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Unions and the green transition in construction in Europe: contrasting visions

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Abstract

The construction industry, responsible for 40% of European Union (EU) end-use emissions, is targeted as a major area of transformation particularly through the Energy Performance of Buildings Directive requiring nearly zero energy building (NZEB). Through a case study approach, union responses to EU strategy on the implementation of energy efficiency standards are evaluated in Denmark, Germany, Italy and UK (Scotland), presenting a varied picture, from minimal acknowledgement to broad support along the lines of ecological modernisation to radical transformation. Radical appraisals of the industry and its exploitative and high-carbon practices are rare, though engaging with the employment and vocational education and training (VET) implications. The article presents a labour-centred alternative to a technical-driven transition agenda, focusing on how the labour process needs to change in a sector dominated by small firms, self-employment, a fragmented labour process, and often low levels of VET.

Key words: construction industry, ecological modernisation, energy efficiency, green transition, union strategies, NZEB

Introduction

The built environment is responsible for 36% of CO₂ emissions and 40% of energy consumption in the European Union (EU) and thus targeted for a major transformation in its climate change strategy (EC, 2019). Improving the energy efficiency of buildings is fundamental to achieving the objective of carbon-neutrality by 2050 and in this the Energy Performance of Buildings Directive (EPBD) plays a critical role, requiring nearly zero energy building (NZEB) for all new buildings by the end of 2020 (EPBD, 2018). The consequences for the employment and vocational education and training (VET) of construction workers are far-reaching as higher levels of qualifications, technical precision, inter-disciplinary teamworking and a holistic approach to the building process are needed to meet NZEB standards (Clarke et al., 2017). These requirements imply a major transformation of existing construction VET systems and employment structures.

Notwithstanding the differences between Member States' capacity for implementing NZEB, our research indicates that in much of Europe, especially in Anglo-Saxon, Mediterranean and eastern European countries, the sector is burdened by long-standing problems concerning the provision of VET, skill shortages, narrowly defined jobs, insecure employment and fragmentation of the construction process (Clarke et al., 2019). These social aspects jeopardise the potential to secure environmental gains and yet tend to be obscured

from view in current policy revolving around energy performance standards, technical innovation and job creation.

Despite the challenges, the greening of the built environment has received limited union attention. In contrast to sectors expected to lose jobs, transforming construction into a green industry is seen as relatively unproblematic and positive in terms of its energy saving and job creation potential, particularly through renovation of existing buildings. Whilst the ‘just transition’ narrative encompasses the ideas of ‘decent work’ and worker voice, proposals relating to construction are restricted to calls for government funding for retrofitting and training and focussed on job creation, reflecting unions’ central concerns in relation to the impact of climate change on workers (e.g. ITUC, 2017a; BWI, 2015; TUC, 2015; ILO, 2018).

This article was prompted by the apparent irony between, on the one hand, the positive reception given to greening construction and, on the other, the challenges to its implementation, given the implications for the building process of meeting NZEB standards. A lack of reflection on the quality or qualifications of the labour needed and the emphasis instead on the quantification of ‘jobs’ and ‘work’ are reminiscent of a distinction made by Biernacki (1995) between ‘labour power’, revolving around the development of labour capacity or potential, and ‘embodied labour’, linked to output in a given work process. A similar contrast is found between a socially transformative approach that empowers workers and one focussed on ecologically modernising an industry, without concern for the quality of labour and employment involved or for worker agency in shaping the transition (Hampton, 2015). In this respect, the technically oriented EU vision exemplifies the ecological modernisation approach (Mol et al., 2009) in aiming to modernise construction with the aid of renewable technologies and energy efficiency measures without altering the social relations and structures that shape the sector. By contrast, the ‘just transition’ perspective emphasises the ‘social’ dimension of green transitions, including labour standards and worker agency, alongside a strong government role. However, whilst the International Labour Organisation (ILO, 2015) and global labour organisations such as the International Trade Union Confederation (ITUC) set out the principles of ‘just transition’, the social transformation pursued in practice varies and its exact nature in any one sector remains to be specified. This article addresses this in posing the question: what is the nature of unions’ involvement in the ongoing green transition in construction and what kind of ‘just transition’ is implied by their interventions?

The article begins with an overview of EU green transition policies for the built environment, followed by a discussion of just transition. Following an outline of the methodology applied, the empirical part evaluates how far ‘social’ transformation is implied in the activities of selected unions covering construction in Denmark, Germany, Italy and Scotland (UK). Our analysis shows that union responses and strategies are shaped by the transition challenges arising from the specificities of the construction industry and VET model in each country, the possibilities and constraints posed by the industrial relations system, and the coalition of actors involved, including the state. The article concludes with the implications for a ‘just transition’ in construction and the possibilities for union intervention.

The transition to low energy construction (LEC) in Europe: the policy context

The energy policy stipulated in the EU2030 development strategy aims by 2030 to reduce CO₂ emissions by 32.5% and increase the share of renewable energy and energy efficiency by 32% compared to 1990 levels, while the ‘Clean Energy for All Europeans’ strategy aims for a carbon neutral built environment by 2050 (EC, 2019). Improving the energy efficiency of buildings is fundamental to achieving these goals, implying a major transformation of construction driven by EPBD energy saving targets for new buildings and the renovation of existing buildings (EPBD-2010/31; 2018/844). EPBD sets out the general definition of NZEB and Member States are tasked with its transposition into national law and implementation, including the development of national energy action plans detailing financial incentives, energy performance certification and

inspection schemes, renovation strategies and complementary measures. For all countries this means achieving higher energy performance standards, though exact technical specifications for NZEB vary (EC, 2016a).

The implementation of the policy depends on a workforce adequately equipped with the necessary expertise and on changes in the building process (EC, 2014). Technically NZEB is fundamentally different from traditional construction as buildings must meet specific energy performance requirements through such measures as airtight building envelopes, thermal-bridge free construction and on-site renewable energy sources. Failure to build to the exact specifications required results in a performance gap, the difference between the energy efficiency standards intended and those actually achieved, jeopardising the EPBD-stipulated emission savings. Evidence on the performance gap indicates problems with respect to work organisation, the employment structure, and lack of expertise (Johnson, 2016). Addressing these calls for enhanced inter-disciplinary understanding, which is critical for the collaboration required on site, bridging divisions between construction occupations and overcoming the fragmentation enforced through sub-contracting (Clarke et al., 2017). VET for construction workers needs in turn to provide a deeper theoretical knowledge base, encompassing principles of energy efficiency and building physics, higher technical and precision skills, cross-occupational understanding of the construction process, and a wide range of transversal abilities (EC, 2014).

VET for workers constitutes an important part of the EU green construction agenda. The Build Up skills (BUS) programme (2010-2017) was launched to increase the number of workers qualified in energy efficiency measures and the installation of renewable energy systems. The BUS Overview (EC, 2014) lays bare the scale of the task; across the EU, over three million workers need training and most countries lack the capacity and resources to provide the VET required. The challenge of achieving the expertise required for NZEB is compounded by thousands of existing construction workers having low levels of general education and without formal training or qualifications. Though countries address similar objectives, the scale of what is needed varies substantially. Whilst the knowledge, skills and competences required for low energy construction (LEC) have been mainstreamed into initial VET (IVET) courses in some countries (e.g. Denmark, Germany), they are almost non-existent in others (e.g. Italy, UK), which rely instead on task specific courses run by manufacturers and catering to the highly qualified or building services occupations (EC, 2014, 2012). A closer evaluation of developments also reveals two distinct approaches underpinned by different concepts of labour and with starkly different consequences for workers. At one extreme, the capacity of labour for an active role in adapting to new methods and materials of construction is enhanced through mainstreaming LEC elements into courses, so conforming to Biernacki's (1995) concept of 'labour power'. At the other, specific 'skills' to fulfil particular tasks under supervision are imparted through narrow and short training programmes conforming to Biernacki's 'embodied labour' (Clarke et al., 2019).

Though rarely featuring in debates on energy efficiency, the domination of the construction labour market by self-employment and micro firms further undermines any training infrastructure and is implicated in studies of the performance gap. This is compounded by the severe recruitment crisis confronting the industry and reliance on migrant labour flows across Europe (EC, 2016b; Meardi et al., 2017). Workers on temporary and insecure contracts and small sub-contractors are unlikely to develop the high levels of expertise or coordination needed for successfully meeting NZEB standards. Limited evidence on work organisation in green construction suggests that, whilst some firms adopt approaches that empower workers, others replicate the dominant model of reliance on supervision in a fragmented building process (Ramioul et al., 2016).

Two inter-related challenges for a just green transition in construction are therefore to transform the dominant employment model (rather than job creation) and to ensure that VET equips workers with the broad and high-level expertise needed (as opposed to quick-fix, task-oriented skills training). In other words, the transformation needed exemplifies the importance of addressing both environmental (e.g. successful greening of buildings) and social (i.e. transformation of construction employment and VET) issues. The EU's agenda of

ecologically modernising buildings seeks to address training needs albeit within existing VET models, while neglecting employment and labour process implications. To what extent do these aspects of the transition feature in proposals of construction unions?

Unions and green transitions

The position of labour unions on green transitions in general is encapsulated in the call for a 'just transition' (ITUC, 2017b), taken up by the Paris Agreement on Climate Change (UNFCCC, 2017). Although the idea of just transition continues to evolve and be substantiated through implementation in different sectors and geographies (ITUC, 2019; UNRISD, 2018), it refers to the process of transition, be this at national, regional or company levels, to green and decent jobs in a net zero emission economy, a process managed through dialogue between governments, workers and employers (ITUC, 2017b). Climate emergency declarations are also linked to inequality, calling for an integrated approach to tackling social injustice and environmental problems to achieve a social-ecological transition (Laurent and Pochet, 2015). The United Nations Sustainable Development Goals (SDGs) too, in coupling green growth and ecological reform with social protection and minimum labour standards, suggest that the principles underlying just transition are, at least in theory, integrated into international policy on climate change (UN, 2015). The ILO (2015) guidelines provide further more detailed policies for implementing just transition, emphasising access to decent jobs, social protection, skills development and social dialogue.

Whilst the significance of these developments for the participation of organised labour in the global climate change debate and action is recognised, the social, economic and political transformation implied is contested (Stavis and Felli, 2016; Stavis et al., 2018). International expressions of commitment to climate action do not necessarily translate into effective action as neither national government nor local actors may accept the possibility of socially responsible, green capitalism (Sweeney, 2015). Further questions are raised about implementing a just transition framework into different geographical and sectoral contexts, each with its own history, specific issues and power relations (Snell, 2018). Above all, however, critics argue that the approach developed and articulated by organised labour in Europe is a variant of ecological modernisation (Mol et al., 2009) and does not challenge the social relations of production entailed in the neoliberal political economic order (Felli, 2014; Sweeney and Treat, 2018).

Hampton (2015), based on analysis of union strategies in the UK, highlights the main features of union ecological modernisation approaches, exemplified by the Trade Union Congress (TUC): emphasis on the role of state; alliances with non-state actors, such as environmental social movements and businesses; mitigation of the social implications of climate change and climate policies; and a range of adaptation measures, including training and compensation for workers. There are important differences, however, between strong and weak versions of ecological modernisation. Stronger ones are sensitive to the impact of existing social and economic structures and relations on environmental ambitions, calling for comprehensive social reforms, adjustments to institutional structures and economic growth strategies, alongside environmental reconstruction of production processes (Bailey and Caprotti, 2014). Weaker versions, in contrast, assume that 'environmental rationality' (Mol and Spaargren, 2000) will be incorporated into the logic of growth driven market capitalism. Despite different interpretations, ecological modernisation is a project of reform that advocates building an environmentally sustainable economy, distinguished by a new wave of technological innovation (Pellow et al., 2000). The premise of ecological modernisation theorists is that the existing capitalist economic and social order does not pose a major barrier to achieving ecological ambitions (Mol and Spaargren, 2000: 36).

Radical critiques of ecological modernisation, whether practised by governments, environmental organisations or unions, focus on decoupling environmental and societal transformation, arguing that the growth and profit driven capitalist system of production must be targeted directly as the main driver of environmental degradation and that even the more

planned and socially sensitive approaches fail to tackle underlying causes of the climate crisis (Hampton, 2015). In contrast to the institutional reform emphasis of strong versions of ecological modernisation, the call is for a paradigm shift away from the dominant narrative of ‘sustainability’ compatible with the prevailing order. Building on early Marxist theories of the relationship between labour and nature as belonging to the same ‘metabolism’, both sacrificed at the altar of the ‘treadmill of production’ (a concept discussed by Paolo Tomassetti in this issue), the green capitalism implied is challenged (Foster, 2000, 2002). Climate action by unions, it is argued, needs to target the mechanisms and social relations that retain the existing production system and prevent deep socio-economic restructuring on environmentally and socially sustainable foundations (Hampton, 2015).

Worker agency is essential for shifting green transition strategies from technological solutions towards a social, political and economic transformation (Rathzel and Uzzell, 2013), but what shape and form this might take is an open question. The just transition approach adopted by unions, with its emphasis on regulation and reform through collaboration between businesses and workers, appears as a form of ecological modernisation, greening production within the same economic-growth model. Against this, critics argue that the task is to imagine a political economy where the labour-nature relationship is reconstructed to prioritise needs, reproduction of life and protection of the environment (Barca, 2019). Connecting working-class environmentalism with environmental justice, Barca and Leonardi (2018) also stress the importance of broadening notions of ‘work’ and ‘worker agency’, arguing that radical reconstruction of the work-ecology relationship is achieved by more directly including all those impacted by green transitions, not only unions. These contrasting perspectives also imply either a more passive role for labour, resonating with Biernacki’s (1995) ‘embodied labour’, or a more active one, in accordance with ‘labour power’.

This debate is relevant to construction given that the failure to meet energy efficiency targets is related to the fragmented labour structure and inadequate VET, though these are absent from EU-led ecological modernisation policies (Clarke et al., 2019). But how far are they addressed by unions? To discover this, we investigate four local case studies of construction sector unions in different EU countries.

Methodology

The article draws on a project, *Green Transitions in the Built Environment*, carried out as part of an international research programme on climate change and work, with extensive international union and academic involvementⁱ (Clarke et al., 2018). This project investigated the role of selected construction unions in Denmark, Germany, Italy and Scotland (UK). The countries are representative of particular industrial relations systems and VET models: *Nordic/Denmark*; *Central European/Germany*, *Mediterranean/Italy*; and *Anglo-Saxon/Scotland/UK* (Ebbinghaus, 1999; Clarke et al., 2019). Each has more than one construction union: Denmark has seven, mainly divided by occupation, with BAT Kartellet acting as umbrella organization and lobbying to influence policy; Germany has two, roughly divided by sector, with building services separately organised in IG Metall; Italy has three, divided by political affiliation; and UK has two, roughly divided by area of activity.

Our evaluation is based on analysis of unions with major responsibility for construction in their respective countries and identifiable proposals and engagement with climate change. These are:

- 3F (Faglig Faelles Forbund/United Federation of Danish Workers) in Denmark
- IG BAU (Industriegewerkschaft Bauen-Agrar-Umwelt/Industrial Union in building, agriculture and environment) in Germany
- FILLEA-CGIL (Federazione Italiana Lavoratori Legno ed Affini-Confederazione Generale Italiana del Lavoro/Federation of Wood, Building and Industry Workers associated to the Italian General Confederation of Labour) in Italy
- UNITE for UK, but with a particular focus on Scotland

Two of these – Unite and 3F – cover a number of different sectors, whilst the remaining two – IG BAU and FILLEA-CGIL – are specifically construction unions. The fieldwork undertaken involved interviews with these unions, as well as visits to and interviews at training centres and low energy construction sites.

In addition, for each country relevant BUS Reports, labour market statistics, European Construction Sector Observatory and CEDEFOP (European Centre for the Development of Vocational Training) country reports, and NZEB national progress reports were evaluated and construction union policies and other written declarations on green construction reviewed. Our findings are not necessarily representative of the union movement as a whole in each country or up-to-date, given that the fieldwork took place in 2017-18, but are rather presented as examples of different approaches to climate action in the construction sector and illustrative of the specific forms this takes in different contexts.

Construction labour markets, VET system and NZEB implementation

There are significant political, economic and educational barriers to advancing the green transition in construction in the EU, contradicting the ecological modernist premise that existing structures and relations do not constitute an insurmountable barrier to environmental reforms. In each country, the industry plays an important role, contributing to about 7-9% of Gross Domestic Product and employment, depending on how the sector is defined, with Denmark employing over 300,000 construction workers, followed by Italy with 1.3 million, and Germany and UK each with 2.3 million (EC, 2018). Construction labour market similarities are the severe skill shortages reported and mushrooming of small firms, with micro firms constituting 18% of all firms in Denmark and 22% in Germany in contrast to UK at 38% and Italy at 65% (Eurostat, 2019). In Denmark and Germany, the construction labour market is, however, more regulated and less fragmented than Italy and the UK, with a substantial proportion of medium-large firms. Sharp differences in self-employment can also be observed between Denmark and Germany, where the self-employed represent only 11% of the workforce, in contrast to Italy at 43% and UK at 49%. A high number of micro firms and self-employment suggest reliance on extended sub-contracting chains and fragmented production processes, at odds with NZEB's need for a coordinated approach.

Countries differ significantly in terms of the power and scope of unions. Construction union membership, which has been steadily declining everywhere, is highest in Denmark at 80-90% of the workforce. Italy has the highest number of union members in Europe, five million in CGIL alone, though construction union membership is estimated at around 30% of the workforce. In Germany, the construction union IGBAU represents less than 20% of the workforce, whilst in the UK the rate is estimated to be as low as 13%, though much higher in the public sector and historically higher in Scotland than England.

Through social partnership, Danish and German unions are formally embedded in policy-making and implementation, including in transposing NZEB policies and VET governance at all levels – national, municipal and workplace. In contrast, in Italy and Scotland (UK), construction unions are formally less embedded, except locally and in VET development in Italy, exercising influence and defending the interests of their members through practical initiatives and direct action (Clarke et al., 2018). For instance, in the UK, the 'social' dimension of the green transition in construction is strengthened through Unite's Construction Charter, signed by many local authorities and containing clauses on direct labour, union representation and collaboration, appropriate skills and qualifications, developing training opportunities, compliance with collective agreements, and fair and transparent recruitment. In Scotland, much of the union membership is employed by local authorities or in not-for-profit organisations, which have had a historically significant role in improving employment and working conditions and training in the industry.

The construction VET systems of Denmark and Germany contrast considerably with the UK. In Denmark, IVET is well equipped to respond to the NZEB challenge, being

comprehensive and combining work and college-based learning, with LEC expertise integrated into curricula. Awareness and participation in CVET LEC courses are however low among existing building workers. The social partners jointly govern the VET system, with unions represented on national and local bodies and having responsibility for developing, monitoring and updating courses and qualifications. Germany's construction VET system is well-funded, nationally-regulated and federally-organised to provide a comprehensive programme incorporating theoretical and practical learning in three locations - firms, colleges and training centres. The historically strong and encompassing collective institutions (Streeck and Hilbert, 1991) have enabled unions to shape VET for LEC. LEC expertise is embedded into the broad occupational profiles of construction occupations, or *Berufe*, leading to high levels of relevant knowledge, skills and competences, integrated qualifications and the development of transversal abilities, such as project management and communication, equipping workers with greater capacity or 'labour power' to meet LEC challenges on site and adapt to future technological changes.

In contrast to this development of 'labour power', the VET systems of both Italy and UK are under-funded, with limited preparedness for NZEB. They tend to be underpinned by the instrumental concept of 'embodied labour', with inadequate development of the whole person and self-monitoring replaced on site by increased supervision (Clarke et al., 2019). In the UK, a fragmented approach to NZEB expertise is evident, with a VET system predominantly organised for narrow specialisation, addressing specific aspects with little emphasis on theoretical understanding of the 'big picture' related to climate change. There exists a divide between industry and education, with construction skills development in the private sector coordinated by the statutory employer-based Construction Industry Training Board with little union involvement. VET provision is varied, often almost entirely work-based with minimal educational input, and comes under private training providers, further education colleges, or local authorities. In Italy, in contrast, VET for the construction sector is regulated by the National Collective Labour Agreement for Construction Enterprises and comes under the national body FORMEDIL, in which the unions are actively involved and which is divided into regions and carries out training in 102 building colleges.

Although the EPBD has been transposed into national legislation in all four countries, implementation varies (EC, 2017). Across Denmark and Germany implementation is uniform, actively led by government through ambitious energy transition and emission reduction plans, applied in the context of greater energy awareness and long-standing LEC programmes. In Italy and UK, the green construction agenda is not given the same policy priority, though the situation is developing with the growth of NZEB social housing in the UK and the harmonisation of regional implementation plans in Italy. Retrofitting the existing building stock, a potentially major source of employment, remains limited in all four countries, though Denmark and Germany have in place government and local authority led plans. In Scotland, the government has taken a strong lead with the Energy Efficient Scotland Programme (Scottish Government, 2018). Funds for NZEB implementation remain particularly low in Italy as the sector struggles to recover from recession (Galgóczy, 2015).

Union engagement with the green transition in construction is thus partially shaped by the context in which unions operate, given the specific challenges in each country posed by conditions in the sector and by the respective VET systems. In part, however, it is guided by their position and power in the existing industrial relations system and historical patterns of engagement (Hyman, 2001). In the next section we elaborate on how these union identities play out in relation to the green transition in construction.

Union proposals for a green transition in construction

On climate change, all four unions support the Paris Agreement and call for a just transition. Each collaborates with environmental organisations to support climate action and campaigns and employs one official to champion 'green' issues, although these are said to be low priority for the wider membership despite the surge of public interest in climate change. More

significantly, all four unions report lack of resources, particularly personnel and expertise, as a major barrier to more pro-active climate action. More traditional membership issues relating to employment are prioritised and policy work is seen as the domain of national federations. Awareness of NZEB policies, their transposition into national building regulations and implications for construction workers are also reportedly low.

In relation to the green transition in construction, analysis reveals a dichotomy between support for, on the one hand, national implementation of the EU-led ecological modernisation programme and, on the other, proposals challenging the exploitative practices of the industry and presenting radical alternative employment and VET practices, albeit at the local level. In Denmark and Germany, social partnership entails a collaborative approach, with unions seeking to bring a social and labour perspective to proposed policies. In the UK, Unite's lobbying of government and practical efforts are focused on embedding decent work and employment standards in the labour market and protecting members' interests. In Italy, CGIL's perspective is underpinned by its strong political identity as the representative of working class interests (Hyman, 2001). At the same time, findings suggest that the climate emergency gives impetus to transcend traditional union roles and identities.

Ecological modernisation of the built environment: 3F and IG BAU

Both 3F and IG BAU's proposals exemplify support for ecological modernisation: emphasis on government investment, technological innovation in greening production processes, collaboration with a range of actors, and measures to ensure that workers are equipped to deliver the low carbon buildings planned. Substantial energy savings are anticipated, with thousands of jobs created in construction and related industries.

The United Federation of Danish Workers (3F) is unique in drawing on the expertise of a dedicated officer with long years of involvement in environmental action both in Denmark and internationally. The union has also invested in policy development by a Green Think-Tank, set up jointly with the employers' association with the specific purpose of developing proposals on a circular economy, sustainable growth, and energy self-sufficiency (3F, 2011, 2015). A case is made for increasing renewable energy derived from biomass, wind and water through investment in bio-refineries, waste recycling facilities, onshore and offshore wind energy and water technologies, particularly in areas of high unemployment, so targeting the urban-rural job-divide. Proposals on green construction target retrofitting, whilst demonstrating awareness of training and work organisation implications. The union calls on the government to incentivise and expand energy renovation of existing buildings and upgrade the extensive district-heating network to renewable energy, with increased role for municipalities. For energy renovation of existing buildings, the greener Home-Job plan proposes differentiating subsidies for privately owned properties, rented accommodation and social housing. Green construction proposals also address the needs for a collaborative and holistic approach on construction sites and expansion of training opportunities for the existing workforce. Finally, the union is active in addressing challenges posed by the posting of workers, whose exploitative employment conditions and lack of training can jeopardise quality standards.

In contrast to 3F's proposals linking EPBD implementation to a whole economy approach, IG BAU does not have written policy proposals and has largely relied on responding to specific and practical issues arising such as recyclingⁱⁱ. It calls for further government intervention and regulation of house prices and rent increases to ensure that these will not offset the savings (in energy bills) anticipated as a consequence of energy efficiency policies. As part of an alliance with tenant associations and employers, the union campaigns for increased funding for retrofitting and more new energy efficient houses and for doubling loans and subsidies provided by the state-owned banking group. Finally, IG BAU calls for investment in the hitherto neglected potential for road recycling and facilities for safe recycling of insulation materials, resulting in CO₂ emission savings compared to landfill.

Thus, in the context of ambitious and gradually advancing renovation of the built environment in both countries, 3F and IGBAU's response is broadly in line with the ecological modernisation vision in calling for stronger implementation measures, more funding, and support for workers, communities and citizens to mitigate the impact of transition measures. Calls for further government investment are particularly apt as retrofitting schemes rely heavily on this, given that the private sector investment anticipated has not materialised across Europe (Torregrossa, 2015). IG BAU indicates that, against the target of retrofitting 2% of the housing stock every year, the actual figure is only 0.8%. In terms of retraining too, awareness and take up of LEC training by existing construction workers remains low, although they are key to meeting retrofitting targets. 3F and IG BAU's response is therefore within the parameters set by EU policy, seeking to further the already EU-leading implementation programmes put in place by the Danish and German governments. Unions rely on existing strong regulatory mechanisms and their embedded monitoring role to ensure decent working and employment conditions as well as VET provision for LEC, so their strategies for a green transition focus on furthering environmental gains, government investment and job creation.

A radical transformation perspective: FILLEA-CGIL

In contrast, in Italy the construction union FILLEA-CGIL, which has historically been associated with radical politics, challenges established industry practices, including speculative and profit driven building, the spread of concrete and urbanisation, use of high carbon materials, lack of social dialogue and poor working and employment conditions. Though the union has not published detailed policy proposals, its approach represents a radical re-thinking of the sector, calling for deeper greening and giving consideration to labour conditions. Its strategic commitment, *An end to the building of new homes, zero-soil consumption and a reduction in building on greenfield sites*, was agreed at a special congress in 2014 and is indicative of its distinct approach (for the full statement, see Clarke et al., 2018). FILLEA-CGIL proactively targets cement as a high carbon emission product and draws attention to the construction process itself as responsible for a substantial part of emissions attributed to the industry (Bataille, 2019). Its calls for cement use to be reduced by 50% by 2020, eventually being replaced by low emission and environmentally friendly materials, such as hemp and lime, and for this to be included in public tenders have faced resistance from the cement industry and politicians.

To achieve a green transition, the union calls for a transformation of the building production process and working and employment conditions to address long-standing labour market problems characterising the industry in Italy and much of Europe, such as job quality, health and safety protection, and illegal employment practices. It draws attention to the need to include women, migrant workers and young people in transforming the sector. The call to include sustainable development and green building clauses in European Works Councils (EWCs) agreements and International Framework Agreements (IFAs) recognises the significance of formal commitments and the role of worker representatives as active agents in transitioning to sustainable constructionⁱⁱⁱ (FILLEA-CGIL, 2017).

FILLEA-CGIL's distinction lies in the inclusion of practical and highly relevant proposals on construction employment and, above all, in offering an alternative vision in keeping with the union's class identity and radical politics (see also Tomassetti in this special issue). The challenge to cement represents a deepening of the ecological transformation of building production, which the union seeks to realise through its involvement in the FORMEDIL training centres; in the centre visited, students are introduced to the use of natural materials such as hemp and lime for insulation and building blocks. The call to 'stop building for building's sake' goes further in questioning the very foundations of the industry. This vision presents a deeper and broader transformation alternative to the mainstream policy narrative, a different kind of 'just transition', resonating with radical critiques of ecological

modernisation approaches. The final case below exemplifies a radical approach in practice at local level.

Bottom-up socio-economic and ecological transformation: City Building Glasgow/Scotland

UNITE's policies on climate change and the green transition call for a 'just transition' and broadly echo the ecological modernisation approach (CACCTU, 2017a, b). On energy, the union proposes a balanced energy policy and supports clean coal technology, carbon capture systems, and increased use of renewable energy sources in addition to coal fired power stations and gas, whilst not ruling out nuclear power. It also commits to protecting jobs and workers' interests in old and the new energy sectors, calling for training and redeployment opportunities for those affected, decent jobs and union representation. References to green construction are brief, relating to retrofitting homes, tackling fuel poverty, reducing energy consumption and creating 'green' jobs (UNITE, 2015). Although changing, awareness of the implications of energy efficiency policies for VET and employment appears low.

In Scotland, UNITE has been especially active, organising sustainability training for example for window and door installers and in waste efficiency. UNITE members in Scotland are also involved in a local, socially driven, building organisation, City Building Glasgow, which constructs low energy social housing and represents an alternative employment model to the private sector. City Building Glasgow is a not-for-profit organisation, jointly owned by Glasgow City Council and the Wheatley Group Housing Association, and formed in 2006 from the original Direct Labour Organisation (DLO) or building department of Glasgow City Council. The involvement of the union is organic and direct as most of the 2,200 permanent construction employees of City Building Glasgow are unionised and the Joint Trade Union Council, which includes representatives from UNITE, UNISON and Community, is actively engaged in the organisation and underpins its strong social ethos.

The organisation is unique in directly employing under decent standards such a large construction workforce and, where there is subcontracting, monitoring this through a framework agreement that sets employment and quality standards. This is combined with an in-house training centre providing a comprehensive and acclaimed four-year apprenticeship programme for a diverse intake, including many women and school leavers from disadvantaged backgrounds, with most apprentices staying on as employees; indeed, many senior managers began as City Building apprentices. A favourable environment for meeting energy efficiency standards is thus provided, one in sharp contrast to the fragmented and insecure employment practices that often characterise the private construction sector in the UK. The organisation's LEC schemes include social housing, care homes, schools, hostels built to varying energy efficiency standards, and retrofitting social housing estates, including through the installation of district heating using air source heat pumps, with some support from the Scottish Government as part of efforts to tackle fuel-poverty. City Building Glasgow's highly-equipped manufacturing division, RSBi, has capacity to design, test and produce a range of building materials and internal fittings, is one of the largest supported businesses in Europe, and employs workers across generations of the same family; 60% of the 270 employees have a disability, with access to ongoing support, training and development opportunities.

The organisation is rooted in the local community, committed to quality and inclusivity in employment and training and explicitly driven by the needs of the local population and its workers. This resonates with the working-class environmentalism espoused by Barca and Leonardi (2018) and as such could be viewed as a radical and practical 'just transition' example that challenges the *status quo* in the industry. The not-for-profit ethos, decent and inclusive employment addressing inequalities by gender and disability, and an organisational structure involving unions means that workers actively participate in the adaptation of energy performance requirements. Environmental measures are intertwined with employment and training practices that prioritise workers in a model shaped by the enhancement of labour capacity and

opportunities for direct engagement in the green transition. Here, once again, we see the role of historical precedents; the alternative developed by City Building is underpinned by the traditions of municipal socialism, going together with high levels of unionisation and close affiliations with labour politics.

Discussion and conclusions

Union responses to the EU's green transition strategy in construction reflect the national context, the particular implementation of NZEB policy and unions' position and power. 3F and IG BAU broadly follow an ecological modernisation perspective in their focus on EPBD outcomes, especially job creation potential, environmental benefit, VET required and further government intervention and regulation necessary. 3F's proactively developed policy perspective for a sustainable and circular economy emphasises the transition to renewable energy and, with regard to construction, supports and suggests ways to best implement EU targets. IG BAU's proposals are brief and similarly directed to the implementation and consequences of EU policy. In other words, the construction sector is envisaged to operate much as before, though using different materials and new technologies, with labour acting as participant and facilitator of policy and the unions holding the government to account. As partners of the government and employers, 3F and IG BAU are involved in the formulation of green transition policies, although the close alignment of union proposals with EU strategy raises questions concerning the extent to which they have the power to influence the aims and ambitions of the transition plans (Sweeney and Treat, 2018). The institutionalised relationship with employers and the government formally allows unions to be heard, though the social partnership system is also designed to prevent conflict, so contributing to a consensual response to EU strategy (Gumbrell-McCormick and Hyman, 2013).

In Italy and UK, in contrast, construction unions have little role in developing or implementing EPBD or VET for LEC. They have however a stronger involvement in UK in highly unionised public building construction organisations, with City Building Glasgow providing an example of a labour centred and radical alternative to enacting green construction policies at a local level. In Italy the construction union FILLEA-CGIL, part of the second largest union in Europe and underpinned by its historically radical political identity, challenges the industry to replace high-carbon cement and to stop building for building's sake. This profoundly questions the underlying economic rationale and, together with detailed proposals on the social dimension and the important input into the VET system, represents a radical perspective (Hampton, 2015; Barca, 2018; Barca and Leonardi, 2019).

An apparently limited engagement by construction unions in the climate change agenda and the green transition needs to be seen in the context of long-term decline in union membership in three of the countries and the consequent loss of power to influence policy direction or confront employer dominance (Gumbrell-McCormick and Hyman, 2013). Apart from Denmark, membership rates are low and declining employment, particularly in Italy, extensive subcontracting and the use of agency and migrant labour undermine efforts to improve the situation. Unions' capacity is also limited, with environmental activities relying on a few individuals, enforcing the impression that climate change is not a major issue, a common theme across the four case studies and one resonating with findings on other unions (Felli, 2014; Stevis, 2017). Yet, connecting environmental and employment issues is critical to overcoming such apathy, providing an opportunity for revitalising unions (Lundstrom, 2018).

Addressing the dominant employment and VET model of the sector in many countries is key to a 'just' green transition in construction. The social transformation imperative implied raises questions about how this can be achieved, especially given the weaknesses of union representation. The examples of FILLEA-CGIL and UNITE in City Building Glasgow express alternative visions and practices that emerge in spaces enabling direct worker involvement in reducing the environmental impact of the building industry and providing good quality housing, employment and training to the local community. The cases discussed suggest that such radical perspectives emerge where union strategies are underpinned by a commitment to a broader

political-economic transformation (as in FILLEA-CGIL) or where workers are directly involved (as in City Building Glasgow) in developing an alternative employment and building production model not driven by the interests of private capital.

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ⁱ The Adapting Canadian Work and Workplaces (ACW) research programme is led by Professor Carla Lipsig Mummé of York University, Toronto (see <http://www.adaptingcanadianwork.ca/>) and explores the role of organised workers in combatting climate change with partners from Canada, USA, Europe and Australia.

ⁱⁱ The union was however involved in formulating policy proposals of the global Building Workers International (BWI, 2015).

ⁱⁱⁱ These proposals were developed as part of BROAD, an EU project to improve social dialogue in green construction also involving Germany but were not referred to by IG BAU representatives.