



# Many diverse roads will take us to Sustainable Energy for All in 2030

By S. Vijay Iyer

Director, Sustainable Energy, World Bank Group

About a quarter of Mongolia's 2.8 million people are nomadic herders of yaks, cattle, sheep, goats and camels who live in gers — as their traditional tent dwellings are known — on the country's vast steppes. It is a simple life that has endured for centuries. Until recently, it was also a life without electricity.

That has changed for about 100,000 herder families, whose daily lives have been transformed by off-grid solar home systems which generate enough power for lights, televisions, radios, mobile phone charging and small appliances. The herders have gained access to solar power through a programme launched by the Mongolian government with support from the World Bank and the government of the Netherlands. Thanks to the National 100,000 Solar Ger Electrification Programme, over half a million men, women and children, covering half the rural population of Mongolia and 70 per cent of herders, now have access to modern electricity.

"A few years ago, country herders managed with candles and lanterns. The change in life between then and now is like night and day," said herder Baatar Khandaa. "I believe that the quality of life in the countryside and the city are now about the same."

Families can now relax and spend time together at night under electric lights. Children can learn by reading and from watching television. Herders often tune in to radio and television weather reports that help them manage their livestock, and use mobile phones to find out about market prices for wool and cashmere.

The programme provided portable solar home systems adapted to herders' nomadic way of life. Herders can easily set them up and dismantle them when they relocate. The project employed a balanced approach to pricing the systems, albeit with a subsidy that covered about half the costs. It made the systems affordable to herders while helping to expand sales.

## Rural off-grid and urban on-grid

This project is a case in which solar PV technology, because it is flexible, off-grid and affordable, is the best option to deliver electricity to nomadic people living in remote regions. More often, however, especially in urban areas, grid-based solutions are a better fit as they deliver more electricity to more homes at lower cost.

In Rwanda, for example, the government — with assistance from the World Bank Group, among others —

tripled household connections to the grid from 110,000 to 332,000 in just three years. The expansion reached schools too, with the number connected to the grid having risen by 70 per cent since 2009, from 715 to 1,226. Health centres with electric power have risen in number from 169 to 286. "Electricity is very useful to us," said Pascaline Uwizera, a first-year student in secondary school. "I can now use a computer and we carry out our evening studies properly."

The reality is that there are multiple and diverse approaches to achieve the first of the three goals of the Sustainable Energy for All initiative, namely to expand electricity to all of the 1.2 billion people worldwide who are without it, along with safe cooking solutions to the 2.8 billion who currently use wood or other biomass. The purpose behind the Sustainable Energy for All (SE4ALL) initiative launched by UN Secretary General Ban Ki-moon in 2011 — is to galvanise action for a massive scale-up in electrification efforts worldwide.

## SE4ALL a priority for World Bank Group

World Bank President Jim Yong Kim is now co-leading this initiative, and both leaders are seizing an opportunity for the UN and the Bank to develop a "new way of doing business" not just at the level of senior executives, but at the country level too. This collaboration is in its early stages, but already it shows promise. The Bank Group has mobilised several new initiatives to support achievement of SE4ALL's three global energy objectives. These objectives are to achieve, by 2030, universal access to electricity and clean cooking fuels; a doubling in the share of the world's energy supplied by renewable sources from 18 to 36 per cent; and a doubling in the rate of improvement in energy efficiency.

With 77 countries having opted in to SE4ALL so far, the World Bank Group has committed itself to doubling the leverage of its energy financing, and providing technical assistance to several opt-in countries and supporting initiatives in partnership with the Energy Sector Management Assistance Program (ESMAP). It has launched a global Sustainable Energy for All Technical Assistance Programme, with US\$15 million from ESMAP. This is starting in five countries in sub-Saharan Africa, namely Burundi, Guinea, Liberia, Mozambique and Senegal, in which a comprehensive approach will support these countries' efforts to expand energy access, and build a prospectus of investment-ready projects to facilitate that expansion. Together, these are expected to catalyse donor funding and private investment enabling countries to achieve universal access to electricity

and safe household energy solutions by the year 2030.

Another new initiative is the Renewable Energy Mapping Programme, managed by ESMAP, which will produce the maps needed by governments and project developers to identify renewable resource 'hot spots' at a national scale. This will provide vital information to investors, both public and private, interested in developing countries' renewable energy sectors. With US\$11.6 million, this programme covers resource mapping for solar, wind, biomass and small hydropower potential. Nine countries will participate in its initial stage: Indonesia, Lesotho, Madagascar, Maldives, Pakistan, Papua New Guinea, Tanzania, Vietnam and Zambia.

The Bank Group has also launched a Global Geothermal Development Plan (GGDP) to better manage and reduce risks of exploratory drilling to bring what is now a marginal renewable energy source into the mainstream, and deliver power to millions. This plan's initial target is to mobilise US\$500 million. Donors can participate in the GGDP by identifying viable projects, and through bilateral assistance, as well as existing channels such as the Climate Investment Funds or the Global Environment Facility (GEF). The GGDP will also be managed by the World Bank's ESMAP. This complements the Bank Group's financing for geothermal development, which has increased from US\$73 million in 2007 to US\$336 million in 2012, and now represents almost 10 per cent of the Bank's total renewable energy lending.

On another front, partners in the World Bank-led Global Gas Flaring Reduction (GGFR) Partnership agreed to a fourth phase of its work, which has already helped reduce gas flaring by 20 per cent worldwide since 2005. This new phase has as its goal to reduce flaring from 140 billion cubic metres (bcm) of gas flared in 2011 to 100 bcm by end of 2017, a reduction in CO<sub>2</sub> emissions equivalent to taking 60 million cars off the road.

On the analytical side, the World Bank Group led a team of experts from 15 agencies, including the World Energy Council, to produce the Sustainable Energy for All Global Tracking Framework Report. Launched in May 2013, the report provides baseline information on where we are in the journey towards meeting the global energy goals. The baseline enables everyone involved in the SE4ALL effort to track their progress towards the 2030

targets; it will provide the basis for subsequent editions of the Global Tracking Framework Report, which will be produced every second year until 2030.

In addition to its baselines on energy, the report provides data-driven guidance on where to focus efforts to achieve the SE4ALL objectives, by identifying high-impact countries that offer the most potential to make rapid progress. These include 20 countries in Asia and Africa that account for about two-thirds of all people without electricity access and three-quarters of those using solid household fuels.

They also include another set of 20 countries accounting for 80 per cent of energy consumption. These are "high-impact" countries for achieving the other two SE4ALL goals about increasing renewable energy and energy efficiency.

This is a global effort. The UN and the World Bank Group are united behind it, and they are joined by many other partners, the so-called opt-in donor countries such as Norway, Denmark, the United States and Iceland, as well as a growing number of private companies and civil society organisations, including the World Energy Council. This demonstrates a worldwide consensus behind the three SE4ALL goals. Some projects, like solar panels for Mongolian herder families, address two goals at once, delivering electricity with renewable technology. In other cases, some countries will focus on access, while others, having achieved full electrification, will make their energy sectors more efficient, and more reliant on renewables. Together, by multiplying these efforts, we have an opportunity to reach 2030 with an energy sector in transformation in a world free of poverty. □

*Solar home systems have been provided to 100,000 herder families in Mongolia*



Photo: UN Photo/Eskinder Debebe