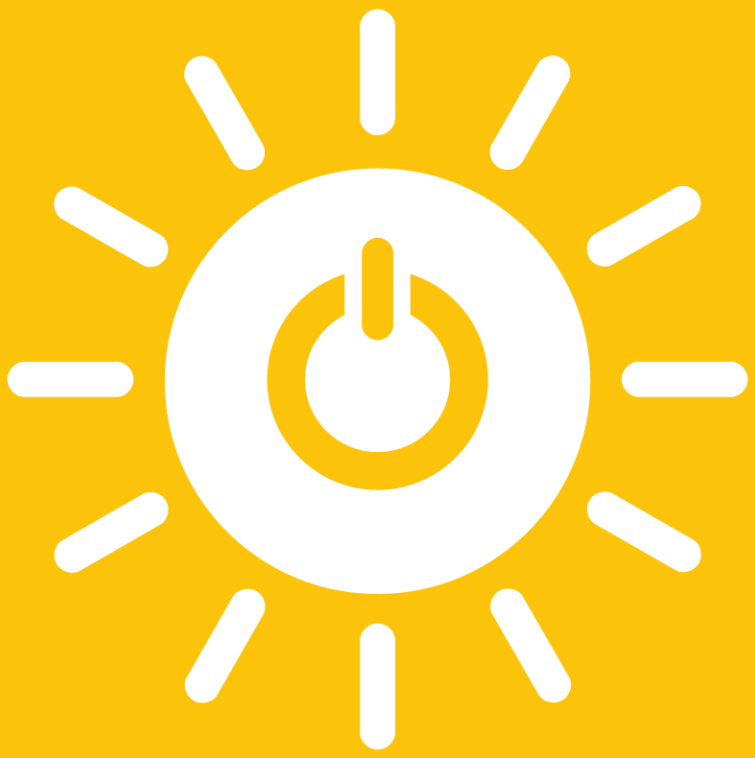
7 AFFORDABLE AND CLEAN ENERGY



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17 ROOMS 2022 GLOBAL FLAGSHIP SUPPLEMENTAL ROOM DOCUMENT

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The 17 Rooms initiative is co-hosted by the Center for Sustainable Development at The Brookings Institution and The Rockefeller Foundation. Within the 2022 global flagship process, each Room, one per SDG, was asked to identify actionable priorities that can be advanced by the end of 2023 to improve some component of 2030 outcomes for its respective Goal. Room 7, a working group for Sustainable Development Goal 7 on Affordable and Clean Energy, focused on accelerating just energy transitions in developing countries. This document outlines a net-zero pathway that is net-positive for people.

Just energy transitions in the developing world

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A Net-zero pathway, net positive for people

The window to achieve net-zero greenhouse gas emissions is closing, and with that, the chance to avert climate disaster. Global emissions need to be reduced to **net-zero** within the next three decades to avoid a climate emergency exacerbating hunger, poverty, and conflict with developing countries paying the highest price. But how can the world achieve net-zero societies in which people—especially the most vulnerable—can benefit?

First, let's define what is net-zero and why energy is at the center of the solution. In simple words, net-zero means balancing the production of greenhouse gas (GHG) emissions with the quantity that is removed from the atmosphere. Global warming goes in line with cumulative GHG emissions, which means that the planet will continue heating as long as net global emissions remain more than zero. Burning fossil fuels (coal, oil, gas) generates greenhouse gases that blanket-wrap the planet, trapping the sun's heat and leading to rising temperatures. The largest source of carbon emissions from human activities is **energy generation.** Globally, around two-thirds of greenhouse emissions are due to the burning of fossil fuels for energy used in heating, electricity, industry, transport, etc. Energy touches all aspects of people's lives, from everyday activities such as cooking, studying, and commuting to running a business and generating a livelihood. Energy is the underlying factor in both achieving inclusive, broad-based economic growth and development and addressing the existential climate challenge.

Achieving a sustainable future clearly requires a global shift from fossil fuels to renewable and clean energy systems that allow the world to reach net-zero by 2050. This transition involves much more than technology investments toward a carbon-neutral society and a fertile policy space. It represents a complex transformation with profound social, cultural, and economic implications. These will be especially pronounced in developing countries that have yet to achieve energy security and/or are highly dependent on fossil fuels. Generally, these regions will be tested by hard trade-offs. Local communities naturally prioritize economic growth. Therefore, limited financial means and skeptical political actors may opt for decisions that do not prioritize sustainability, at least not in the short run. As developing nations go through a turbulent process filled with insecurities and qualms, **it is vital to prioritize a *just transition* that allows them to balance development and climate goals.**

A body of literature has emerged around the need for a ***Just Energy Transition***, a concept that acknowledges that a low-carbon energy strategy must emphasize equity and justice. Increasingly, the notion of just transitions has been applied to address issues of inequality that emerge as climate action necessitates certain structural changes. The Council for Inclusive Capitalism, based on the Paris Agreement's preamble, has defined just energy transition as "the transformation of the global energy sector toward a sustainable, net-zero emissions system, [that] must take into account the social and economic impacts on individuals, workers, and communities."

We have seen a growing number of encouraging just transition examples in worker protection in the developed world. For example, Spain, Germany, and Canada have enacted just transition programs that promote employment opportunities and other community support measures in impacted mining regions. Yet there is a need for a much more **holistic view and practical framework** to ensure that energy transitions in the developing world deliver an accelerated end to energy poverty, sustain and expand economic opportunity, and protect families, communities, and regions as they go through what could be a generation-long transition. Acknowledging that there is no one-size-fits-all solution, this document explores three critical areas to be considered for a just energy transition framework in the developing world.

I. Investing in people's skills

A shift from fossil fuels to renewables will trigger more local and decentralized energy systems requiring both skilled workers and skilled consumers. The new skills associated with the shift toward a smarter and more local energy system will require a broader definition of skills beyond those normally associated with new technologies. A meaningful just energy transition requires both public and private sector stakeholders to work toward the development of green human capital. This will empower a network of actors, including local communities and workers, to meaningfully engage with emerging technologies and harness the economic benefits of smarter and more localized energy systems. Governments must take a proactive approach to avoid the most vulnerable becoming irrelevant in the transition to low-energy economies. Specifically, they must identify the requisite green skills, their location, and who will fill such roles.

Public investment is indispensable. It will facilitate equal access to education and targeted vocational training for lower-skilled workers; this ensures that the creation of green jobs benefits people and regions most in need.

Furthermore, a socially just energy transition will require extending skills provision to communities and consumers. Such familiarity will enable households and businesses to operate via localized energy systems. These skills can range from those that are relatively simple, such as reading a smart meter, to the more complex, such as understanding the nuances of choosing between different energy providers, tariffs, and technologies. Integration of new technologies could be significantly hindered if energy consumers lack the skills and awareness of the potential benefits of the smart energy revolution.

Youth are becoming increasingly involved in climate change and energy transition issues, making youth engagement a key component for unleashing the benefits of energy transitions. They already account for a substantial portion of jobs in the renewables sector and constitute an important source of talent for achieving energy access and energy efficiency targets. Therefore, targeted and flexible skill training, as well as early job opportunities in the form of apprenticeships and internships, play a fundamental role in the tractability of just energy transitions.

Combined efforts between governments, the private sector, and educational institutions are needed to adapt traditional curricula, respond to the job market's needs for green skills, and increase youth employment opportunities. Giving an active voice to the youth during this design and building process is critical to ensuring their needs and expectations are covered. It is especially important to foster and integrate their digital, communication, and networking skills into training programs to fully tap into their innovation and interest. Furthermore, youth-led enterprises need to be supported and encouraged, which have the potential of bringing innovation and new solutions to the energy sector.

It is also critical to recognize that even with appropriate training mechanisms, there will be certain segments of the workforce that will not be able to transition. This could arise from the overlap of different conditions such as health, age, education, race, gender, geographical location, etc. among a given population, for whom social protection systems in the form of unemployment protection, social health protection, cash and in-kind transfers need to be put in place.

II. Putting gender equality at the forefront

Historically, energy transitions have been demonstrated not to be gender neutral. Therefore, it is essential to incorporate gender-sensitive measures where women are active participants and in which their needs and gendered experiences are brought into the discussion. In developing and low-income countries, women are disproportionately affected by the lack of reliable and clean energy. This affects not only their health and well-being but also their agency in accessing economic opportunities. Subsistence and productive tasks related to gathering fuelwood for cooking, fetching water, manually processing food, among other household activities, add to women's time burden. In turn, this hinders their access to livelihoods and economic empowerment. Moreover, indoor air pollution poses a threat to the health of millions of women, who—due to the lack of access to clean fuels and traditional gender roles—are the main ones responsible for cooking within their households. By shifting toward more modern fuels and appliances, the capacity of women and girls to pursue education, entrepreneurship, or enter the workforce will be freed up.

Any net-zero scenario must prioritize access to sustainable, reliable, and affordable energy, including clean cooking fuels. These are not only key for climate goals and public health but also for women's empowerment and agency. According to the International Energy Agency's Net Zero Emissions by 2050 Scenario, universal access to electricity and clean cooking by 2030 will cost around 40 billion a year over the next decade and add less than 0.2 percent to CO2 Emissions.

In terms of women's participation in the workforce, IRENA estimates that the global renewable energy sector as a whole shows a better gender balance, estimated as comprised of 32 percent women, compared to the oil and gas energy sector, in which women only represent 22 percent of workers. Much remains to be done to ensure women's equal participation in this emerging industry. For instance, women's share in STEM positions in the world's renewable workforce accounts for 28 percent, while in the wind energy sector is only 14 percent.

While the energy transition toward a net-zero society will bring a myriad of green job opportunities, it is also important to recognize that not everyone will be able to reap the benefits equally. In 2019, the

International Labour Organization (ILO) analyzed the degree to which workers losing their jobs could expect to find new jobs in the same occupation elsewhere. Amid 25 million possibly new jobs, nearly 7 million jobs will be lost. Many of these jobs lost can be reallocated. Around 5 million workers who lose their jobs due to contraction in specific industries will be able to find jobs in the same occupation in another industry within the same country. However, between 1 and 2 million jobs will be obsolete without vacancies opening for the same occupation in the same industry. ILO also indicates that current occupational gender gaps are likely to persist.

In that sense, governments and the private sector need to prioritize gender equity in the energy transition. This is a two-way effort between supply and demand. An increased number of women pursuing jobs in the green economy must go hand in hand with an increase in employer demand for women in these sectors. Policies could create an enabling environment for this to happen by 1) Enforcing the participation goals for women and racial minorities in public-funded clean energy projects, 2) Providing early job opportunities to women through public workforce development and apprenticeship programs 3) Investing in women's education focusing on renewable and clean energy skills, and 4) Enforcing anti-harassment training and work-life balance policies within the workplace.

Finally, renewable energy is a unique opportunity to empower women in the informal sector. Decentralized renewable energy (DRE) allows women to become clean energy producers and provide them with reliable and clean energy to run their own businesses. Women in rural areas are on the frontlines supporting the transition toward renewable solar energy systems as technicians, engineers, advocates, trainers, managers, and other roles. Supporting last-mile rural electrification in their own communities does not only contribute to their own financial independence and agency but also enables new opportunities for female-led businesses in the area. Ensuring that women are not only seen as users of energy but as key players across the entire renewable energy value chain will be critical for them to gain outsized access to entrepreneurship and job opportunities. As women become engaged in delivering energy solutions, they take on more active roles in their communities and consequently facilitate a gradual shift in the social and cultural norms that previously acted as barriers to their agency.

III. Prioritizing energy security in Africa.

Africa faces a unique energy gap. It is home to an estimated 600 million people who currently lack access to electricity. Further, more than 930 million do not have clean cooking fuels. These stylized facts—in conjunction with the awareness of the cumulative, historic impact developed nations have imposed on climate change—highlight why Africa should not be forced to disproportionately bear the costs of an energy transition. Africa's economic transformation and its pathway to achieving a net-zero economy will require unprecedented financial and technical support from the international community that allows the continent not to compromise its own development.

Ten African countries[1] have already agreed on a pathway to economic prosperity and net-zero. During the global SEforALL Forum in Rwanda, they converged on seven transformative actions for SDG 7. These include making modern sustainable energy available to the entire continent, pursuing a modern energy minimum, catalyzing clean cooking innovations, scaling up private and public sector investment, prioritizing the creation of green jobs, lifting the development finance restrictions, catalyzing technology

[1] Congo, Ghana, Kenya, Malawi, Morocco, Nigeria, Rwanda, Senegal, Uganda, and Zimbabwe

transfer, and supporting Africa in the development of gas as a transition fuel. This last action focused on gas—which raises many counter-opinions—has also been echoed by the Mo Ibrahim Foundation, a well-known African philanthropy.

Room 7 examined the role of natural gas acting as a base fuel complemented by renewables to facilitate widespread energy capable of supporting industrialization and development goals. In a nutshell—with Africa's population projected to nearly double its 2020 levels by 2050—the use of gas as a key transition fuel in parallel with the development of renewables is critical to the continent's development. Given Africa's demographic growth and unique energy gap, immediate and medium-term energy demand cannot be supported only by renewables. This rationale derives from the lack of consistency and technology readiness of renewables.

However, this position does not have the support of the international community. At the 26th Conference of Parties (COP26), 39 countries—including G7 nations such as the U.K., U.S., Canada, Germany, Italy, and France—pledged to stop direct international public financing for unabated fossil fuels by the end of 2022.

A small window remains open for international support for the use of gas in specific cases. The latest World Bank Group's Climate Change Action Plan recognizes that, depending on a country's circumstances, natural gas has the potential to accelerate the transition away from coal. In the medium term, natural gas can play a transitionary role by providing household and business heating solutions for these countries. In the long term, it can be compatible with a country's goal for decarbonization through the repurposing of gas pipelines and other infrastructure to support the storage and transportation of cleaner hydrogen. Alternatively, a gas power plant could facilitate higher rates of renewables integration by enhancing power supply reliability and grid stability. However, new gas infrastructure is not always compatible with the need to decarbonize economies within a shorter time frame due to its enduring nature. Thus, the World Bank will assess all investments in new gas infrastructure consistent with Nationally Determined Contributions (NDCs) and Long-term Strategies (LTSs).

The international community needs to account for the unique national circumstances of African countries regarding energy poverty, access to clean cooking fuels, and small carbon footprint. In light of COP27, it will be critical to build a consensus on the criteria for investing in gas as a transition fuel and an enabler of renewable deployment ensuring it does not lead to long-term carbon lock-in. African countries need to have enough room to negotiate access to funding for gas as a transition fuel in their low-carbon energy strategy without compromising their own development. However, this must be accompanied by an unprecedented and ambitious plan to deploy massive renewable energy on the continent. Failure to do so will further impoverish a continent and undermine the pathway to reach net-zero by 2050.

IV. Conclusion

The transition to net-zero can be considered one of the most pressing social, economic, and political transformations of this generation. While universal, it is an uneven process. Developing countries will be exposed to higher risks and hardships in their process to achieve low-carbon economies. With fragile political systems and limited fiscal space, there is a latent risk that entire communities could be stranded. Action is required now to ensure a just energy transition with due attention to people and the distributional effects. Investing in people's skills, putting gender equality at the forefront and prioritizing energy security in Africa are underlying conditions for enabling a just transition where everyone can thrive.

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