



## Global Conference

# Rural Energy Access: A Nexus Approach to Sustainable Development and Poverty Eradication

United Nations Economic Commission for Africa

Addis Ababa, Ethiopia

4-6 December 2013

## Conference Summary

### Introduction and Overview

1. Within the context of the Sustainable Energy for All (SE4All) initiative target of achieving universal access to modern energy services by 2030, this conference represented one of the first global gatherings to focus specifically on rural areas. Reaching rural isolated communities presents a key set of challenges that are closely linked with other sustainable development factors. Although discussions ranged widely, the conference focused particularly on two high-leverage areas: stand-alone photovoltaic systems and clean and improved cookstoves.

2. The over 250 conference participants came from more than 40 countries, with representation from governments, including both policymakers and energy sector managers; donor organizations and international bodies including regional associations and financial institutions; practitioners from various sectors including a diverse group of NGOs and civil society organizations; and private sector entrepreneurs, companies, and associations. Throughout six plenary sessions making up the conference and over 70 panellists there was a major emphasis on challenges and opportunities in Africa, but there were also participants and presentations from Asia and Latin America.

3. The themes and messages summarized below provide a (necessarily incomplete) snapshot of the rich conversations, learning and sharing, that took place over the course of the three-day conference.

### Key Themes and Messages

4. *The goal – Universal Access to Modern Energy Services by 2030 – is ambitious. “Business as usual” will not be sufficient. The time has come to scale up and dramatically accelerate action at all levels.* Successful models and pilot projects have demonstrated many viable approaches, but Africa in particular has made limited progress in reaching beyond urban and peri-urban areas. Even with ambitious expansion programs, anywhere from 10 to 20 percent of a country’s population (usually the poorest) will be too far from the grid to be cost-effectively connected. Projected population growth only accentuates this challenge. Also, with national budgets already strained, the capital needed to achieve universal access will have to come from the private sector, using models that do not yet exist or are just in their infancy. Yet the basic energy resources exist, and recent advances

in technology and practice at all levels – technological innovations along with innovative economic and financial tools such as micro-finance and pay-as-you-go, are making access possible and affordable.

5. ***There is no single “one size fits all” solution – no “magic bullet.”*** There is also no single definition of what is meant by “access,” a term which is understood to be context-dependent and based on the felt-needs of the ultimate consumers. Also, there is no single technological or business model that can be used everywhere. Energy technology dissemination projects that have worked well in one country can offer clues to program designers in other countries, but must not be adopted blindly. Each country is starting with different enabling or disempowering regulatory and business environments, and these must all be properly evaluated when applying programs in new environments. At the same time, the sharing of models, tools, and lessons learned through emerging networks, alliances, and information hubs, including SE4All, can make an important contribution.

6. ***While there is an emerging conceptual recognition of the nexus between energy and other sustainable development factors and concerns, this recognition must now be realized more widely in practice.*** Governments and institutions, including funders, must begin to act on the reality that energy is a key enabler for a wide range of sustainable development concerns, and that investment in energy access is a synergistic investment in health, in food security, in poverty eradication and wealth creation, in gender equality, in education, in environmental protection, and in humanitarian assistance settings. Sectoral “silo thinking” must become a thing of the past, a change that requires inter-ministerial and inter-organizational mechanisms to facilitate integrated planning and programming.

7. ***Indoor air pollution*** resulting from traditional biomass cooking and heating is a major problem for health and development – fourth in the global burden of health risk factors, resulting in as many as 4 million premature deaths each year. The annual costs of energy poverty already outweigh the needed cost of investment in achieving the SE4All access goal. The nexus approach is critical to leveraging the investments and new practices required to eliminate these deaths – practices such as empowering health professionals to prescribe improved cookstoves as a respiratory health intervention.

8. ***Access to electricity*** can transform family and community life. Among its many economic and social impacts, it can create opportunities for enterprise and productivity for both women and for the young generation. With household solar lighting systems, women farmers are able to spend more time in productive work because they do not have to rush home to cook dinner before dark. They also give working young people and women time to study at night, putting education within reach. Service providers, such as tailors, beauty shop owners and other shopkeepers can extend their hours, resulting in substantial increases in net income. Electrification of community institutions such as schools and health clinics generate dramatic increases in the utility and effectiveness of their activities.

9. ***In most contexts, the private sector is the key to reaching and providing products and services to rural isolated communities.*** Enabling factors include access to capital and financing, along with risk management and minimization in early stages of technology introduction and market development. This is a good role for private-public partnerships, which can help address the need for, and the difficulties involved in, strengthening local value chains and fostering local production of components and equipment, including the need for capacity building for the creation and support of robust and sustainable distribution, service and maintenance networks with sufficient trained and qualified personnel.

10. ***The end-users of energy services must be at the center of all programmes and strategies.*** This has been referred to as a bottom-up approach, as a demand driven (rather than supply or technology-driven) approach, and as a customer-driven approach. Ultimately, it is customers that will make choices and pay for the services they consider important. Listening to them, designing programs based on their needs, and focusing on customer service, are keys to success. The sooner that programme developers make the conceptual shift to considering rural consumers as customers rather than recipients and find ways to price modern renewable energy service delivery systems at the same level as competing traditional energy service systems, the sooner these new systems

will be adopted by their target populations. They are now spending large sums of money and money-equivalent time on non-renewable energy. If new technologies can provide better services at the same or lower cost, rural people will make the shift and adopt them.

11. ***Government actions and a supportive policy environment are critical, including intersectoral mechanisms recognizing nexus realities.*** Governments have particularly important roles to play in enabling the creation of viable long-term markets. Government actions send key signals to the private sector and to consumers of energy services. National and local level policies, goals, and programmes must take into account the role, both negative and positive, of grants and subsidies, including unintended consequences such as the creation of disincentives for private sector initiatives and for consumer acceptance of market-based products and services. Regional and cross-border concerns must also be taken into consideration.

12. ***Access to financing and capital is a key challenge at all levels.*** For entrepreneurs trying to build markets and reach rural areas with their products and services, sources of investment and working capital are extremely limited. The same is true at the other end of the spectrum: Potential consumers of energy products and services in rural areas are often limited in their ability to pay up-front costs. Most micro-finance providers are reluctant to fund energy access loans, since they are generally not considered to be “productive uses.” Innovative funding mechanisms and channels, including crowdfunding, can help to change this situation.

13. ***Rapid and accelerating urbanization directly affects rural energy access progress.*** In general, when a country’s resources focus on expanding urban energy systems, less are available for meeting rural energy needs. Conversely, when ways can be found to enhance urban energy efficiency improvements, more energy is freed up that can be directed to rural areas. An additional nexus between rural and urban energy use is the roads connecting those areas. These enhance rural commerce and economic development, but require the use of motive power. When transportation needs can be fuelled with renewable indigenous resources, including sustainable biofuels, multiple benefits are achieved.

14. ***Biofuel production and use, at the household and community level, in the transportation sector, and for industry, can support rural energy access.*** Care must be taken to consider the potential tradeoffs and nexus issues involved, particularly those relating to the selection of feedstocks.

15. ***Conservation, energy efficiency and demand-side management can make a real contribution to achievement of the goal.*** When energy is used more efficiently, in either urban or rural settings, it is usually the most cost-effective way to increase energy supplies to meet growing demand. Efficiency standards and incentives for the use of efficient loads and devices can help, along with continuing consumer education.

16. ***Standards and quality control are critically important in building consumer confidence (trust), increasing adoption rates for products and services, and ensuring sustainable and lasting impacts.*** Setting standards for equipment and electricity quality will help develop strong off and on-grid power applications. When electricity using and producing equipment is designed to meet established standards and is tested to ensure performance, consumers gain confidence and are more willing to purchase new technologies. In many cases the issue of trust or product reliability is now more critical than the issue of affordability. Customers in rural areas are willing to pay for energy products and services they can trust even if it is difficult to pay for these services. Also, when power-producing equipment meets established standards, it enables cross-border renewable electricity sales and means that mini-grid systems should be able to integrate effectively with the grid when and if it ultimately reaches the area.

17. ***Strengthening the local value chains and fostering local production of components and equipment.*** There is a need to build technological and entrepreneur capacities as well as robust distribution networks so that the local value chains are strengthened and the benefits to local communities are maximize.