

Ensuring just and equitable energy transitions



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To meet climate goals, countries will have to transition to low-carbon energy systems. But such transitions will not necessarily address underlying issues of gender and social inequity, and poverty. Women and other typically marginalized groups are at risk of being left behind and excluded from transition benefits (ENERGIA 2019).

SEI has shed light on the inequality that exists within low-carbon energy systems (Johnson, Yi-Chan Han, et al. 2020) and works with governments, civil society, academia and industry actors to support transition efforts and ensure that they unfold in just and equitable ways. SEI's related research covers topics ranging from inclusive energy planning to clean cookstove adoption.

This brief synthesizes findings and lessons from this work to identify learning and knowledge gaps, and thus help shape the way forward for work in this field. The brief is organized around four broad themes that have emerged from existing research on gender and energy (e.g. ENERGIA 2019), as shown in Figure 1: political economy, energy security, job markets, and technology adoption. We consider these to be key dimensions of energy transitions, through which we can explore gender and social equity issues.

Figure 1. Key dimensions for exploring gender and social equity issues in energy transitions

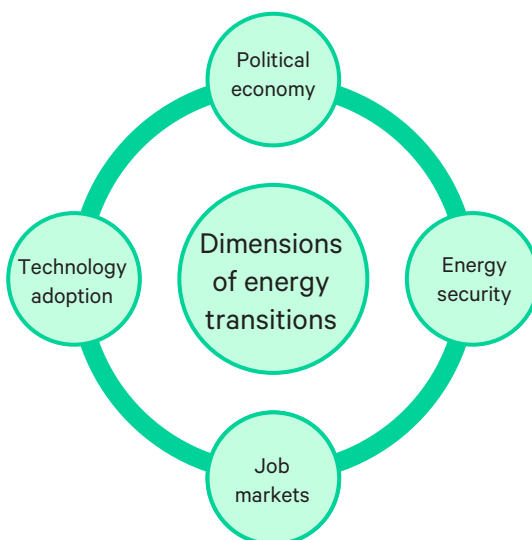


IMAGE (ABOVE): Energy conservator trains women to use Prakti Smokeless Stove, Gujarat, India © UN WOMEN / GAGANJIT SINGH / FLICKR / CC BY-NC-ND 2.0

Political economy

A political economy analysis reveals how and why resources and decision-making power are distributed in a given context. Gender and social norms are central to discussions of political economy, as they determine the roles, obligations and rights of women and men. Such norms can prevent women from enjoying the same resources and political influence as men, leading to institutionalized differential access to energy, supply chains, services, and end-use appliances. Acknowledging and acting upon these differences, and the factors that drive them, is essential to addressing the inequalities across energy systems, at different levels.

A good understanding of the political economy reveals the distribution of power within a political system, and the winners and losers that are created within it. Gender and social inequalities are created when losers within the system are prevented from fair access to resources, such as energy. Through the Initiative on Fossil Fuels and Climate Change, SEI has explored the political economy of energy systems in various contexts. For example, in Colombia and Indonesia, our work used political economy analysis to reveal how strong political alliances between public officials and fossil fuel companies maintain the status quo of a fossil-fuel-based economy, resisting attempts to transition to a low-carbon economy (Atteridge et al. 2018; Strambo et al. 2020). SEI continues to work on uncovering power dynamics through its new Initiative on Carbon Lock-in, which seeks to help societies overcome the interwoven barriers that uphold the fossil-fuel-based economy.

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The global community also has an important role in shaping interventions that address climate change, while also meeting the needs of the poor and most marginalized, including through the international negotiations of the Conference of Parties (COP) to the UN Framework Convention on Climate Change. The UNFCCC calls for transitions that contribute to the goals of social inclusion and poverty eradication (UNFCCC Secretariat 2016), yet social equity is not a central principle in global efforts to mitigate climate change. The Climate Equity Reference Project, founded by SEI and EcoEquity, has attempted to determine a nation's "fair" contribution in global efforts to address climate change, by considering factors such as financial capacity, historical emissions, and the protection of the poor and the most vulnerable (Holz et al. 2019; Kartha et al. 2016)

At the national level, energy policymaking tends to focus on the price and technology of energy systems, rather than the energy needs of end users – or, more specifically, the different needs of men and women within communities (Resurrección and Boyland 2017). Equitable energy planning can be better informed by models and tools that sufficiently integrate gender and social dimensions, such as differentiated energy use. SEI's Long-range Energy Alternatives Planning System (LEAP) modelling tool is well-suited to include such analysis (Escobar et al. 2017). For example, an upcoming LEAP model will be informed by a gender strategy assessment to make recommendations on the energy planning process in Lao PDR (Bresney et al. 2019; SEI 2018).

Energy security

Access to sources of energy and electricity improves the livelihoods, well-being and safety of women and socially marginalized groups in energy-insecure contexts (ENERGIA 2019). Yet, despite clear benefits, the transition to modern energy services is not gender-neutral and inequalities can be shifted from one area to another. For instance, an SEI analysis on solar mini-grids in Zambia found that the benefits of improved energy access were not evenly distributed between men and women, due to broader socio-cultural practices and norms (Johnson, Gerber, et al. 2019). Specifically, the mini-grids had little impact on women's lives, as it did not change an existing energy system that is reliant on diesel and traditional cookstoves (Muhoza and Johnson 2018). Other studies have also shown that access to household

electricity can simply shift women's responsibilities in one domestic domain to another (e.g. from cooking to livestock rearing) (Ding et al, Fernández-Baldor et al., 2015)

Energy policies can also have unintended consequences by placing additional burdens on women and the poor. For example, surge pricing on electricity at peak times in Sweden increased the reproductive workload for women, as they tended to wash clothes and dishes at night and weekends when the energy price was lower (Dzebo and Nykvist 2015).

Job markets

Women's presence in the energy sector is still a long way from gender parity due to limited support for women entrepreneurs and other barriers (IRENA 2013). An SEI assessment found that male engineers dominate the public energy sector in the Lower Mekong Region; women are typically concentrated in operational roles and under-represented in technical work (Resurrección and Boyland 2017). Several renewable firms and enterprises in the region are headed by women, however. These women are typically well-educated and from middle-class backgrounds; their leadership positions give them the flexibility to meet what they see as their first responsibility, the care of the home, thereby subscribing to gender norms (Resurrección and Boyland 2017).

In many contexts, the under-representation of women may be due to the perception that “energy work” involves heavy labour and that extended time spent at field sites would take women away from their home and expose them to harm. Furthermore, a perception that science, technology, engineering and mathematics (STEM) subjects and professions are masculine might also prevent women from pursuing STEM-related careers in the first place, leading to eventual under-representation in the energy job market (IRENA 2019)

Women face a number of other constraints in energy jobs, including the ability to access capital to start up their enterprises; men typically have better access to sources of capital than women, partly due to inequality in the ownership of stable assets such as land (Nelson and Kuriakose 2017). Men also have greater opportunities to be involved in large-scale renewable energy projects, especially those that involve land acquisition. Low social status, weak financial negotiation skills and thin social networks further bar women from large ventures (Cecelski, 2000; Pearl-Martinez, 2014).

Technology adoption

The scaled-up adoption of renewable energy technologies and services is important to climate change goals and the transition to low-carbon energy systems. One example concerns the adoption of clean cookstoves, which can also have gender and social equity benefits. In some parts of the world, women and girls spend significant portions of their day searching for wood to fuel traditional cookstoves, which release pollutants. With proper and consistent use, an improved cookstove – which is more energy efficient and burns cleaner – can bring significant health and environmental benefits to users, which tend to be women (Jürisoo et al. 2019).

The decision-making process to switch to modern energy services and appliances (like clean cookstoves) is also gendered (ENERGIA 2019). Social norms – such as the division of household responsibility and power relations – affect how much control women have over the purchasing of services and appliances, even if they are the primary user. Multiple studies have shown that financial considerations often take precedence over potential health benefits in cookstove purchasing decisions (Johnson et al. 2016; Lambe et al. 2019; Mobarak et al. 2012). Technology adoption is also determined by factors such as the users' access to

funds, aesthetic appeal, trust in the vendor, and peer usage – all of which produce different responses in women than in men, thus influencing a household decision on whether to switch to improved technologies (Jürisoo et al. 2018).

Ways forward

SEI's work shows the importance of explicitly accounting for gender and social considerations in energy transitions, with a particular focus on political economy analyses, energy planning, job markets and technology adoption. The transition to a low-carbon energy system requires widespread, holistic integration of gender and social equity in planning and implementation; this includes ensuring the meaningful participation of marginalized groups in decision-making processes and prioritizing poverty eradication and social justice in transition policies.

To inform these efforts, deeper analysis is needed to explore the gendered political, social and socio-technical aspects of transition, in support of a systems approach to the planning and implementation of just and equitable transitions.

Specific lines of enquiry could include:

- **How to ensure inclusive governance of energy transitions**, including how to challenge and address the gendered nature of energy planning and decision-making. Research gaps remain on the barriers and opportunities that women and other disadvantaged groups face in shaping transitions.
- **Identifying threats to disadvantaged groups**, including those that go beyond labour displacement, including threats to land rights, disruptions to livelihoods and the reinforcement of social inequity.
- **Shedding light on the socio-technical links** that inform gender and social equity considerations in the deployment of low-carbon technologies.

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