

Strategically engaging women in clean energy solutions for sustainable development and health

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Related Sustainable Development Goals

- Goal 3: Ensure healthy lives and promote well-being for all at all ages
 - Goal 5: Achieve gender equality and empower all women and girls
 - Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all
 - Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
 - Goal 12: Ensure sustainable consumption and production patterns
 - Goal 13: Take urgent action to combat climate change and its impacts
 - Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
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The Challenge

There are three billion people, or 40% of the world, that still relies on biomass for cooking, lighting, and heating (WHO, 2014). This has led to a significant burden for the planet and for those living on it. Unsustainable biomass collection depletes forests, contributes to soil erosion and loss of watersheds, placing additional pressure on agricultural productivity and food security. Searching for and using solid biomass fuels places women and children's safety at risk and jeopardizes human health and household and community air quality through toxic smoke emissions. In regions such as sub-Saharan Africa, where the lack of access to clean energy solutions and electrification is particularly significant, nearly a third of the urban population and the majority of the rural poor are using biomass for cooking

and heating in traditional open fires (GACC, 2014).

Like nearly all global environmental problems, the consequences of reliance on biomass for cooking and lighting impacts women significantly more than men (ICRW 2010). Women and children, usually girls, spend several hours per day gathering fuel, increasing their daily drudgery and increasing their vulnerability to sexual violence. As forests are degraded, the energy burden increases and women are forced to walk even further to collect fuel or use more toxic fuels, such as dung or trash. Risks for displaced and refugee women are even more alarming as 75% - 90% of the rapes reported occur when women leave camps in search of cooking fuel (WRC, 2011).

The health risks of household air pollution are substantial. As the primary managers of household energy, women are disproportionately at risk for harmful emissions exposure every day. Recent global health estimates show that

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household air pollution leads to over 4 million deaths annually, while millions more suffer from cancer, pneumonia, heart and lung disease, blindness, and burns (Lim, 2012). Approximately 300,000 of the deaths, 88% of which are women, are attributed to burns resulting from traditional cooking fires (Lim, 2012).

While women and girls bear the brunt of clean energy poverty, their central and pivotal role in sustainable development is becoming increasingly clear (Klugman et al, 2014; UN Women 2014). The strategic engagement of women in the clean energy sector is directly in line with the landmark 1987 report of the World Commission on Environment and Development which states, “sustainable development is economic, social and environmental development that ensures human well-being and dignity, ecological integrity, gender equality and social justice, now and in the future.” Building upon the synergies between gender equality, environment, economics and health are critical as we move forward on the path towards sustainable development.

The Opportunity

Clean energy solutions positively impact women’s well being

This past decade has seen a resurgence of technological advancements in commercially available solar lighting as well as improved biomass cookstoves that allow for a range of alternative fuels. As women are the primary consumers and users of clean energy products, it is imperative that they are well integrated into the process of designing solutions and engaged throughout the value chain to increase the likelihood that products adequately fulfill their needs and will be used.

Data on clean energy solutions such as efficient cookstoves have been shown to result in significant social and economic benefits for

adoptees and their families. With a standard improved cookstove, for example, one can reduce cooking time by 50% and increase fuel efficiency by 30%. High efficiency cookstoves lead to even greater benefits in time and fuel savings and can significantly reduce harmful emissions. The additional time saved in fuel collection and cooking has been shown to result in more than 60 free days a year that are now available to women for work or to care for their families. The fuel savings often go towards household needs. A recent study in South Asia reported that improved stove users were more likely to send their children to school more often than traditional stove users. Adoptees also reported decreased drudgery, improved health, and time savings. Field studies from the Global Alliance for Clean Cookstoves (GACC, 2014) have documented that the additional time savings from collecting fuel and cooking led to greater time spent caring for children, increased ability to pursue income-generating or educational opportunities, and/or leisure activities and rest. While there are several large-scale health trials underway, there is evidence of health impacts as noted in the RESPIRE study in Guatemala that found a 50% reduction in smoke exposures associated with an 18% reduction in physician-diagnosed child pneumonia (Smith et al., 2011).

Access to kerosene, LPG, electricity, and improved biomass stoves appear to have a significant impact in terms of reducing arduous tasks performed by women, especially in rural households and humanitarian settings. For example in the humanitarian setting of Darfur, Sudan, women generally report significant reductions in the frequency of collecting firewood per week with the use of fuel-efficient stoves. In a UNEP study, the frequency of collection trips was reduced by 50% in North Darfur, 57% in South Darfur and 40% in West Darfur ([UNEP, 2008](#)), significantly reducing the risk of gender-based violence.

Leveraging women entrepreneurs to scale adoption

Micro- and small enterprises play an important role, especially for women, as a means of moving out of poverty. Indeed, women are the fastest growing cohort of entrepreneurs and business owners in many developing countries (Brush, 2009). Women have been shown to catalyze the market as clean energy entrepreneurs by leading efforts that seek to develop effective, culturally appropriate, and sustainable solutions. Research in Kenya has shown that women can effectively become engaged as cookstove entrepreneurs and, in fact, may be preferred candidates for this type of work (Shankar 2015). This same study found that women sold three times as many cookstoves as their male peers when given the same level of training, supporting earlier work (Batliwala and Reddy, 1996) that showed women's networks can provide access to consumers in hard-to-reach markets and women distributors can better understand the needs of women and more easily approach their clients.

By 2028, it is expected that women will control close to 75% of discretionary spending worldwide (Ernst and Young, 2012). Continued investments in women are projected to allow significant scaling of adoption of clean energy projects. Moreover, economically empowering women can have substantial impacts on the family wellbeing. Research has shown that women in low resource settings reinvest an average of 90% of their income into their families and communities whereas men reinvest substantially less, closer to 30-40% (Borges, 2007).

While some progress has been made to effectively engage women in the energy sector, substantial challenges remain. Despite nearly 80% of GACC partners reporting engagement of women as employees or entrepreneurs for stove

distribution, only 10% of those women hold a leadership or management position, less than 20% of the organizations use gender-informed marketing strategies or engage women in after sales service and less than 25% use specific selection criteria to identify and recruit women.

There are additional challenges related to building strong women's businesses. Data from the recent Global Entrepreneurship Monitor (GEM), Women's Report (Kelley, et al 2013) document that in every economy reviewed, women had lower capability perceptions and greater fear of failure than men. Recent research studies are showing that these deficits in perceived capabilities can be overcome with targeted empowerment and leadership training. Data from Bolivia found that women who received empowerment and leadership training generated heightened demand for improved cookstoves in their communities. Data from a randomized-controlled trial in Kenya found that women sales agents that received empowerment training were twice as likely to demonstrate continued business activity after 8 months and were more than 2.5 times more likely to be a higher seller than those who only received the basic entrepreneurial training (Shankar, 2015). Moreover, users who bought a cookstove from women were more likely to use it predominantly, consistently, and were more likely to promote the stove to others. It is predicted that in most regions where energy poverty is high, women can, if properly trained, successfully engage within the energy sector, enhance their own economic status and promote an important social innovation within their community.

The Path Ahead

In recognition of the significant development impacts that clean energy access provides, the UN Women *World Survey of the Role of Women in Development* (2014) highlights clean energy, specifically clean cookstoves as one

of four key domains for investment with a particularly strong potential to transform the lives of women and girls. There has been successes to date to effectively engage women, such as the formation of the Global Alliance for Clean Cookstoves and its focus on women's empowerment; the creation of wPOWER, an initiative to scale women's energy entrepreneurship in Africa and Asia; the inclusion of energy access in the proposed SDGs and Sustainable Energy For All, ENERGIA explicitly focuses on energy access as one of its core pillars.

Despite these efforts, gender is not a high priority in the energy sector or amongst many leading gender organizations and advocates as evidenced by a lack of sex-disaggregated data from programs and barriers to the development of gender-aware energy policies and gender-sensitive practice (Clancy, 2011). As universal access to clean energy is a central UN goal, continued strategic efforts are required to effectively engage women within the energy sector as a primary method of reaching sustainable development and improved health.

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