



# The cooperative quest to provide Universal electricity access

By Jim Rogers  
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**T**his thing will bring us opportunity," the woman said, pointing a finger toward a concrete bunker in the river on the horizon. She held a tightly swaddled baby. Both of their cheeks were pink from the brisk wind that scraped across the Andes in the remote village of Cochico, Argentina.

The woman and I had arrived at the river that day for the same reason, to dedicate the community's first electric power plant. But our journeys could not have been further apart. I couldn't help but think that this distance – a giant gulf of mobility and opportunity that separated that woman's life experience from mine – might be made narrower for her children by the electricity that will flow off that river.

This year marked my twenty-fifth and final year as the CEO of a publicly traded utility. The driving mission of my career has been to move our industry in the US toward a cleaner future without compromising economic growth. Reliable, affordable, and clean electricity is a tough challenge, and one to which many talented people in the private, public, and nonprofit sectors have dedicated their lives work.

An equally massive challenge – and opportunity – exists in the parts of the world without electricity access. According to the United Nations, more than 1.3 billion people live without access to electricity.

The vast majority of these people live in rural areas that

are not connected to an electric grid. I intend to focus the next chapter of my career on finding creative, public and private solutions to electrify these parts of the world.

I am approaching this work as a student. No one has cracked the code on how to create universal access to electricity in a cost effective way, and each country has its own unique characteristics that must be understood and respected.

Nevertheless, there is a valuable perspective that utilities in developed markets can bring to developing nations. That is why Duke Energy helped lead the effort to build a micro hydro plant in Cochico as one of the energy access projects of the Global Sustainable Electricity Partnership (GSEP). It is also why GSEP, a consortium of 13 of the world's largest utilities, is working to create a fund to catalyse new sustainable energy investment.

I had the privilege of serving as the GSEP chairman over the last year, when we completed the micro hydro plant in Cochico. That experience motivated our fellow GSEP utilities to ask a larger question of what we could do on a global scale to advance universal electricity access.

While our Cochico project was financed philanthropically with grants, the experience deepened our appreciation for the importance of finding viable commercial solutions. I believe that a substantial degree of private investment is the only way to motivate the scale of development and

construction that is necessary to provide power to 1.3 billion people.

GSEP is exploring ways to create a catalyst fund to help bridge the gap in public and private markets to fund distributed and grid-tied electricity infrastructure projects in developing countries. Each participating GSEP utility could provide capital and technical advisory support to the fund, which will seek additional capital and insurance from multinational institutions such as the World Bank.

A catalyst fund under such a structure could provide capital that is more patient than traditional private sector infrastructure funds, which are not present in many of these emerging markets. GSEP utilities might work with host nation utilities and developers to help build

*Children at the dedication of the Cochico micro hydro plant*



their capacity. The fund may invest opportunistically in both innovative businesses and more traditional project development. We do not have all the answers. We need and welcome input to help shape this effort.

One thing is certain: we must be pragmatic. Efforts to spur energy infrastructure investment in impoverished nations have occurred with limited success throughout my career. I believe the opportunity to establish such a fund can work now for three reasons: cost reductions, technological advancement, and economic growth.

On the cost side, the rapid decline in the price of wind and solar construction in the past five years has been a surprise to many industry veterans. The cost of solar modules and wind turbines dropped a staggering 80 per cent and 29 per cent, respectively, in the past five years.

At their prevailing cost, wind and solar can compete with traditional generation sources in many economies, particularly nations with grids that are strong enough to support intermittent power, and where the levelised cost of electricity is above 20 cents a kilowatt hour. That price is about twice the average cost of electricity in the United States.

Turning to technology, cost declines have been even more precipitous with recent advances in battery technology. Battery technology is the “holy grail” for universal energy access because there are many geographies such as Cochico where it may never be cost effective to extend the national grid. At Duke Energy, we are running seven advanced utility-scale battery demonstrations, including one in Texas with the largest grid-connected battery in the United States. Advances in cellular technology are equally significant for improving energy access. The World Bank estimates that 75 per cent of the world’s population has access to a cell phone.

Emerging business models in sub-Saharan Africa are enabling mobile payments for household distributed generation. This development helps address the key challenge of ensuring payment for services in developing countries. I believe the pace of technological development for distributed generation will advance far beyond conventional



*GSEP Executive Director Martin Provost, Duke Energy Chairman and CEO Jim Rogers, Neuquén Province Governor Jorge Sapag and team at the Dedication Ceremony*

expectations, particularly when catalysed by funds such as the one GSEP is considering.

Lastly, consider where the majority of economic growth is likely to occur in the 21st century. It is not likely to be in mature, developed economies. The preponderance of growth will likely occur in often resource-abundant developing nations. Fortunately for the world’s poor, it has already started. This year the World Bank assessed the economic growth rate of developing nations at 5.4 per cent.

A challenge is that just as electricity access enables economic growth, prosperity enables additional investment in power infrastructure. In the business community in the US, we often refer to this dilemma as a “chicken or the egg” problem. It is a reference to the ancient parable that questioned what arrived first: the chicken or the egg? Economic development or energy infrastructure?

The chicken or the egg question may never be solved. I believe our energy question, however, has an answer. Energy access is a precursor to economic growth. We need more patient capital, more technological advancement, more replicable business models, and more bold thinking and doing to create that access.

The woman in Cochico was right. Electricity brings opportunities. We are gathered here in Korea for the World Energy Congress. We are all students. Surely we can solve this. What can you do? What can we do together? 