

Creating and Optimizing Employment Opportunities for Women in the Clean Energy Sector in Canada

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KEY FINDINGS

This research project identified opportunities and constraints for women's employment in renewable energy (RE) and energy conservation in Canada. It synthesized existing data on women's employment in renewables in Canada while drawing upon the PI's previous research in other industrialized, emerging and developing economies to identify promising economic programs, financial instruments and public policies that Canada could draw upon to shape employment equity in its energy policies and practices. Our findings reveal that there are glaring gender inequalities in employment in renewables in most countries in the world, including Canada, as well as some counterintuitive trends - for example, the fact that developing countries and emerging economies are, broadly speaking, creating much larger volumes of employment for women, even if the jobs created are poorly paid and precarious. On the other hand, in many industrialized countries (Canada is a good example) there is a lot of attention paid to the technologies and financing for renewables but very little attention yet being paid to the employment equity and social justice implications of transitioning to renewables. Our findings reveal the need not just for specific employment equity policies to address the gender gap in both fossil-fuel based and renewable energy employment but also wider socially progressive policies as well as shifts in societal attitudes about gender roles in order for women to benefit optimally from employment in the energy sector. Restructuring paid employment in innovative ways – through, for example, the creation of more part-time jobs and arrangements like work-sharing – while expanding social protection nets and delinking them from employment status, have been suggested in some industrialized countries as a way to accomplish economic security, environmental protection and gender equity. However, without more transformative social changes in gender relations, our findings suggest that such strategies may reinforce rather than challenge existing gender inequities both in paid employment and in unpaid domestic labour. The vast majority of renewable energy 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 renewables. Despite a growing conversation about the potential for renewables to generate a larger volume of employment than fossil fuels, even organizations committed to advocating for employment equity and social justice in debates about environmental sustainability in Canada (Blue Green Canada and Green Skills Network are good examples) have never specifically mentioned or addressed gender inequity. The conversation about gender equity or social justice (more broadly) in Canada's green economy is at best incipient and tokenistic. Raising awareness about these issues is therefore urgent and critical. Since jobs in RE tend to be dispersed across different sectors of employment (such as construction, manufacturing, installations, fuel processing, operations and maintenance), collecting specific employment data on RE and energy conservation would be particularly valuable for informing employment equity policies. Sex-disaggregated data on employment in renewables is extremely spotty everywhere in the world. This makes analyzing trends and making comparisons challenging. Although the employment effects of RE investment, in particular, are increasingly gaining prominence in the debate on renewables in Canada, specific analytical work and empirical evidence on this important subject remain extremely limited. Further research aimed at documenting the gender gap in energy employment as well as informing strategies for promoting employment equity would be valuable. Having access to sex-disaggregated employment data on specific renewable sources such as wind, run-of-river hydro, solar, biomass and geothermal would enable us to better understand trends as well as to propose policies and interventions for promoting employment equity. Without data, there is no visibility. And without visibility, there is no policy priority. An assessment of data availability on RE employment in different industrialized countries suggests that Canada lags behind its OECD counterparts not just in framing and implementing policies for gender equity in RE employment but also in data collection and analysis. It is crucial that we conduct more policy-relevant empirical research on this topic in a consistent and sustained manner.

EXECUTIVE SUMMARY

This research project identified opportunities and constraints for women's employment in renewable energy (RE) and energy conservation in Canada. It synthesized existing data on women's employment in renewables in Canada while drawing upon the PI's previous research in other industrialized, emerging and developing economies to identify promising economic programs, financial instruments and public policies that Canada could draw upon to shape employment equity in its energy policies and practices. Our findings reveal that there are glaring gender inequalities in employment in renewables in most countries in the world, including Canada, as well as some counterintuitive trends - for example, the fact that developing countries and emerging economies are, broadly speaking, creating much larger volumes of employment for women, even if the jobs created are poorly paid and precarious. On the other hand, in Canada and other OECD countries, there is a lot of attention paid to the technologies and financing for renewables but very little attention yet being paid to the employment equity and social justice implications of transitioning to renewables. Our findings reveal the need not just for specific employment equity policies to address the gender gap in both fossil-fuel based and RE employment but also wider socially progressive policies as well as shifts in societal attitudes about gender roles in order for women to benefit optimally from employment in the energy sector. Restructuring paid employment in innovative ways – through, for example, the creation of more part-time jobs and arrangements like work-sharing – while expanding social protection nets and delinking them from employment status, have been suggested in some industrialized countries as a way to accomplish economic security, environmental protection and gender equity. However, without more transformative social changes in gender relations, our findings suggest that such strategies may reinforce rather than challenge existing gender inequities both in paid employment and in unpaid domestic labour.

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This knowledge synthesis included both scientific and practitioner knowledge sources. The peer-reviewed scholarship on this topic is currently very limited but there is a significant amount of “working knowledge” available from practitioner sources. Drawing upon and amalgamating both types of knowledge was important to better enable policymakers and other end users of this research to fully appreciate the nature, magnitude, nuance and complexity of the issues involved.

Although sex-disaggregated data on RE employment in industrialized countries is scarce, the numbers we are able to put together points to the severe underrepresentation of women. The available data from Canada, US, Spain, Germany and Italy indicate a general trend of women in the RE sector being employed mostly in less well-paid non-technical occupations. The greatest representation of women in RE in OECD countries is in sales, followed by administrative positions and then engineers and technicians. In absolute numbers, the largest sources of RE employment for women in industrialized countries are solar photovoltaics, solar heating/cooling, wind power, biomass and biofuels. The

underrepresentation of women in RE in many OECD countries is part of a bigger problem of the underrepresentation of women in STEM fields. There is an obvious economic benefit for women who choose to pursue these paths. While wage inequality also exists in STEM jobs, it is a smaller wage gap relative to men. Women in STEM jobs earn 33 percent more than those in non-STEM occupations. The gender wage gap in STEM jobs is roughly 14 percent, while the gender wage gap for non-STEM jobs is 21 percent. Findings from this research suggest that the professional community of engineers in Canada and other OECD countries may not be doing optimally well at leveraging the message that engineering is prestigious and socially useful work. By contrast, much larger numbers of middle-class women study engineering and other technical fields in some developing countries and emerging economies, at least partially because they are perceived as well-paid high-status occupations. Although women may continue to experience glass ceilings and employment discrimination in various forms in such countries, recruitment, especially for entry-level positions is not a challenge because of the large numbers of women earning engineering degrees.

A review of the available literature provides some indication of the proximate determinants and structural factors that may either impede or facilitate women's meaningful participation in the RE sector in Canada specifically, and in industrialized countries more broadly speaking. We have organized these opportunities and constraints under the following themes in this report:

- societal and self-misperceptions about women's technical abilities as well as about careers in technology;
- opportunities and constraints associated with self-employment and entrepreneurship;
- the pros and cons presented by part-time work and arrangements like job sharing;
- the limitations and opportunities women face in managing work-related travel;
- the potential for significant employment generation in the RE sector and simultaneous skill shortages;
- and the importance of public sector involvement in framing policy to enable employment equity in RE.

It is important to emphasize that the line between opportunity and constraint is quite fuzzy since some constraints may potentially become opportunities with appropriate policy interventions, shifts in societal attitudes, and economic and political changes. The implications of part-time work and job sharing, which we include in this report, do not apply solely to women in the RE sector. These are growing employment trends around the world and have deep implications for gender equity in all fields, not just in renewables. We include it for discussion in this report because it is important to understand women's access to employment in renewables within the context of broader trends in employment and social policy.

Reports from around the world warn of a looming skills gap as industrialized and emerging economies retool their existing industries and seek out new opportunities. In virtually all areas of energy development, there are skills shortages and calls for additional training. These shortages cover a wide range of different occupations, from engineers and architects to skilled trades, equipment operators, technicians and even construction laborers. Skills shortages also vary, regionally and by energy sector. Most of the shortages are for jobs in conventional energy production. However, the renewable sector is

also experiencing significant shortages of qualified personnel. Although the skill shortages present challenges for labor supply, they also represent an opportunity to train and recruit women, visible minorities, Aboriginal peoples, new immigrants and other groups that have historically been marginalized in the energy sector in Canada.

The conversation about gender equity or social justice (more broadly) in Canada's green economy is at best incipient and tokenistic. Reports that do highlight opportunities to employ underrepresented groups, including women, in the RE sector stop short of calling for the kinds of policy approaches and concrete action required to ensure equity. 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 1-2 percent of completions in apprenticeship training in major trade groups. Another report published by Statistics Canada shows that in 2011, women comprised just 23% of engineering graduates aged 25-34. Since workers are likely to transition from jobs in the "brown" economy (which is heavily male dominated) to the "green," it is a self-fulfilling prophecy 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 that laid-off oil and gas workers in Alberta are beginning to find employment in the RE sector.

Emerging research in the U.S. that evaluates initiatives specifically aimed at training women for entry-level positions in the green economy report low levels of success in ensuring women's long-term employment in the occupations for which they were trained. Comparable assessments of gender sensitive green job initiatives in the Canadian context have not been conducted - presumably due to the absence, to begin with, of gender-equity based initiatives in the RE sector. Past attempts to train women on social assistance in Canada in the skilled trades showed limited success in securing the long-term employment of women in their respective trades. These findings confirm the need not only for proactive equity policy, but also for policies that support work/life balance, such as affordable, universal child care and flexible working arrangements, as well as broader changes to workplace culture in traditionally male-dominated fields. Women can gain optimal traction from RE initiatives only if there are wider socially progressive policies in place. Since women's ability to take advantage of new energy-related employment options is, to begin with, often constrained by social barriers that limit their access to certain types of education and training, employment, credit and childcare, for example, it is crucial that social policies go beyond energy sector planning to optimize economic opportunities for women.

Sex-disaggregated data on employment in renewables is extremely spotty everywhere in the world. This makes analyzing trends and making comparisons challenging. Although the employment effects of RE investment, in particular, are increasingly gaining prominence in the debate on renewables in Canada, specific analytical work and empirical evidence on this important subject remain extremely limited. Further research aimed at documenting the gender gap in energy employment as well as informing strategies for promoting employment equity would be valuable. Having access to sex-disaggregated employment data on specific renewable sources such as wind, run-of-river hydro, solar, biomass and geothermal would enable us to better understand trends as well as to propose policies and interventions for promoting employment equity. Without data, there is no visibility. And without visibility, there is no policy priority. An assessment of data availability on RE employment in different industrialized countries suggests that Canada lags behind its OECD counterparts not just in framing and implementing policies for gender equity in RE employment but also in data collection and analysis. It is crucial that we conduct more policy-relevant empirical research on this topic in a consistent and sustained manner.