



POLICY BRIEF #12

GLOBAL PROGRESS OF SDG7 ENERGY AND GENDER

Developed by:

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This document is a part of a series of Policy Briefs being developed to support SDG7 review at the UN High-Level Political Forum to be held in July 2018. The objective is to inform intergovernmental discussions by providing substantive inputs on SDG7 and its interlinkages with other SDGs prepared through inclusive multi-stakeholder consultation processes. The development of these Policy Briefs is coordinated under the auspices of the Ad Hoc Informal Multi-stakeholder Technical Group of Advisors on SDG7.

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KEY MESSAGES

Status of gender and energy and progress towards achieving SDGs

- Over one billion people in the world lack access to electricity, and 2.8/3.04 billion lack access to clean cooking.¹ Women and children bear the greatest burden of this energy poverty.
- Within SDG 7, while some countries and regions are on track to achieve electricity for all, under current policies and trends, 674 million people, 90% of whom live in sub-Saharan Africa, will lack access to electricity in 2030. Negligible progress has been made on access to clean cooking, which affects women and households deeply.
- A number of actors have started working on the intersection of gender, energy and sustainable development, and in advancing gender equality, social inclusion, and women's empowerment in the energy sector.

Priority Actions over the Next Four Years

- High-level political commitments from Governments to set clear targets and indicators for clean cooking are needed, backed by investment from all stakeholders, and with the active participation of women in these processes.
- Growing global demand for energy will require investments in grid expansion and complementary off-grid electrification programs, particularly in decentralized sustainable energy solutions, such as renewable energy-powered mini-grids.
- Governments must raise their efforts to promote women-centric business models for expanding energy access at the last mile. Capacity building, partnerships with local stakeholders, expanding women's access to finance and supporting governments to create a conducive enabling environment for women entrepreneurs are necessary actions required.
- International and national energy and climate change programmes and mechanisms such as GCF and NDCs must be supported to meaningfully integrate gender concerns in programming.
- Energy sector institutions including energy ministries should be supported in developing gender-responsive monitoring systems and data collection methods.

Priority Actions to 2030

- In order to enhance the effectiveness of actions under all SDGs, integrate gender and energy actions within all SDGs, linking gender and energy actions with developmental goals relating to poverty reduction, health, environment, and women's empowerment.
- To ensure that all elements of energy planning and policy-making factor in gender dimensions and actively advance women's leadership at all levels.
- To increase the number and level of women in energy sector institutions at all levels.

Gender and Energy Nexus

The Sustainable Development Goals (SDGs) seek to change the course of the 21st century, addressing key challenges such as eradicating poverty and hunger, eliminating inequalities and violence against women and girls, and combating climate change. *Gender equality and women's empowerment are prerequisites for achieving these and other global goals.* Thus achieving gender equality and women's empowerment is a stand-alone goal—SDG 5—and integrated across the other goals, with many targets specifically recognizing gender equality and women's empowerment as both the objective and part of the solution.

There is a clear and important intersection between energy access and gender equality. Women and children are often disproportionately affected by a lack of access, in that their time and labour must typically fill the gaps (e.g., gathering biomass for cooking, manually processing grain or other food in the absence of machines, and so on). Additionally, a lack of access has important implications for the intersection of gender equality considerations and many of the other SDGs. Sustainable modern energy fuels development, from the light that allows a child to do her homework to streetlamps allowing women to travel safely home at night. Universal access requires energy to be affordable and reliable. Generating it

¹ Figure tbd based on what is being used in other briefs. IEA finds that 2.8 billion people lack access to clean cooking (2.5 billion rely on the traditional use of solid biomass, 120 million on kerosene, 170 million on coal). See IEA Energy Access Outlook 2017, iea.org/energyaccess. Global Tracking Framework figure is 3.04 billion.

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must not irreversibly harm the environment, highlighting the need for renewable energy.

In households, women are often the primary energy managers. But sustainable modern energy infrastructure and technology tend to reach women and girls last, even if vital for relieving their disproportionate share of unpaid care and

Gender and Energy Facts and Figures

- Only 4 of 72 countries analysed (6 percent) had women ministers overseeing national energy policies and programmes
- A study of more than 1500 companies found that having more women on boards of directors led to more investment in renewable energy
- 35 percent of the workforce in renewable energy companies are women, compared to 20-25 percent in the broader energy sector
- Women accounted for less than a third of those employed in scientific research and development (R&D) across the world
- High reliance on biomass for cooking in many countries means that women and children without clean cooking access spend an average of 1.4 hours/day collecting fuel

Sources: C3E/IEA Technology Collaboration Programme, "[Women in Clean Energy: Knowledge, Gaps and Opportunities](#)" (2017); IEA Energy Access Outlook 2017; IRENA Director-General

domestic work and enhancing their economic opportunities. This situation is obscured by the lack of sex-disaggregated data and gender statistics.

As primary energy managers in households, women could play powerful roles in extending sustainable modern energy. Yet all elements of energy planning and policy-making need to factor in gender dimensions and actively advance women's leadership. Women need to be involved from start to finish in the design of modern energy access technologies and programmes and empowered to become more involved in the provision of energy services. Within the energy industry itself, barriers to women executives, entrepreneurs and employees must fall. And their representation on national and global energy councils and other fora must grow.

Are we on track to achieve SDGs and gender equality and energy access objectives?

A number of SDGs are more likely to be achieved if the gender-energy-poverty nexus is recognized and integrated in development policies and planning. Significant among these are SDG 7 seeking to "ensure access to affordable, reliable, sustainable and modern energy for all" by 2030 and SDG 5 aiming to "achieve gender equality and empower all women and girls", which are inextricably linked.

Integration of gender and energy issues can help reap benefits at multiple levels, contributing to most SDGs through improving the quality of services provided for maternal health,

food security, clean water, entrepreneurship, agriculture, education, and others. At the same time, women's participation can increase project and policy effectiveness and efficiency of energy sector interventions and the achievement of SDG 7.

Global electrification reached 86 percent in 2016 and close to universal access achieved in urban areas at 96 percent, while rural areas lag behind at 73 percent of the population. This means that over 1 billion people still do not have access to electricity, particularly in Sub-Saharan Africa and South Asia. Global access to clean fuels and technologies for cooking reached 62 per cent in 2015. However, 2.8 billion people still lack access to clean cooking, mainly in rural Sub-Saharan Africa and Asia-Pacific. Thirty-eight percent of the global population and almost 50 percent of the population in developing countries lack access to clean cooking, relying solid biomass, coal, and kerosene (IEA 2017; WHO, 2016). Polluting fuels are used for cooking in 75 percent of households in rural communities across the world, 91 percent of rural households in Africa, and 82 percent of rural households in the Western Pacific. This means that primarily women and children spend on average 1.4 hours a day collecting solid fuels (i.e., wood, crop wastes, charcoal, coal or dung) and several hours cooking with inefficient stoves, limiting time available to pursue other economic, family or leisure activities.

In countries that rely heavily on solid biomass and coal for cooking, household air pollution is responsible for 2.8 million premature deaths every year (IEA 2017), linked to fumes from fuels such as wood, animal waste, and charcoal, mostly among women and children. Africa alone accounts for about 600,000 deaths each year as a result of household air pollution (Africa Progress Panel, 2015), and approximately 60 per cent of these victims are women (ESMAP, 2011; IRENA 2013 cited in UN Women 2017). Two under-researched but often-mentioned links between health and energy poverty are sexual assault and the physical burdens of carrying heavy loads of fuel and water. Some evidence indicates that women and girls are at risk of sexual violence when they collect fuel and water or when they are outside after dark (Rewald 2017), especially in the absence of community lighting.

In most countries, even though the potential for improved or clean cook stoves to eliminate the time and health burdens of cooking with biomass are understood, it has been challenging to encourage households to adopt new cooking technologies (Rewald 2017; IEA 2017). Significantly, the policy commitment to clean cooking has lagged behind as well. In 2014, more than 140 countries had renewable energy targets and support policies in place, but almost all of these were for the power sector (ADB 2015). Under current policies and trends, 2.3 billion people will still lack access to clean cooking facilities in 2030 (IEA 2017). Women and children bear the greatest burden of energy poverty. In contrast, access to and use of clean energy brings interconnected, corollary benefits related to greater gender equality, economic productivity, educational opportunities, and more.

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In addition to fuel collection and cooking, the burden of a number of other time- and labour-consuming activities that are typically carried out by women can be eased by modern energy applications. These increase efficiency and productivity thus improving wellbeing and freeing up time for leisure and rest. Women carry, on their heads, about four times as much in volume as men, primarily water, firewood, and crops for grinding (Blackden and Wodon 2006). Time spent on fetching water can be significantly reduced through piped water supply. Processing staple foods, such as grain grinding, is a time-consuming manual task performed daily by women, all of these can be eased by modern energy. Lack of sustainable transportation, water pumps, electric appliances, and other tools that require energy access mean that women in poor households have to exert much more of their own energy.

Inter-linkages with other SDGs

Addressing gender and energy issues offers potential gains across a number of SDGs in addition to SDG 7, notably those linked to poverty (SDG 1), health and wellbeing (SDG 3), education (SDG 4), gender equality (SDG 5), and climate change (SDG 13).

Access to electricity can support women’s economic empowerment by facilitating productive and employment opportunities. In Nicaragua, access to reliable electricity increases the likelihood of rural women to work outside the home by approximately 23 percent (Grogan and Sadanad 2013). A recent study from Brazil showed that in rural areas with access to electricity, girls are 59 percent more likely to complete their primary education (SEforALL 2017a). Electricity also gives people the opportunity to charge mobile phones, increasing connectivity and employment opportunities, and where the financial infrastructure exists – access to services like mobile banking (GSMA 2015). Moreover, as investments in renewable energy increase, more employment opportunities will be created for both men and women (World Bank ESMAP 2018).

Engaging women in energy value chains, as employees and as entrepreneurs helps augment their incomes. When a woman is given an opportunity to earn an income, it helps in many other areas of her life. Studies show that women reinvest 90 percent of their income in their families and communities, while men reinvest only 30 to 40 percent; thus the implications for economically empowering women can reach far beyond the individual (Borges, 2007). Women are also more likely than men to invest a large proportion of their household income in the education of their children, including that of girls (Lewis, 2013; IMF, 2013). According to the ILO, women’s work, both paid and unpaid, may be the single most important poverty-reducing factor in developing economies (IMF 2013, Borges 2007).

Aside from eliminating or at least reducing household air pollution, addressing gender and energy issues can have discernible impacts on global health. Improved lighting and hygiene associated with clean energy and safely managed water would help reduce maternal mortality rates. The maternal mortality ratio is strongly correlated with access to

electricity (UN Women, 2014 cited in Smart Villages 2015). Yet one billion people globally are served by health facilities without electricity: In India 46 percent of the health facilities, serving an estimated 580 million people, are without electricity (Practical Action, 2014). An analysis of health facility survey data for Bangladesh revealed that electrified clinics are open on average an hour longer (IEG, 2008), and electrified households in the country reported a higher pro-portion of child deliveries assisted by medically trained persons (36 percent) compared to those in non-electrified villages (23 percent). In addition, higher pro-portions of electrified households reported antenatal care, pregnancy check-ups by medically trained personnel, tetanus injections during pregnancy and post-natal check-ups after delivery (Barkat et al, 2002 cited in Smart Villages 2015).

Key Gender Issues Across the Energy Sector

Energy Access <i>Household Energy & Rural Electrification</i>	Time poverty due to fuel collection and cooking; gender-based violence related to fuel collection; health impacts, as women and children are disproportionately affected by indoor air pollution; and lack of access to information and financing for energy services or technologies
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Electricity Infrastructure <i>Generation, Transmission, & Distribution</i>	Displacement, inequity in ownership or land titling during resettlement; inequitable access to new jobs in areas such as energy, engineering, tourism, or services; inequitable benefit sharing due to lack of land titles or government identification; gender-based violence related to migration, new roadways, and traffic patterns; and exposure (mostly affecting men) to hazardous work on energy infrastructure such as electrical wiring and chemical handling
Clean Energy <i>Renewable Energy & Energy Efficiency</i>	Women and female-headed households having less information on new technologies that can create opportunities for employment and training; lack of access to financing and collateral to purchase such technologies or services; lack of voice in household decision making about energy options and electricity use that can impact behavior change or adoption of improved energy services
Energy Policy <i>Subsidies, Tariffs, & Reforms</i>	Female-headed households are often poorer and may suffer more from rapid tariff increases than male-headed households; men often have power over household budgets and decision making; men may be more affected than women by direct job losses in heavy manufacturing; women may not be included in policy consultations and decision making due to societal norms

Source: ESMAP 2017

Advances in the gender and energy nexus

Perhaps the most pertinent reason for considering women's role insofar as the SDGs are concerned is the fact that women are slowly, and steadily becoming a part of the solution in the energy access gap, which the conventional business as usual approaches are unable to solve (SEforAll 2017c). In recent years, going beyond their traditional role as "users" and "beneficiaries," women are playing a role in expanding energy access—thereby becoming part of the solution to expand energy access for all (Dutta et al 2017). There is also growing evidence that greater gender diversity—particularly in board and other leadership positions—including that in energy sector—benefits business in meaningful financial and non-financial terms, such as through improved profitability and innovation capacity (EY 2016, World Bank ESMAP 2018). This section discusses the progress that has been made in addressing these nexus issues as well as the persisting gender gaps.

In recent years, a number of actors have started working at the intersection of gender, social inclusion, sustainable energy and climate change. The legitimacy of gender inclusion and energy access as an interrelated issue area is now well established; studies show positive benefits when these issues are tackled together (UN Women 2016). A global movement is underway to create a more inclusive approach to energy access, with women and marginalized people taking center stage—no longer as victims, but as agents and accelerators of change (SEforAll 2017a). This is strengthened by several recent international agreements, which provide a framework for gender and energy work, including the Istanbul Programme of Action for 2011-2020 which charts out a path for Least Developed Countries (LDCs), highlighting energy access as a priority area for action, along with gender equality and the empowerment of women; the Sustainable Energy for All (SEforALL) initiative, launched by the United Nations Secretariat in 2012; the 2016 Paris Agreement on climate change which formally recognizes the intersection of climate change and gender equality, empowerment of women, and realization of their rights, and mandates gender-responsive adaptation actions and capacity-building activities. The SEforALL business plan moved from positioning women as victim/beneficiary to leader and change agents in the energy transition and has launched the People-Centered Accelerator to form a voluntary partnership of stakeholders interested in advancing gender equality, social inclusion, and women's empowerment in the sustainable energy sector. Additionally, many organizations focus specifically on women and girls in the gender and energy nexus, such as UN Women, Women for Women International, and the Global Fund for Women.

The World Bank's Energy Sector Management Assistance Program (ESMAP) was an early mover on gender and energy and has played an important role in ensuring that gender issues in energy go beyond advocacy to produce concrete results in investment, project design, and implementation by focusing on knowledge generation and supporting pilot interventions at the country level. ESMAP has helped curate a strong set of best practices, developed online training and

tools and is producing a series of reports and guides on gender issues across energy topics such as electricity infrastructure, geothermal, mini-grids, energy efficiency and behavior change, and clean cooking. Through its gender and energy regional programs in Africa and East Asia and Pacific, ESMAP is currently engaged in over 30 countries and has developed a roster of gender experts that have been repeatedly called upon to provide expertise in lending and non-lending activities of the World Bank. Some examples of project level activities in Africa include capacity building and economic empowerment; data collection and evidence building; or behavior change and consumer outreach. In East Asia and Pacific, gender experts are providing support in areas such as surveying male and female customers of energy cooperatives; developing gender action plans and gender-informed beneficiary schemes for a hydropower project; improving outreach mechanisms for ethnic minority women affected by a hydropower project; baseline data collection and M&E tools; promoting women's leadership and employment; and supporting clean cooking programs through guidance notes.

Gender integration in energy policy and regulation:

A number of positive developments at regional and national level have recognized the centrality of gender considerations in energy sector interventions and development. The "ECOWAS Policy for Gender Mainstreaming in Energy Access," adopted in June 2017, is one such instance, where 15 countries have committed to address existing gender barriers in expanding energy access in West Africa. This gender-responsive energy policy aims to: increase general awareness of gender and energy within government, academia, and at large; mainstream gender perspectives into all public-sector energy activities; achieve gender balance in public sector energy-linked jobs and decision-making roles; and ensure women have equal opportunity to participate in the private energy sector.

An accompanying ECOWAS regulation mandating gender-impact assessments for energy projects is now under consideration. Similar efforts are being taken up in East Africa (East Africa Centre for Renewable Energy and Energy Efficiency) and Southern Africa (Southern Africa Centre for Renewable Energy and Energy Efficiency) (SEforALL 2017a). A recent review of gender integration in energy policies in 15 East and South African countries shows a positive trend in integrating gender dimensions into energy policies (UN Women 2017). More than 60 per cent of the policies acknowledge the need for enhancing women's participation in policy and decision-making in the sector, and more than half note the need to enhance women's access to energy services and technologies as a means of empowerment. Some of the policies also identify specific actions to tackle the challenges identified. About 40 per cent of the policies highlight the link between women's empowerment and enhanced environmental sustainability in the sector.

While progress has been made, gender considerations are often absent in energy planning and policy (Clancy, 2017). Regarding electrification projects, even though the impacts and risks of energy development should be addressed in Environmental and Social Impact Assessments, mitigation

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plans are not always funded, monitored or disaggregated by gender. Consultations, policy planning, and decision-making in the energy sector do not always consider gender and social inclusion issues and stakeholders. Since women and other so-called vulnerable groups are left out of energy plans and surveys, baselines for measuring development benefits usually do not exist.

Women in energy entrepreneurship:

Significant evidence is now emerging to show that energy interventions that take into account women's needs are more likely to have a significant impact on addressing household and community energy poverty and on gender equality; and ensuring women's equal participation in energy interventions has much higher potential of benefits for all (UNIDO and UN Women, 2013; UN Women 2016; Glemarec et al. 2016). One such emerging strategy is women's entrepreneurship in energy, which represents a huge economic growth potential (SEforALL 2017c). Even though 80 percent of the population without energy access and reliant on biomass for cooking have incomes of less than US\$ 3 per day, together they spend US\$ 37 billion per year on meeting basic energy needs (World Economic Forum 2013). However, the conventional private sector actors find it difficult to tap this potential as operating distribution channels to reach last-mile markets remains a challenge: customers in remote areas do not shop through standard retail channels; local distribution chains are fragmented; and sales volumes are low.

Women and their organizations are uniquely positioned to play a critical role to bridge this gap at the last mile. First, a large number of women are engaged in small and medium-sized enterprises; female ownership represents 30 to 37 percent of all SMEs [eight million to ten million women-owned firms] in emerging markets (IFC and McKinsey Women SME mapping exercise 2011). This provides a ready springboard for selling energy products and services, leveraging their networks to promote adoption of new technologies. They are effective spokespeople for use of clean energy, endorsing marketing messages, taking advantage of women-to-women communication strategies. This is important since women make or influence 80 percent of buying decisions and control US\$20 trillion in global spending, they play a key role in spending decisions in homes. It is projected that by 2028 women will control close to 75 percent of discretionary spending worldwide (Ernst & Young, 2012, cited in SEforALL 2017b). Because women are close to their customers and know local circumstances, women entrepreneurs have enormous potential to manage supply chain and acquire new creditworthy customers in rural areas, lowering the customer acquisition costs (Glemarec et al., 2016). New research from Ernst & Young also shows that women entrepreneurs are powerful job creators – even outperforming their male counterparts on this front. As a result, a number of energy enterprises have begun to employ women as sales representatives in order to reach energy markets in last mile and other contexts.

Networks and partnerships in gender and energy:

ENERGIA's Women's Economic Empowerment program works closely with women energy entrepreneurs in hard-to-reach

areas across Nepal, Indonesia, Kenya, Nigeria, Tanzania, Uganda, and Senegal. The "last-mile" distribution model, centered around women-led micro- and small-scale businesses, has led to a robust program with 4,153 women entrepreneurs involved in selling and distributing clean energy products or adopting clean energy to boost the productivity of existing businesses. A number of partnerships and networks are also emerging, such as the WPower, Global Alliance for Clean Cookstoves and the Shine Campaign, bringing together resources and paying attention to gender equality and social inclusion in catalyzing distributed clean energy development at scale to meet the 2030 goal of universal energy access (SEforALL 2017a).

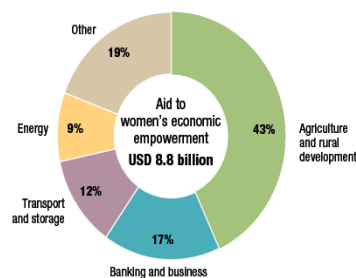
Networks such as the Clean Energy, Education and Empowerment Initiative (C3E), Women of Renewable Industries and Sustainable Energy (WRISE), Women in Solar Energy (WISE), Entrepreneurial Women in Renewable Energy (EWIRE), and the Global Women's Network for the Energy Transition (GWNENT), are also spreading ideas, mobilizing support, and providing encouragement, to build a cadre of women leaders in the energy sector.

Persistent bottlenecks and challenges

While there is considerable momentum on the gender and energy nexus globally and new innovative women-centric business models are emerging, it appears that potential gains are not being fully realised due to persistent gender barriers and gaps. These include the continued dependence on biomass for fuel and the attendant time and energy poverty and health issues, exacerbated by climate change and environmental degradation. What are these bottlenecks that need to be addressed to make meaningful progress?

Distribution of aid to women's economic empowerment by sector

Chart 3: Sectoral distribution of gender equality focused aid to the economic and productive sectors
% of total bilateral aid commitments, 2013-14, constant 2014 prices



Funding Barriers:

The OECD DAC Network on Gender Equality (GENDERNET) in June 2016 noted that only a very small proportion of ODA for women's economic empowerment is directed to the energy and transport/storage sectors (9 and 11 percent respectively). A recent study by SEforALL points out that while a wide range of activities, including advocacy, research, capacity building, training, networking, and convening, have been funded, there is a need to step up investment and private-sector engagement. Recent data collected through desk research and structured interviews on 174 programs showed that just 12 percent of organizations are focused on moving capital into sustainable energy solutions that address gender and social inclusion. Grants need to be increased in amount and tenor to respond to the most frequently cited barrier of a lack of "access to multi-year funding" and used to leverage more and varied types of sustained funding, including commercial

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investments. More methodical inclusion of women-centered funds into existing sustainable energy financing vehicles is a key need, recognizing that there are both rights-based and efficiency-based arguments for doing so (SEforALL 2017a). Availability of financing also remains a primary bottleneck for women energy entrepreneurs.

Women's representation in energy sector: A cross-country comparison of women's representation in national parliaments shows that globally, only 19 percent of parliamentary seats were occupied by women in 2015. Moreover, women's labour force participation has not seen significant improvements since 2000, with the global average being 2 women for every 3 men. In 2016, women still represented just 40 percent of the global labour force and 23 percent of national decision-makers (SEforAll 2017a). In ministries of energy, women are overrepresented in administrative positions, men in managerial and technical areas. The main factors encouraging gender policies that promote women's representation in the energy sector are national regulatory frameworks with clear objectives on gender, CSR policies, gender awareness within the utility, and utilities' demand for labour and specific skills (World Bank ESMAP 2018).

Gender equality has not increased significantly on the global average, thus hindering women's empowerment in the energy sector. The gender and energy sector is specifically challenged by the lack of women in technical fields, limiting their participation in energy companies and their involvement as entrepreneurs, outside of the retail segment of the value chain. Women's familiarity with new technologies is also usually lower than men's, particularly in rural settings. Women's groups that can benefit from access to energy for productive use may not know what technologies are available to them or may not have the technical skills to use the devices (SEforALL 2017a).

Discriminatory social norms and practices: Barriers related to cultural and social norms must be addressed for sustainable energy initiatives that aim for gender equality and social inclusion to succeed. Women and girls face multiple and intersecting inequalities and forms of discrimination. Because of prevailing discriminatory gender norms, women and girls tend to be less educated than men and boys, with less access to information, skills, training and labour markets, while facing greater risks of violence and harmful practices. This complexity influences their decision-making power and exercise of voice and agency and enables or constrains their access to land and productive resources, technology and information, and education and health services. Based on data for 161 countries, only in 37 per cent of those countries do women and men have equal rights to own, use and control land. In 59 per cent of those countries, while the law guarantees women and men the same rights, customary and religious practices often discriminate against women and undermine the full implementation of national legal codes. In the remaining 4 per cent of those countries, women explicitly have no legal right to own, use or control land (www.genderindex.org). Moreover, social tariffs for electricity are not equally accessible to female and male headed households. These constraints also jeopardize women's chance of success as entrepreneurs in the sustainable energy sector.

Women-owned enterprises account for a third of businesses in the formal economy worldwide, but the majority in developing and emerging economies are informal micro- and small enterprises with little growth potential. Women working in family-owned businesses are often not considered full shareholders or compensated equally. Nevertheless, women's enterprises can be important vehicles for economic empowerment, leading to improved incomes and contributing to poverty reduction in the household and community. Yet discriminatory social norms and family responsibilities can prevent women from even starting a business. Policies are needed to address discriminatory property and inheritance laws that inhibit women's entrepreneurship, as well as to facilitate women's access to markets, credit, financial services and products, infrastructure and technology, procurement opportunities and social protection.

Data availability: Lack of high-quality data and, more precisely, lack of sex-disaggregated data and gender statistics, is a major impediment to projects in the gender and energy nexus. Gender statistics on energy access are almost never available at any level. Additionally, many practitioners struggle to agree to and capture quantifiable measures of women's empowerment, either selecting overly broad or overly narrow indicators, trying to balance the efforts required to collect data with the usefulness of that data, and then finding that measurements are not directly comparable across organizations. This, in turn, makes it difficult to convincingly raise awareness on the topic. Judging from the level of advocacy that programs and organizations are engaged in and the presence of the activity in all regions, the level of awareness of the gender and energy nexus seems quite low, even among the international community, national governments and the private sector.

Policy Implications/Recommendations

Build gender-responsive global and national energy sector policy regimes through evidence-based policy advocacy

Against a backdrop of declining production costs for renewable energy technologies and international commitments on energy and climate change as well as gender, the time is ripe to build a cohesive, strong and multistakeholder movement on gender, social inclusion, women's empowerment, and sustainable energy. Platforms that bring together diverse actors and elevate the profiles of locally grounded individuals and groups should be supported. Resources are needed to support the consolidation of evidence-building efforts, lobbying demands, message coordination among groups, as well as a high-level strategic mobilization plan to build gender and social inclusion more firmly into sustainable energy opportunities, financing, and services. When sustainable energy becomes widely viewed in political spheres not just as an issue area, but a matter of human rights and women's rights, the door will open for follow-on actions, budgeting, and policy reform (SEforALL 2017a).

Promote and invest in decentralized sustainable energy technologies that support gender equality and women's economic empowerment

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Rapidly falling renewable technology costs and new business models mean that decentralized energy solutions hold great promise to accelerate universal sustainable energy access and support women's reproductive and productive work. Decentralized sustainable energy technologies—both at the individual systems level, such as solar home systems, and at the mini-grid level servicing 50 to 100 households or an entire community—are the cheapest solutions for energy access in an increasing number of locations worldwide. Women should be directly involved in the development, deployment, and benefits of these business models and technologies (Glemarec et al., 2016).

Scale up women's energy entrepreneurship approach as an effective business model, including to reach last-mile communities

As part of their energy access strategies, governments must raise their efforts to promote women-centric business models for expanding energy access to all, including at the last mile. They must (SEforALL 2017c):

- Leverage the work done by women's networks, including women entrepreneurs, and civil society organizations working simultaneously on the delivery of energy services, poverty reduction and gender equality.
- Build the capacity of organizations working on such business models - to develop technical, business and leadership skills and advocacy capability, with a focus on elevating the level of women to become leaders at all levels.
- Expand women's access to finance, by developing financing instruments, mechanisms, and specific loan products for women, including microfinance and mobile banking.
- Engage with manufacturers, suppliers and distributors to partner with women's formal and informal networks, as distributors/resellers.
- Support governments in reforming the business environment for women, including tax administration and regulations especially for smaller, informal sector firms

Prioritize clean cooking fuels and technologies

The lack of access to sustainable energy for cooking continues to have severe socio-economic impacts on the poor, women and children in particular. While there have been notable advances in electrification, not enough has been done to ensure clean cooking. Women should be at the center of policies and programmes on clean cooking. To move away from reliance on solid biomass for cooking, policies and programmes need to reflect local needs and expectations, account for social and cultural factors, clearly address the health risks, and empower women, as they are the central decision makers in household cooking matters.

National governments should be encouraged and supported to demonstrate greater political and financial commitment to ensure all households in the region switch to clean fuels and

clean, efficient stoves and have access to decentralized renewable energy solutions in the short term. Supporting research and development of innovative, low-emissions technologies to provide household energy services should be a top priority for the global development agenda (WHO 2016).

Engender energy sector programming through supporting national and locally led initiatives

Advocating for strategies and planning approaches that enable the inclusion of women at every stage of the design, implementation, delivery and monitoring of energy services is critical if those services are to respond to the needs and priorities of women and girls. Gender and energy issues are often location specific. For this reason, adapting strategies to specific gender contexts and energy situations is important. In most successful initiatives, local-level engagement is a critical success factor with locally-driven issue identification, problem-solving, know-how, and mobilization of local capabilities. In policy arenas—whether for a sector strategy or regulatory change—national and local-level engagement manifests itself as buy-in and ownership, which translates to greater likelihoods of gender-sensitive provisions being put into practice (SEforALL 2017a).

- Ensure that energy sector policies highlight the challenge of gender equality and include a visible commitment to addressing it
- Mobilize and commit funding for gender and energy programs and activities within organizations and businesses for research, pilot activities and capacity building
- Establish gender-sensitive targets and indicators for energy sector programmes and routinely report on progress
- Include explicit objectives for women's energy access, participation, labour mobilization, and leadership in energy infrastructure programme documents
- Ensure energy sector projects track the participation of and benefits to women and girls and other disadvantaged groups

Include systematic and sex-disaggregated data collection and analysis of gender statistics as part of programming and to support policy formulation

Lack of sex-disaggregated data and gender statistics is a major gap in achieving equal access to energy for men and women, without which the extent of unequal access cannot be grasped. Universal energy access cannot be achieved without more gender-responsive programmes and policies – which in turn require better data collection, gender-sensitive indicators and gender analyses. For women to be actively involved in decision making, data collection on women's and men's resource use, knowledge of, access to and control over resources and economic opportunities must be improved.

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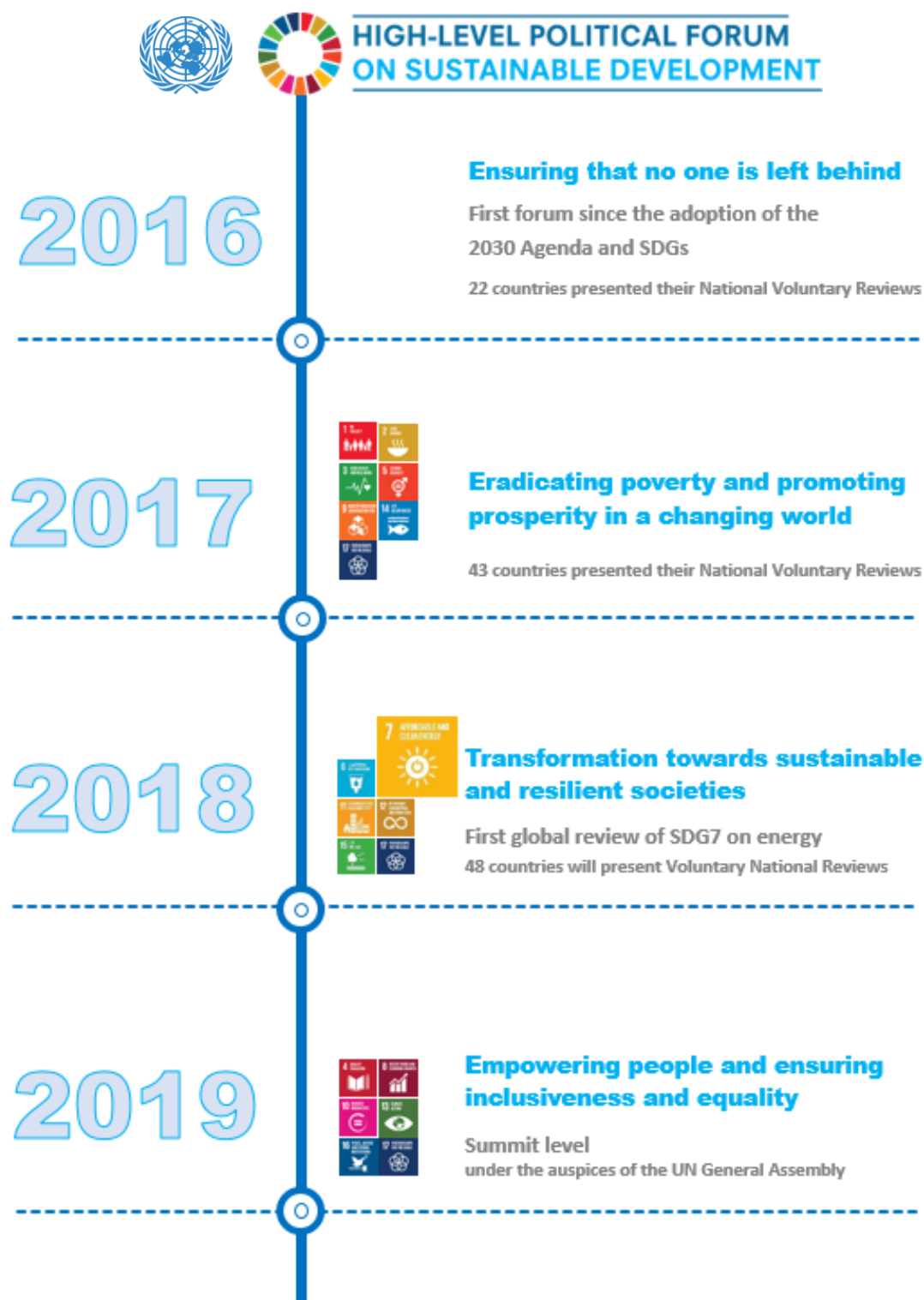
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