

# How to promote gender equity in the green economy

The realities of climate change have prompted many nations to strive for greener industries. This includes the development of new technologies which are less carbon-intensive, and the overhaul of sectors such as energy and transportation where women are traditionally poorly represented in the workforce. As the green economy develops, thousands of jobs will be created, but it is unlikely that women will have equal access to these opportunities. **Dr Bipasha Baruah**, Professor and Canada Research Chair in Global Women's Issues, Western University, Canada, examines the reasons for this inequality.



Countries around the world are trying to make their economies less carbon-intensive by creating new green jobs, developing less polluting technologies, and by retrofitting existing sectors such as forestry, agriculture, tourism, manufacturing, water and waste management, construction, transportation and energy production (ILO, 2011). A gendered analysis of such green growth and development strategies reveals two blind spots. First, women are known to have weaker access to new technologies almost everywhere in the world (Hafkin and Huyer, 2006) so there are likely to be unequal access issues inherent in the transition to low-carbon economies. Second, it is well-established not only that 70 percent of the world's poorest 1.3 billion people are women and children but also that women are already very poorly represented globally in some of the sectors that are critical to the green economy. Women account for nine percent of the global workforce in construction, 12 percent in engineering, 15 percent in financial and business services, and 24 percent in manufacturing. Women have also long been marginalised in the energy sector, where they constitute less than six percent of technical staff and below one percent of top managers (UN Women, 2012). Without appropriately targeted training, education, apprenticeships, employment placement, financial tools and supportive social policies, transitioning to a green economy may exacerbate existing gender inequities and hinder global human development goals. Dr Bipasha Baruah provides recommendations for optimising women's

employment in four sectors that are critical for the Canadian and global green economy, namely, energy, manufacturing, construction and transportation.

## HIGHLIGHTING INEQUALITIES

More than 50 percent of university students in Canada are women. So is half the labour force. But women remain severely underrepresented in sectors that are going to witness dramatic growth in the transition to a green economy. For example, only 25 percent of those employed in clean energy, 23 percent in transportation, 12 percent in construction, and 28 percent in manufacturing are women. Within these sectors, women are much more likely to be employed in lower-paid clerical and administrative positions than in high-skilled technical or managerial positions.

Most green initiatives in Canada have been driven by the private sector, municipalities and provincial governments. The federal government has, at least until very recently, not played an active role in framing and implementing effective policies to enable the transition to a low-carbon economy. Despite growing evidence of the potential for the green economy to generate a much larger volume of employment than the "brown" (fossil-fuel based) economy, even organisations committed to advocating for equity and social justice in environmental sustainability in Canada have never specifically addressed gender inequity.

## STICKY FLOORS AND GLASS CEILINGS

Most future green job creation in Canada will be in occupations in which women are currently underrepresented, such as engineering and the skilled trades. A Statistics Canada study found that in 2007, women only accounted for one to two percent of completions in apprenticeship training in major trade groups (McMullen et al. 2010). Another report published by Statistics Canada shows that in 2011, women comprised

just 23 percent of engineering graduates aged 25–34 (Hango, 2013). Since workers are likely to transition from jobs in the "brown" economy (which is heavily male dominated) to the "green," it is inevitable that women will also be underrepresented in green jobs unless gender equity in employment is planned and implemented proactively. Recent media reports confirm this trend, indicating, for example, that laid-off oil and gas workers in Alberta are beginning to find employment in the clean energy sector (Bickis, 2016).

The conversation about gender equity or social justice (more broadly) in Canada's green economy is at best incipient and tokenistic. Raising awareness is therefore urgent and critical. Canada performs better than the OECD average for the gender employment gap (6.1 percent compared to 11.7 percent), but the gender wage gap in Canada is above the OECD average (19 percent compared to 15.5 percent). Not only does Canada have a bigger gender wage gap than other OECD countries, but women are also severely underrepresented in all high-growth green sectors (Thirgood et al. 2017).

**Without appropriately targeted training, education, employment, and financial and social opportunities, transitioning to a green economy may exacerbate existing gender inequities and hinder global human development goals**

It is estimated that 200,000 new jobs will be created in the Canadian construction industry over the next decade but women only account for four percent of new registrants in the construction trades (Status of Women, 2017). There is also presently an estimated shortfall of 20,000 employees in manufacturing that could be filled more easily if women were part of the manufacturing workforce in larger numbers. New green jobs in manufacturing will be linked to the use of clean processing techniques and pollution control equipment. The transportation sector will also contribute substantially to green employment through new infrastructure, fuel-efficient

vehicles and the expansion of public transportation systems.

The barriers and opportunities women face in energy, transportation, construction and manufacturing are similar because they are all non-traditional occupations for women. Our research points to three major challenges for women in these fields: lack of information about employment, gender bias and gender stereotyping, and masculinist work cultures and working conditions. Women encounter both "sticky floors and glass ceilings" in these fields. In other words, careers may never get off the ground because of persistent and confining stereotypes of feminised roles. And the absence of role models and gender-balanced initiatives makes moving up the ranks more challenging for women.

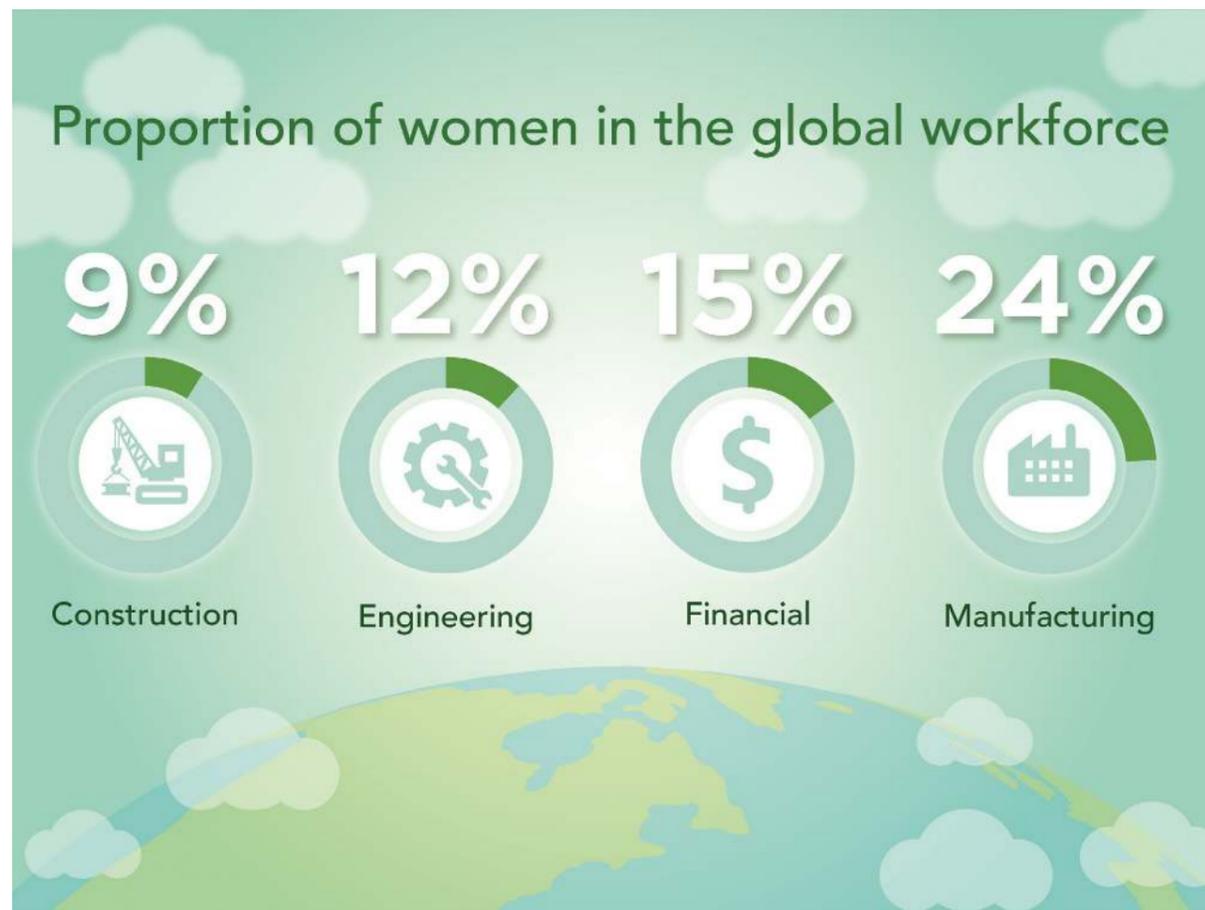
## OFFERING SOLUTIONS

We need targeted goals, monitoring and enforcement to improve women's access to jobs in the growing green economy. Much of the workforce in low-carbon construction, manufacturing and transportation will come from the fossil-fuel dependent versions of these sectors. We must start planning for equity in the "brown" versions of these sectors if we expect to see any changes in the green economy. Careers in these fields must be targeted more specifically to women and girls through avenues such as recruitment sessions and employment fairs.

Girls must be introduced at an early age to the potential in these fields. Encouraging young women to study science, technology, engineering and math (STEM) is critical since most technical jobs in these sectors require STEM training.

Apprenticeships are often a requirement before a worker can secure full-time employment in these fields. Women have difficulty completing apprenticeships because the processes for entering them remain highly informal and unregulated.

Additionally, many apprenticeships are either unpaid or pay a nominal stipend. This is also a major barrier for many



workers. Having the opportunity to learn a trade while supporting a family is crucial in breaking down barriers many poorly represented groups, including women, face in accessing skilled employment. Fair and equitable access to paid apprenticeships is critical for promoting equity in green jobs.

Since women are already underrepresented in key sectors of the green economy, growth in these sectors may further exclude women if proactive measures are not adopted. Based on women's current patterns of participation in jobs and training in these sectors, almost none of the skilled green jobs created in the next ten years, would go to women. This highlights the dire need for equity programmes and goals that are monitored and enforced. Canada needs all stakeholders – government, civil society organisations, corporations, trade unions, labour associations, public policy institutes and think-tanks – to work together to ensure equity in access to employment in the green economy.

**The barriers and opportunities women face in energy, transportation, construction and manufacturing are similar because they are all non-traditional occupations for women ... women encounter both “sticky floors and glass ceilings” in these fields**

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# Behind the Bench

## Dr Bipasha Baruah

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#### Bio

Bipasha Baruah is the Canada Research Chair in Global Women's Issues and a tenured full professor in the Department of Women's Studies and Feminist Research at Western University. Dr Baruah conducts

interdisciplinary research on gender, development and globalisation; women and work; and social, political and economic inequality.

#### Collaborators

**Sandra Biskupski-Mujanovic**, a PhD student in Women's Studies and Feminist Research at Western University, provided very able assistance on this research project.

#### Funding

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#### Research Objectives

Dr Baruah's research programme is aimed broadly at understanding how to ensure that a global green economy will be more gender equitable and socially just than its fossil-fuel based predecessor.

## Q&A

### What are the major reasons for women's underrepresentation in STEM fields?

I would say that there are three major reasons for women's underrepresentation in STEM fields. First, there is systemic misperception and devaluation of women's scientific and technical abilities. Women in technical fields are deemed less competent than men even when they are better qualified than their male peers. Second, public policies and corporate policies to enable equity in training and employment in STEM are either very weak or absent in many contexts. And finally, the persistence of patriarchal social norms and assumptions about breadwinning and caregiving make it difficult for women to assert themselves at par with men in these fields.

### How can we enable more women to succeed in these fields?

It is extremely important for governments to create policy frameworks to ensure gender equity in STEM employment. We see promising results in countries that have done this. Brazil, for example, has succeeded in enabling women's

substantial participation in STEM through progressive social policies that include state-funded tuition and scholarship awards at the undergraduate and graduate level. Equity and access policies that have been adopted by other countries are often linear and positivist. They do not seek any special privileges for women and simply demand that everyone receive consideration without discrimination based on sex. They are inadequate because they fail to address the wide range of social and institutional factors that prevent women from succeeding, and because they do not demand preferential hiring and promoting practices to correct historical and current inequalities. More comprehensive and finely-tuned state and corporate policies that take structural constraints into consideration will optimise women's entry into and advancement in STEM fields.

### Are similar patterns seen worldwide with regard to the marginalisation of women in certain industries?

The professional STEM community in OECD countries may not be optimally leveraging the message that these fields are prestigious and socially important. By contrast, much larger numbers of middle-class women study engineering and other technical fields in emerging economies

like Brazil, India and China, at least partially because they are perceived as well-paid high-status occupations. In 1998, women accounted for 43.3 percent of engineers in Russia. By 2002, that number had dropped to 40.9 percent. And the numbers have continued to further decline. I use the Russian example not to advocate a return to Soviet-style central planning but rather to emphasise the value of state initiatives aimed at improving representation and removing barriers for career advancement for women in STEM fields. The Baltic nations of Estonia, Latvia, and Lithuania, which were formerly part of the USSR but joined the EU in the 1990s, revealed similar patterns of comparably high but declining rates of participation by women in engineering and technology fields. Female professional and technical workers in Estonia still outnumber men two to one. Estonia offers significant tuition incentives to draw high-school graduates into fields such as engineering. The World Economic Forum still identifies Estonia as the country with the highest per-capita number of female engineers, even though, as in Russia, the numbers of women joining the field in Estonia have declined over the 1990s and 2000s.