

# A Just Transition for Labour: The Challenges of Moves to a Circular Economy

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## Résumé de l'article

Les propositions pour une transition juste pour le travail ont été principalement limitées aux débats sur les transitions issues des industries du charbon et du pétrole. Cependant, les transitions en cours, notamment dans le contexte de la crise climatique, sont plus étendues. Par conséquent, les débats sur une transition juste à partir des secteurs à forte intensité de carbone devraient être affinés et étendus ; sinon, il y a un risque de gestes rhétoriques et de peu de changements concrets. Parallèlement à ces débats, des directives de planification sont en place pour encourager l'adoption de pratiques d'économie circulaire pour répondre aux questions relatives à la durabilité des matériaux, surtout dans le contexte de la crise climatique imminente. Relativement peu d'attention a été accordée aux implications des relations de travail et d'emploi de la réalisation de l'ambition de plus en plus populaire de réutiliser, recycler et re-fabriquer des intrants matériels, des déchets et des produits en fin de vie. Pour développer ces thèmes, l'accent est mis ici sur l'importance d'une transition juste axée sur les travailleurs bien développée dans l'industrie australienne de la construction de bâtiments, et par implication d'autres industries. L'argument est double. D'abord, une approche efficace basée sur le travailleur signifie des syndicats participatifs et engagés poursuivant des objectifs de transition. Ensuite, les mouvements vers une économie circulaire nécessitent une transition juste pour la main-d'oeuvre de l'industrie, ce qui implique en retour une transition planifiée et inclusive, avec les travailleurs et leurs organisations comme sujets actifs dans le processus. Par conséquent, lorsque les syndicats ne sont pas en position de parler pour l'ensemble de la main-d'oeuvre, différentes stratégies sont nécessaires. Nous proposons que des alliances basées sur les syndicats et d'autres entités qui soutiennent les travailleurs et leurs ménages (tels que les groupes de défense de l'environnement) deviennent essentielles pour la création d'une économie circulaire durable et juste. La politique d'alliance, soutenue par une réglementation gouvernementale appropriée, peut devenir la base pour surmonter la partialité et la fragmentation de la représentation syndicale.

# A Just Transition for Labour: The Challenges of Moves to a Circular Economy

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## **Editorial Note**

Both authors have made real and significant contributions to the manuscript.

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## **Summary**

Proposals for a just transition for labour have been largely restricted to debates about transitions from the coal and oil industries. However, the transitions under way, especially in the context of the climate crisis, are more widespread. Hence the debates about a just transition from carbon-intensive industries should be refined and extended; otherwise, there is a prospect of rhetorical gesturing and little substantive change. Alongside these debates, planning guidelines are in place to encourage the adoption of circular economy practices to address questions relating to material sustainability, especially in the context of the encroaching climate crisis. Relatively little attention has been given to the implications for work and employment relationships of realizing the increasingly popular ambition to reuse, recycle and re-manufacture material inputs, waste and end-of-life products. To address these themes, the focus here is on the importance of a developed worker-focused just transition in Australian housing construction, and by implication other industries. The argument is twofold. First, an effective worker-based approach means participative and engaged labour unions pursuing transition objectives. Second, moves toward a circular economy require a just transition for the workforce. Such a transition must be planned and inclusive, with workers and their organizations as active subjects in the process. Hence, different strategies are required when unions are not in a position to speak for the whole workforce. We propose that alliances based on unions and other bodies that support workers and their households (such as environmental and other advocacy groups) become critical to the creation of a sustainable and just circular economy. Alliance politics, supported by appropriate government

regulation, can become the basis to overcome the partiality and fragmentation of union representation.

### **Abstract**

Proposals for a just transition for labour have been largely restricted to debates about transitions in coal regions. Yet a just transition for labour should apply to all industries. Alongside these debates, planning guidelines are in place to encourage the adoption of circular economy practices to address questions relating to material sustainability, especially in the context of the encroaching climate crisis. Surprisingly, few people have considered the implications of such changes for work and employment relationships. Unless a just transition is pursued, current inequalities in the housing construction industry are likely to intensify and remain embedded. The argument is that moves toward a circular economy in Australian housing construction require a just transition for the workforce. Such a transition must be planned and inclusive.

**Keywords:** just transition; circular economy; decent work; building construction

### **Résumé**

Les propositions pour une transition juste pour le travail ont été principalement limitées aux débats sur les transitions issues des industries du charbon et du pétrole. Cependant, les transitions en cours, notamment dans le contexte de la crise climatique, sont plus étendues. Par conséquent, les débats sur une transition juste à partir des secteurs à forte intensité de carbone devraient être affinés et étendus ; sinon, il y a un risque de gestes rhétoriques et de peu de changements concrets. Parallèlement à ces débats, des directives de planification sont en place pour encourager l'adoption de pratiques d'économie circulaire pour répondre aux questions relatives à la durabilité des matériaux, surtout dans le contexte de la crise climatique imminente. Relativement peu d'attention a été accordée aux implications des relations de travail et d'emploi de la réalisation de l'ambition de plus en plus populaire de réutiliser, recycler et re-fabriquer des intrants matériels, des déchets et des produits en fin de vie. Pour développer ces thèmes, l'accent est mis ici sur l'importance d'une transition juste axée sur les travailleurs bien développée dans l'industrie australienne de la construction de bâtiments, et par implication d'autres industries. L'argument est double. D'abord, une approche efficace basée sur le travailleur signifie des syndicats participatifs et engagés poursuivant des objectifs de transition. Ensuite, les mouvements vers une économie circulaire nécessitent une transition juste pour la main-d'oeuvre de l'industrie, ce qui implique en retour une transition planifiée et inclusive, avec les travailleurs et leurs organisations comme sujets actifs dans le processus. Par conséquent, lorsque les syndicats ne sont pas en position de parler pour l'ensemble de la main-d'oeuvre, différentes stratégies sont nécessaires. Nous proposons que des alliances basées sur les syndicats et d'autres entités qui soutiennent les travailleurs et leurs ménages (tels que les groupes de défense de l'environnement) deviennent essentielles pour la création d'une économie circulaire durable et juste. La politique d'alliance, soutenue par une réglementation gouvernementale appropriée, peut devenir la base pour surmonter la partialité et la fragmentation de la représentation syndicale.

**Mots-clés:** Transition Juste; Économie Circulaire; Travail Décent; Construction de Bâtiment

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# 1. Introduction

Unions are key players in ecological and environmental transition. The idea of a just transition, advocated by many unions, is critical to a consideration of the social and economic transformations occurring in many economies. This idea refers to the conditions for appropriate equitable measures for sustainable decent work and employment. Advocacy of a just transition means recognizing that work transitions should not disadvantage current workers. Rather, such workers should have opportunities to learn new skills, and not suffer displacement, or receive appropriate compensation if their work can no longer be performed. A just transition provides an opportunity for conversations between unions, environmentalists, community members, employers and governments on how best to meet social needs when making critical environmental policy decisions. To enable such engagement, unions must plan and be prepared in ways that will benefit current members and future ones.

Unfortunately, just transition advocacy often is narrowly focused, usually on energy and mining, and specifically on coal regions (Snell, 2018; Weller, 2019). Moreover, while just transition narratives promote “decent work” and worker voice, the actual proposals can be limited to calls for government funding of retrofitting and training and focused on job creation—a central concern of unions about the impact of climate change on workers (e.g., Clarke & Sahin-Dikmen, 2020: 402). In Australia, such limited advocacy also occurs within a context characterised by low union density in the sector, major legal restrictions on collective action and a decade of political resistance to progressive policies on the climate crisis. What is often neglected is the prospect that the steps toward transition can nonetheless upend established employment relationships, as well as challenge job and skill requirements, established practices and even forms of representation.

The argument advanced here is that just transition strategies require, as Weller (2019) argues, consideration of 1) contextualized framing of transition as a narrative; 2) scepticism of multilevel governance approaches; and 3) the importance of deliberative engagement rather than top-down declaration (p. 313). We go farther than Weller in arguing for an approach where unions work within a broad social movement on transition issues, an approach that addresses multilevel governance. We will lay the foundation for such an initiative in industries other than coal mining. The implications are immense. Industry gender gaps, for instance, have become barriers to unions seeking linkages with the climate justice and women’s movements, apart from the ethical question of gender equity. It is in the union members’ interests to fight for diversity and equity in the workplace in order to create socially and ecologically sustainable, well-paid jobs. Demands should also be made not only on employers but also on the state, as government and industry are irrevocably entwined in the context of transition.

We will proceed in six stages. In section one, we review the conceptual focus and clarify the argument, focusing on the concept of just transition. Section two cover the research design and approach. In section three, we present and explain the Australian housing construction industry, its sub-divisions and its workforce composition. In section four, we outline the steps in moving toward a circular economy. A research agenda for a just transition is outlined in section five, followed by a conclusion (section six).

## 2. Conceptual Concerns

The concept of “just transition” is key to understanding the conditions for an equitable move toward a sustainable economy—an emerging policy and research field (Avdiushchenko & Zajac, 2019; Doussoulin, 2020; Genovese & Pansera, 2020). A just transition refers to the aim of shifting from polluting and dangerous practices to one of both protecting the environment and securing decent jobs for workers. Initially, it referred to the current employment arrangements in industries, such as coal and energy, and largely remains so (e.g., COP27a, 2022).

The term “just transition” entered public use during the 1960s in Canada (Galgóczi, 2020: 369). Unions and environmental activists in North America were the first to adopt it to focus on jobs threatened by the transition to an environmentally safe economy (see Burrows, 2001). Specifically, it referred to the current employment arrangements in industries, such as coal and energy, where the shift by workers to a post-carbon situation is managed and supported with no tangible loss of earnings and other employment provisions. This initial approach led to a set of policy recommendations based on the view that “social dialogue is the key” to unlocking enviro-social justice: “Workers, employers and government are active and collaborative partners in developing plans for transition and transformation that simultaneously consider environment, social justice and poverty alleviation” (Smith, 2017: 4). Nevertheless, the substantive approach would remain narrowly focused in relation to labour market sectors (see the insightful article: Weller, 2019).

International agencies, as well as locally based unions and their confederations, have promoted just transition measures (e.g., respectively ILO, 2015; Snell, 2018). Even so, the substantive focus has remained relatively restricted and opaque. At a global level, the International Trade Union Confederation has sought to broaden the remit of the concept, specifically by making just transition clauses part of negotiations on climate change and by arguing for recognition of green jobs, green skills and other aspects of social protection as the economy is adjusted to the realities of climate change (ITUC, 2015). In 2015, the UN agreed to the inclusion of just transition principles in its Sustainable Development Goals, specifically the goal of decent work for all (UNFCCC, 2016). Unions and their supporters successfully had a just transition clause included in the preamble to the Paris Agreement, signed in 2015 whereby the signatories committed to: “*the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities*” (UNFCCC, 2015: 1, highlight in original). Moreover, a Just Transition Declaration (COP26, 2021) was signed at the COP26 Climate Summit (COP26, 2021) and addressed at COP27 (COP27b, 2022).

It is still necessary to identify the conditions for and barriers to implementation of a just transition program across specific decarbonizing industries. The first step is to understand the structure and organization of the sector or labour market of the industry under investigation. A just transition program is critical to achievement of a sustainable economy for two reasons. First, as noted, the likely transformations will impact workers negatively and positively. These impacts raise questions about the possibilities of a just transition. Second, public advocacy of a just transition will draw attention to the origins of the term, and its initial advocacy by unions. With the worsening climate crisis, the need to establish sustainable arrangements have become more urgent, often for entire sectors. While many unions have pursued claims for a just transition, at least for their members, they may not be able to speak on behalf of a whole industry workforce. Again, the initial challenge is to identify the conditions for and barriers to the implementation of a just transition program for all. The first move is to understand the structure and organization of a sector and the labour markets that make up the industry under study. During this step, the challenges to unions are identified. Attention has moved in Australia beyond a focus on coal regions, energy and mining to encompass the housing construction industry. Here, the workforce is unevenly unionized, and sustainable work practices and approaches have come under close study.

### 3. Research Design

We will use a political economy analysis to study the conditions for a just transition to a circular economy in the Australian housing construction industry. The first step is to detail current work, jobs and employment relationships in the industry across its associated value chains: housing, office buildings, hospitals and cultural and sports centres. The next step, which will require further research, is to examine the moves toward a sustainable and equitable circular economy in line with the principles of a just transition. This step means considering the impediments and openings to such a transformation, whether socio-economic, technological or political.

As noted, proponents of a circular economy argue that the new desired relationships can be established by shifting from a linear model of extraction-production-consumption toward a circular one (Genovese & Pansera, 2020: 1). However, labelling the current housing construction economy as “linear” is not necessarily a helpful way to apprehend its current complex “ecosystem” (Pulkka et al., 2016). To understand this multifaceted and layered industry, we will draw on the concept of value chains to describe the relationships between economic actors who deliver a product or service to the end-user. Value chains represent the way that production activities are organized to create, capture and preserve value through the delivery of a product or service.

The available data are fragmented and siloed. Two Australian Bureau of Statistics (ABS) databases are often used to understand the scope and scale of employment relationships across Australian housing construction value chains. ANZSCO is a skill-based classification system (closely aligned with ISCO-8 – the International Standard Classification of Occupations) used to classify Australian jobs by occupation to the 4-digit level, either an employed person’s current main job or an unemployed person’s last job. The industry-based employment classification system (ANZSIC in Australia, which mainly follows the classification system of its international counterpart, ISIC) assigns each individual business to one predetermined industry at the 4-digit level, based on its predominant value-creating activity. At the single-digit level, “Construction” is one of the 19 ANZSIC Industry Divisions. It has three sub-divisions: 30.*Building Construction*; 31.*Heavy and Civil Engineering Construction*; and 32.*Construction Services*. In the following analyses we exclude the second sub-division. Construction Services will be included, as it contains (at the 4-digit level) a wide range of relevant building structures (including housing), installation and completion services: site preparation; concreting; plumbing; electrical; plastering; plumbing; bricklaying; air-conditioning; landscape construction; etc. (see ABS, 2013).

The challenge is to include those jobs that are excluded by the industry classifications (i.e., the ANZSIC profile). The housing construction industry relies on many services that are assigned to other industries—and therefore not recognized as part of the *actual* industry. For example, a separate *Services Industry* category encompasses such core services as architecture, surveying, engineering, law, accountancy, advertising, market research, management and other consultancy and professional photography. Similarly excluded are labour hire companies, unless they supply their entire workforce to the construction industry. Also excluded are value nodes that will become increasingly important in a circular economy, such as off-site production of inputs—ranging from structural steel to prefabricated buildings (ABS, 2013). These limitations, though recognized and addressed by the ABS, must be kept in mind. We will take steps to address them and the associated under-recording.

## 4. The Workforce

Housing construction involves a range of tasks, often valued differentially. Thus, it is essential to consider the forms of work and the ways associated jobs are regarded, including those of labourers, trades, landscapers, architects, designers and planners, as well as material and related suppliers. It also is necessary to review and understand the texture and location of current work in the industry. Such work includes a range of tasks, from design, planning and construction to maintenance. Additionally, it includes making arrangements for utilities, for supply, for approvals and for compliance. Such workers interact and engage with different skilled workers: electricians, brick layers, concreters, chippies (carpenters) and so forth. Indirectly there are relationships with financiers, designers, architects, planners and building inspectors, as well as a range of material suppliers who provide sand and cement for concrete and so forth. Each job category is subject to employment contract regulation, often in disconnected, partial and inadequate ways.

Complicating this picture is the value chain activity in processing and manufacturing, for example in the case of modular construction. The prefabricated construction market globally is “expected to grow at a compound annual growth rate of 7.1% from 2020 to 2026 and will reach USD 174 billion by 2026” (Zhang et al., 2022: 1). Australia is expected to have 7.5 % annual growth, from 5% to 15% of the industry by 2025 (Zhang et al., 2022: 1). Such developments will impact the location and hence the formation of core industry workforces on site both in Australia and internationally.

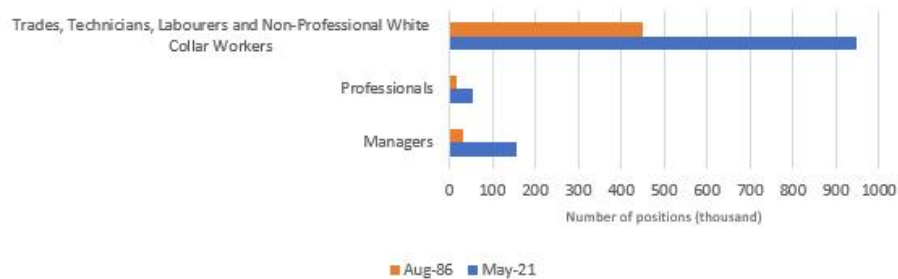
The first task is to understand and explain the structural relations that define the workforce and the way they may be institutionalized via job regulation, policy implementation and other related governance requirements. These relations are constructed iteratively: one output (such as concrete from sand) to another (as the floor of a house) through a complex supply chain (ending up in “waste” that may be used or disposed of). While there is a complexity here, involving direct and indirect workers, the core workforce is structured, occupationally, by gender and ethnicity, including racialized persons, as well as by employment, i.e., self-employed and wage-earning workers.

The building construction industry is hierarchically broken down into three main occupational categories: workers (skilled and unskilled); professional staff; and managerial staff. Its composition has been traditionally dominated by on-site technicians and trade workers, colloquially and historically referred to as white- and blue-collar workers. Hence, it displays a rigorous class-based occupational composition (Figure 1). Since 1986 the number of manual and non-manual workers in the industry has more than doubled from 450,000 to nearly 950,000. Professionals have tripled to over 56,000. Remarkably, the number of managers has increased five-fold to 158,000. Consequently, there has been a rise in the ratio of managers to workers from 11 per 100 in 1986 to 23 per 100 in 2021.



Figure 1

### Occupational Distinctions across the Building Construction Industry ('000s)

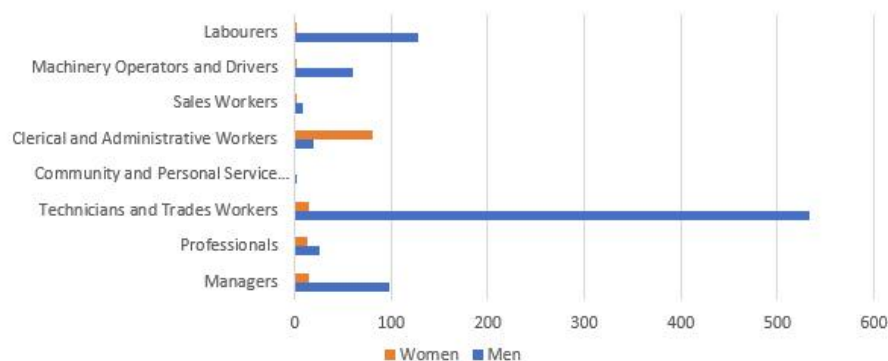


Source: ABS 6291.0.55.001 – Table EQ09

The building construction industry has stubbornly remained one of the most male-dominated industries in Australia (Figure 2). Women occupied less than 13% of the 1.1 million building construction and services jobs in August 2021, a marginal increase from 11% in 2014. Although female workers increased from 100,000 in 2014 to 132,000 in 2021, they were outpaced by the male workers, who experienced larger increases (Figure 3). Over the last three decades, the gender gap has widened across all occupational groupings, particularly in the “worker” category (WGEA, 2019). There has been a disproportionate expansion of professional and managerial jobs and a similarly disproportionate increase in jobs held by male workers. As it now stands, this industry is masculinized, with a sharply defined class-based occupational hierarchy.

Figure 2

### Gendered Composition of the Building Construction Workforce, August 2021

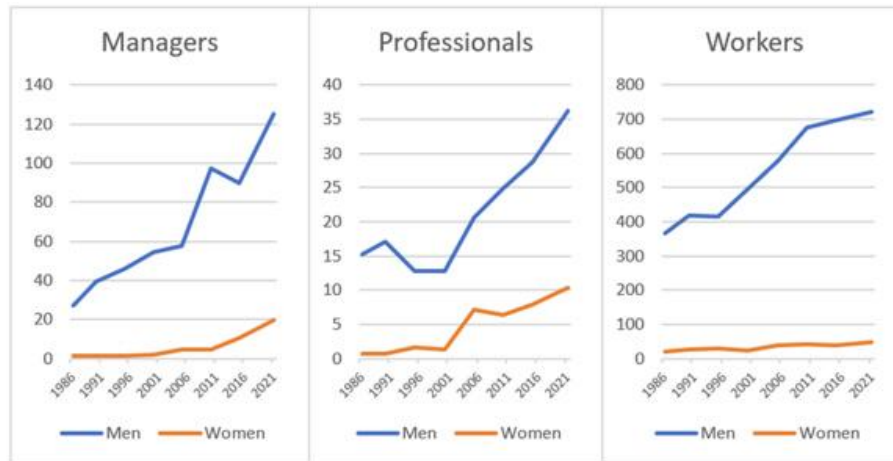


Source: (<https://www.abs.gov.au/websitedbs/d3310114.nsf/home/about+tablebuilder>)



Figure 3

**Changes in Gender Composition of Building Construction Workforce, 1986 to 2021 ('000s)**

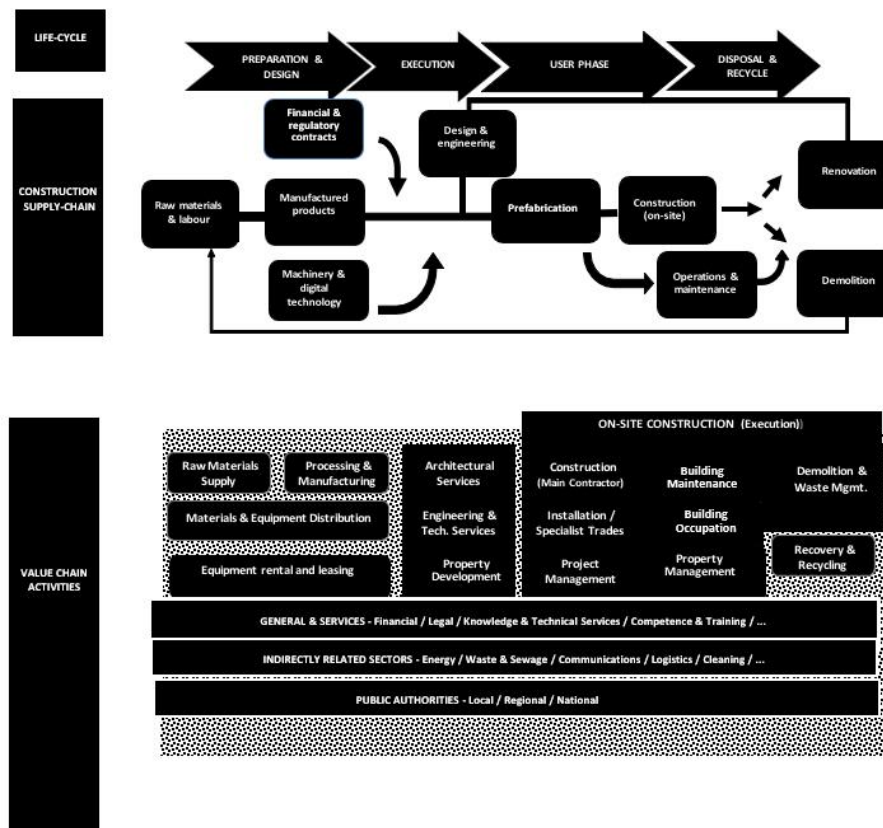


Source: ABS 6291.0.55.001 - EQ09 - Employed persons by Industry division (ANZSIC) and Occupation major group (ANZSCO) of main job and sex, August 1986 onwards

Understanding how industries operate is key to understanding how a circular economy may impact the social relations of the housing construction industry. Building construction is Australia's third-largest employer and is highly connected to other industries, particularly services (Figure 4). Together with interconnected services, it directly and indirectly accounts for several complex labour markets, which often rest on opaque supply and value chains. The jobs range from being highly qualified and highly paid to being often poorly paid and mundane. The latter are labouring and servicing jobs and encompass a variety of labour contracts, many of which are unstable and precarious. It is difficult to untangle and identify the work, jobs and employment within and across housing construction value chains. The value chains range from professional and related jobs to builders as such and then to construction workforces (skilled, semi-skilled and unskilled) with all the services associated with a build (Toner, 2015).

Figure 4

## Relationships of the Building Construction Industry

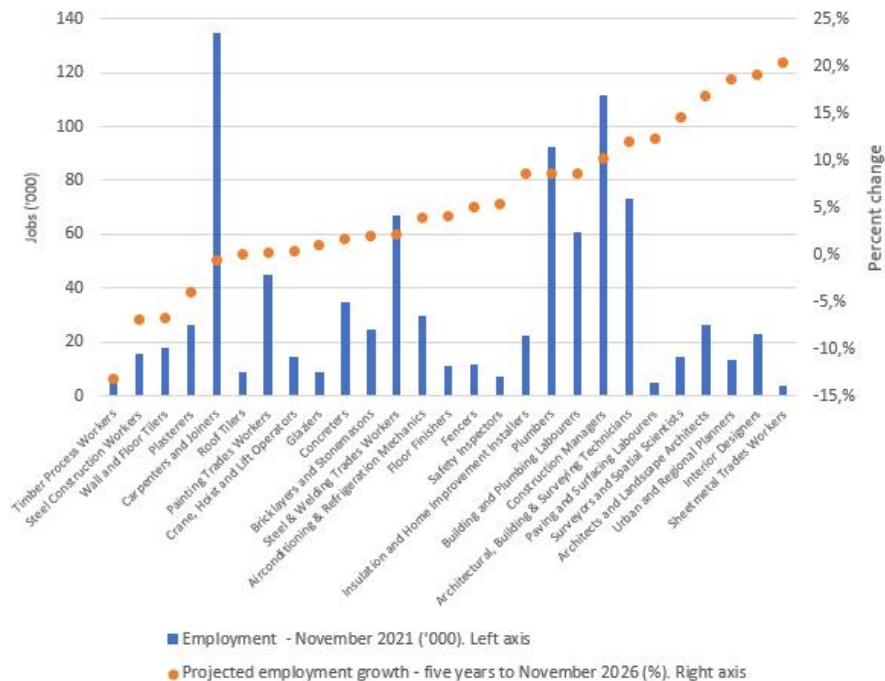


Source: Adapted from Baker et al., 2017: 4.

The labour markets at each stage require consideration. Because each market has its own labour needs, we should examine the skill profiles each of them requires and the capacities of training and learning institutions to support and increase the availability of labour. By drawing on this set of distinctions, it becomes possible to identify and focus strategic interventions, in terms of the numbers employed, the jobs available and the work to be undertaken in a circular economy. To date, however, “business-as-usual” assumptions appear to underlie Australian employment projections for the construction industry. The Department of Employment, Skills, Small and Family Business provides five-year growth projections for 30 key construction-related occupations (Figure 5). Increases of more than 10% are projected mainly for managing, planning and designing. Declines are projected for manual occupations: timber process workers; steel construction workers; tilers; plasterers; and carpenters and joiners.

Figure 5

### Construction-Related Employment (November 2021) and Five-Year Growth Projections



Note: The only available data is at the construction level.

Source: (<https://www.nationalskillscommission.gov.au/topics/employment-projections>)

What is not yet projected (in part due to data methodology limitations) are the anticipated disruptions and reorganizations that may occur in housing construction value chains. It is difficult to identify the shifts toward standardized manufacturing of off-site construction, the investments in research and design, and so on. These shifts are likely to place an increasing emphasis on skills, particularly digital skills, with a concurrent recognition of de-skilling in some occupations (OECD, 2019). This trend can be seen in the industry profile on skills and training. Program enrolments in construction-related qualifications decreased steadily from 197,000 in 2015 to 163,000 in 2019. There was a parallel decline in program completions from 48,000 in 2015 to 39,000 in 2019.

A further complication is provided by the gendered composition of housing construction and services in Australia (Figure 3, above). There is a symbiotic relationship between, on the one hand, gendered economic and political relationships and, on the other, the gendered system of power and social organization. These pre-existing, interwoven structures “may affect the reception and implementation” of any moves toward increasing gender equality (Forsberg & Stenbacka, 2018: 276; see also Forsberg, 2010).

A changing economic climate is likely to impact gender relations *in situ*, making times of economic transformation also an opportunity to forge paths toward gender equality. This focus underwrites the point that moves toward gender equality in, say, the housing construction industry, require

active planning; they do not follow automatically from other development initiatives. The question is how such changes can be achieved in socially just ways, for those in the industry and for those who enter the industry. Such considerations draw attention to the scope and scale of the transformations that may be involved in moves toward a circular economy; they also recognize the current inequalities that define the industry.

These inequalities make moves toward circular economy arrangements complex and complicated. The workforce is marked by division and limited diversity, notably gendered and racialized inequalities and divisions (Dunn et al., 2011). The prevailing profile of housing construction workforces shapes worker voice and often is shaped via unions. But there is a problem. Major building sites in the commercial sector (not housing) tend to be highly unionized, though using only around 14% of the overall sector workforce. One important deterrent to unionization across the sector is the prevalence of sub-contracting. This type of employment is common, usually poorly unionized and, frequently, characterized by sham arrangements that relegate its workers to lower wages and conditions (on sham contracts, see Toner, 2015).

## 5. Toward a Just Transition for Labour

The proposed strategy is to promote a sustainable transformation of the housing construction industry by advocating and introducing circular economy principles and practices (Velenturf & Purnell, 2021; see also Horne et al., 2021 and Horne et al., 2023). But who benefits and loses in a move to circular relations and what are the consequences? We need to understand how such a shift will impact current work and employment arrangements, as well as jobs, their availability, their location and, crucially, who will be implementing such changes. As noted above, these possible developments will also impact worker households.

Transforming the housing construction industry thus requires consideration of the ways the current workforce is involved in the process, and indeed what may impact this workforce positively or negatively. Implementation of a circular economy strategy will pivot from contemporary experiences in construction: maintenance and retrofitting practices; current workforce arrangements; and economic planning approaches. However, these matters have received little policy consideration, and there is not enough recognition that the industry's supply chains are in transition. It will be necessary to consider how direct and indirect workers will be affected by the introduction of a fully articulated circular economy that is locally sensitive, sustainable and inclusive. Increasingly, it will also be necessary to investigate multiple worksites linked by a range of supply chains. Finally, steps will have to be taken to ensure that digitization and related technological innovation will work to the benefit of all, and not the privileged few.

Can there be a just transition toward low-carbon housing construction? As noted above, this shift will require a more diverse workforce with increases probably both in higher-skilled jobs *and* in lower-skilled jobs. Can this change occur without displacement of existing workers and perpetuation of uncertain low-paying employment? More generally, it will involve new business models, different and smarter building archetypes and more extensive industrialized construction methods (see De Groote & Lefever, 2016; also see Horne et al., 2021 and Horne et al., 2023). Again, these developments will not necessarily lead to a just transition for the current workforce. Rather, to move toward a low carbon sector in a just way, there will have to be an agreed-upon, deliberate process of change to a circular economy. This process will include a focus on the "social" dimension of green transitions, such as labour standards and worker agency, alongside a strong government role (Clarke & Sahin-Dikmen, 2020: 402; see also ITUC 2017 & 2019).

During such a transition, the nature of onsite building and construction processes will likely lead to increased installation of whole building components, such as bathrooms and kitchens and walls with electricals, communications and plumbing. This step is really an extension of a process going on for some decades, but it is likely to accelerate with any changes to building codes that require enhanced circular economy arrangements. Factory off-site work is just as skilled as work via traditional construction processes, although different skills may be required. In this situation, contracted construction times will likely be shortened and thus increase the supply risks for builders as they plan construction. In turn, project scheduling and communication skills are likely to become much more important (Clarke et al., 2017).

Those changes will be demanding for the industry. First, the shift to a circular economy will require training the workforce in how to use new materials, how those materials perform in different circumstances, how they function and how to install, maintain, remove and recycle them (Clarke et al., 2019). It will thus be important to map the skills required along the whole process and then develop tailored learning procedures, e.g., teaching architects and planners to work directly with builders to ensure the requirements of a circular economy process. Further, there are likely to be lower levels of waste or residues on-site. For workers, this means shifts in practice: architects and engineers recognizing the value of residue management; those working with materials in the building process becoming aware of the value of intensive use and the need to extend material lifespans (and having the authority and time to do so); and those collecting residue materials doing so in informed ways, so that sourcing is appropriate and decisions on possible use are addressed (see Rose & Stegemann, 2018).

Second, as just indicated many are involved in constructing, facilitating and enabling a circular economy for the housing construction industry. One feature of a circular economy is that it will entail more off-site or factory production of components and modules. Tighter tolerances are required and higher-quality products will be made with specialized manufacturing equipment and using specialized skills. Everyone should play a part in and contribute to this process: local elites; state agencies; to varying degrees, civil society actors; and worker representatives (Pape et al., 2016). Because of the current disconnect between many of these actors, industry plans should provide for appropriate substantive interactions, e.g., between local citizens and planners. Too often, the latter treat local citizens as objects with assumed interests rather than as active participants in a planning process.

Third, the state is a key player in the gendering and racializing of these relationships (Farhall et al., 2021). After all, it underwrites the ways labour markets are shaped and operate, either through active intervention or through laissez-faire non-involvement in these processes (Fudge & Vosko, 2001a, 2001b). This step means that regulation for a circular economy needs to be planned and introduced in a beneficial and deliberative way and not imposed.

To meet the objectives of sustainability, social inclusion and secure, well-paid work, attention also should be given to spatial differences, e.g., between urban and non-metropolitan regions, as well as to the gendered and racialized implications and opportunities for balanced regional development. These steps will require rigorous engagement with the principles of economic and industry-training policies. For employers, this “transition” is driven by intra- and inter-class competition to maximize the creation and extraction of value. Effective unions are equally essential to develop and maintain occupational labour markets in transition. Such labour markets depend on employer associations and unions striking a balance between firm-specific and industry-level training needs. Robust and effective bargaining will be needed to ensure employer commitment to training in the context of the climate crisis (Clarke & Sahin-Dikmen, 2020).

## 6. An Agenda for a Just and Sustainable Circular Economy

The transition to a circular economy will necessarily require changes to employment practices and skill requirements. New occupational profiles and work will emerge “that contribute to preserving or restoring the quality of the environment” (UNEP, 2011: 5) as well as “green” jobs as such (Curtis et al., 2018). But in the absence of a systematic and credible climate policy roadmap in Australia, there will be both demand and supply issues. Creation of decent jobs may be limited by “skills lock-in” (Stroud et al., 2015). Thus, the shift to low-carbon production (and ultimately, a green economy) will require transforming the existing socio-technical regimes to overcome path-dependent “lock-in” (Hassink, 2010). Development of appropriate skills has been identified as key to green transition (Jagger et al., 2012) although it is less researched than those factors that facilitate or constrain transition. Given the power relationships between management and workforces, unions will play a vital role.

Specifically, unions will be key to this transition. The idea of a just transition, and by implication a move toward better work, will provide an opportunity for conversations between unions, environmentalists, community members, employers and governments on how best to balance ecological and social needs (e.g., Snell, 2018: 561; see also Wales TUC Cymru, 2021). Unions in particular must be prepared and plan for such policy engagement. Examples of such preparation in Australia are only beginning to emerge (see Briggs et al., 2021; Mercier, 2020; MUA, 2022; Snell, 2018; Sheldon et al., 2018; Wiseman et al., 2017). Moving toward a circular economy in Australia’s construction industry would therefore benefit from research that takes the above profile of the current workforce to the next stage, where all parties will explore the conditions for a just transition and recognize the lead role of unions as well as acknowledging the relatively low union density, particularly in the housing construction industry. While such engagements have been spoken of as the condition for social dialogue (Snell, 2018: 560-561), there is little evidence of such a commitment, or indeed practice, from and by employers and unions in Australia. This European practice is uncommon in Australia with its more adversarial legal and social environment.

To date, and as a further complication, there has been a perceived clash between unions defending their members’ jobs and environmentalists defending the planet (Markey, 2020: 104; Snell, 2018). As these authors state, this is a false political/industrial dichotomy, particularly when both are viewed as social movements (Moody, 2020; see also Fairbrother, 2008). We argue that any mechanical counter-positioning of “jobs versus the environment” fails to recognize the powerful synergies available to revitalize both trade union strategy and the environmental movement. The challenge is to go beyond the idea of a just transition as a union-centric position to work out a core “climate justice” strategy that empowers both the environmental movement *and* the labour movement (SS4C, 2021).

More broadly, unions have mobilized for a just transition toward a greener economy. The Victorian Trades Hall Council (VTHC - major provincial confederation for the State of Victoria) has issued guidance to unions and others (e.g., First Nations people and the environmental movement). The Trades Hall Council seeks to promote green awareness, mobilize activity on green matters and pursue a just transition from the current state to a future, green one (VTHC, 2020). This strategy stresses the importance of stimulating “thinking and action” (narrative of understandings – p. 9). This guidance is made in the horrific context of “climate-related disasters such as drought, flooding, bushfires and the loss of coral reefs globally” (p. 10) experienced most acutely in Australia over the last few years. It will necessarily involve “workers and their communities,” “First Nations and migrants,” and contribute to the “eradication of gender inequality” (p. 15). Moreover, Australian electrical, manufacturing and maritime unions have collaborated with various research bodies to promote just transition strategies more concretely (Briggs et al., 2021; MUA 2022).

Similar efforts are being made internationally. The Wales TUC Cymru, for example, has developed a toolkit to use in union training courses and to support action in workplaces and communities. It is aimed at workplace-based representatives, including “green representatives”; it comprises bargaining checklists, action plans, case studies and a range of resources on the pursuit of workplace sustainability: “work-related travel, resource efficiency, procurement, energy use and many more topics” (Wales TUC Cymru, 2021: p. 5 for the full list of resources and for details on six case studies). Unions in other countries have also put forward ways of addressing climate change and a just transition (USA and the Blue-Green Alliance; UK the Greener jobs Alliance; and the Green Deal promoted by the European Commission – VTHC 2020: 19). According to the VTHC, new jobs in sustainable industries “are not automatically better jobs than those in fossil fuel industries” (p. 19). This is a challenge for workers and their unions in all industries.

There thus remain four areas for further detailed enquiry and deliberation. First, the debates about a just transition should take centre stage in the reflections on socio-economic trends and developments in relation to work, jobs and employment (Markey & McIvor, 2019; Snell, 2018). Second, in moves toward circular economy arrangements in any industry, it is important to continue exploring the conditions and parameters for achieving “better work.” These issues are at the forefront of the research agenda promoted by the CRIMT Institutional Experimentation for Better Work Partnership Project (Murray et al., 2020). Third, such debates have a broader import. They are crucial to informing the strategies and tactics for the policies needed to avert ecological catastrophe, such as a movement from below that joins workers with climate activists. Fourth, there is a strong case for revisiting the state’s role and place as both a regulator and a facilitator of the changes needed to build a circular economy. Given the pandemic and the outcomes of the 30-year-plus experiment with neoliberal approaches to governance, the current moment strengthens the argument for a sharp political reset toward direct state intervention to decarbonize industries and toward active engagement of workers, their households and communities in the process. Strong engagement in key practices, such as training and reskilling those workers who will be hurt by this intervention (Toner, 2014) are likely to succeed if politically underpinned by a jobs guarantee and decent support for displaced workers (VTHC, 2020).

## 7. Conclusion

In the move toward decarbonization and the establishment of a circular economy, we must ensure a just transition for all involved in the industry, directly and indirectly. To that end, we must understand the impact on those currently employed. It will be necessary not only to map the positions and skills of those involved but also to hear their voices by bringing unions into the process of change, as well as professional advocacy groups and the like. Without recognition of everyone’s concerns and interests, a move toward a circular economy will likely produce partial and incomplete results. Unions must play a lead role as the principal originator and advocate of just transitions for workers during industrial change. They are the institutional voice of workers in the housing construction industry.

The housing construction industry is marked by division and inequality. While not unusual in this respect, its workforce does display class, gendered and racialized inequalities. To implement the arrangements for a just transition, we need to address these current inequalities by examining the distribution of work (tasks), jobs (positions) and employment (wage relationships) in this industry. Employment, especially in domestic housing construction, is characterized by extensive sub-contracting, which can inhibit unionization.



To achieve the goal of a progressive circular economy, via a just transition, there are three related steps. First, attention must be given to necessary changes in employment practices and skill requirements. The process is complicated and means addressing complex work and employment relationships, with long histories. Second, union advocacy is crucial. Without such advocacy, there will likely not be a comprehensive effort to achieve a just transition toward a circular economy in this and other industries. The power relationships between management and workers are a major inhibitor. Third, the state is a crucial actor in this process, ensuring the regulation and training that will make the transition just.

A just transition in this and other industries requires a collective engagement by workers in all jobs, via their unions, providing of course that union leaders and activists embrace the pressing challenges facing them. This action in turn may mean allying with other advocacy groups, such as those opposing climate change. These matters will not be settled via the traditional and often inhibitory practices of industrial relations. They will necessitate embracing environmental politics and policies, active promotion of decent work and comprehensive commitment to inclusive forms of representation and engagement. This means overcoming past separations and divisions, industrially and politically. The outcome will be a just transition that ensures decent work for all.

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