - EU and national projects for green construction skills: Initiatives such as CraftEdu and DoubleDecker provide modular training, training-of-trainers, and practical curricula for retrofit trades, addressing gaps in skills development and offering scalable models for national programmes.
  - Regulatory protection guaranteed under Czech Labour Code: it guarantees workers a statutory notice period and severance pay if they lose their jobs due to organisational changes, restructuring or redundancy, including those driven by the green transition. The legislation sets out minimum severance levels depending on length of service and requires employers to follow fair dismissal procedures, including written notice and justification.

- **Existence of gender-/age group-/workers group-specific measures**: DoubleDecker project report contains explicit measures to attract women, target structurally weaker regions (e.g., Ústí nad Labem, Karlovy Vary, Moravian-Silesian), and create campaigns for youth. Such targeted measures can improve accessibility of transition-related jobs for underrepresented groups. Interview evidence confirms that attracting youth into technical education is essential. Both ČMKOS and Construction Trade Union report that too few young people enter technical construction pathways, and this creates a long-term risk for the labour supply required by the green transition.

- **The role of trade unions/construction businesses:** Trade unions (ČMKOS, Construction Trade Union) advocate for a socially just transition, ensuring that technological shifts in construction and cement come with worker protections, including retraining, clear redundancy rules, and co-determination mechanisms. Worker training and lifelong learning are central priorities, with programmes supporting state- or employer-led initiatives that help workers enhance existing skills or acquire new qualifications, particularly those at risk of job loss due to structural changes. In practice, unions promote on-the-job training, apprenticeships, and retraining to adapt to decarbonisation technologies. For example, Czech cement and construction firms already send employees on multi-month placements at parent plants to gain hands-on experience with low-carbon technologies.

Specific measure #1

- **Operational Programme Just Transition 2021-2027 (OP Spravedlivá Transformace).** The grants that include dedicated funds for retraining, job-search assistance, and mobility measures for workers in coal regions.

3. The construction material supply chain

<table>
<tr><th colspan="3">In focus: Decarbonising construction building material – cement</th></tr>
<tr><td>• Českomoravský Cement (Heidelberg Materials CZ): the biggest producer of cement in Czech Republic and a part of the international group Heidelberg Materials
• Cement Hranice AS (Dyckerhoff/Buzzi)
• Holcim Česko (LafargeHolcim)
• Cemex Czech Republic</td><td>• Českomoravský Cement (Heidelberg Materials CZ): ~1300 employees</td><td>• Age, gender, education levels, and nationality information is not publicly available.</td></tr>
<tr><td colspan="3">• Title and main features of key decarbonisation policies:
○ Zero Carbon Roadmap (2024): the Czech Cement Association (SVC ČR) has adopted a roadmap to reach net-zero by 2050. It supports the EU's "Green Deal Industrial Plan" and advocates detailed national analysis of decarbonisation pathways.
• Existence of collective agreements: The cement sector is covered under the broader construction sector collective agreement.</td></tr>
<tr><td colspan="3">• (Expected) impacts on the supply chain:
○ Decarbonisation is transforming both cement production and construction practices. Czech cement kilns already substitute significant shares of coal with alternative fuels (40.1% industrial waste and 31.1% biomass in 2021). For instance, Holcim is investing CZK 1 billion in a 500,000 t/yr calcined-clay processing line in Čížkovice, producing low-carbon cement without fossil fuels and with lower energy intensity.
○ In the construction supply chain, demand is shifting towards low-carbon materials and techniques. Scenarios for achieving a climate-neutral building stock by 2050 emphasise material substitution, efficiency improvements, and sustainable construction practices.
• (Expected) impacts on employment, skills and activity levels of workers in the materials industry: new facilities (e.g., Holcim's clay plant) create jobs in automation, process engineering and maintenance. Conversely, roles tied to coal or old kiln technologies may diminish. For workers, this means re-skilling will be essential (e.g., training on alternative-fuel handling, emissions monitoring).</td></tr>
<tr><td colspan="3">• Country-level policies for just transition in the building material sector: No sector-specific cement just transition plan is published, but existing policies emphasise retaining employment in industries while shifting their practices.</td></tr>
<tr><td colspan="3">• No movement to other sectors seems to be happening.
• Geographical distribution of the implications: Cement production and related employment are concentrated in specific regions: Moravia (Hranice, Mokrá), Bohemia (Čížkovice, Prachovice), and the outskirts of Prague (Radotín). Any downsizing of these plants could lead to localized job losses. In contrast, green jobs are likely to cluster around investment areas. For example, the Operational Programme Just Transition fund focuses on Ústecký, Karlovarský, and Moravskoslezský regions, where economic diversification could drive growth in energy-efficiency retrofitting, recycling, and renewable energy services.</td></tr>
</table>

Key hotspot for transformation #1
Holcim Česko Čížkovice plant is undergoing a green transformation. In 2024-25 it is installing a calcined-clay processing line, a CZK 1 bn investment that will produce 500 kt of low-carbon cement per year. This will eliminate Holcim's on-site fossil fuel use and cut the plant's emissions drastically. Local jobs are being preserved and upgraded (new technicians, engineers) and the project received CZK 330 million subsidy from the Modernisation Fund.
• **Benefits for workers:** Transitioning to low-carbon cement production improves workplace health and creates higher-tech job opportunities. Using waste and biomass fuels reduces coal dust exposure, while modern plants (such as Holcim's new line) offer cleaner air and lower temperatures inside kilns. Workers gain upskilling opportunities by operating advanced equipment, including clay calcination systems, building long-term technical skills. Additionally, green renovation and building initiatives stimulate broader demand in the construction sector. • **Disadvantages for workers:** Jobs linked to older technologies may decline. Reducing coal use requires significant investments, and some plants may face slower production or downtime during upgrades. Lower-skilled workers may face challenges in retraining, limiting their ability to transition to new roles within modernised production processes. • **Existing mechanisms to protect or reinforce labour rights/conditions:** While not specific to cement, sectoral unions play a key role in safeguarding workers during transitions. They negotiate collective agreements that establish clear rules for training, retraining, and severance arrangements, ensuring protection when technological or economic changes impact employment. • **The role of trade unions/construction businesses:** Cement producers are adopting alternative fuels and digital process controls, while providing training for workers to operate these systems. As Czech cement plants decarbonise, they are also expanding capacity to train designers and site engineers in low-carbon cement technologies.