

LIGHTING THE WORLD

By Jim Rogers

Reviewed by William A. Mogel*

Jim Rogers, former CEO of Duke Energy, and longtime member of the Energy Bar Association, has written, with Stephen Williams, a “Big Idea” book,¹ which reflects the admonition that it is better to “light one candle than to curse the darkness.”²

The driver for *Lighting the World* is to bring electricity to 1.2 billion people in the developing world. According to Rogers, the transformation from the introduction of electricity in the developing world could occur in less than twenty years. At the outset, *Lighting the World* sets the stage:

There’s no question that electricity is the foundation for economic development, education, health and efficient farming. It is also a key driver in helping women gain equality at home, in the community, and at work. . . . It’s our obligation to assist people who lack power in their quest to get ahead and take better care of their families.³

The key to achieving the goal of making electricity available to 1.2 billion is “sustainability,” which “includes financing, technology, ownership, the environment, and a host of other issues.”⁴ *Lighting the World* offers specifics, and cites impediments, including the difficulty of how to incentivize investment in, for example, Sub-Saharan Africa:

We can’t bring electricity to the rural areas of the world using an old-fashioned industrial grid . . . [by] running copper lines from timber pole to timber pole The environment and financial impediments make that impossible. Instead, we’ll do it with modern technology: solar and other clean energy sources, new kinds of batteries . . . and plenty of innovations that are now surfacing.⁵

Chapter two describes what Rogers witnessed on trips to Africa and India. In Uganda, power is often cut when people most need it, leaving its communities dark.⁶ In the countryside, where there is no electricity, people are forced to use kerosene candles or lanterns, “which are dangerous, dirty and expensive.”⁷ Roger’s next stop was Tanzania, where 90% of the population relies on kerosene for light. He concludes: “In Sub-Saharan Africa, people pay, on average, 600

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1. Jim Rogers & Stephen P. Williams, LIGHTING THE WORLD (1st ed. 2015). *Lighting the World* has 245 pages, comprised of ten chapters with titles such as *A Vision of What Will Be*, *Darkness Visible*, *The Innovative Suppliers*, *Attracting Capital*, and *Overcoming Barriers on the Road Ahead*. Many of the chapters seem to have their origins in talks given by Rogers.

2. Adlai Stevenson, N.Y. TIMES, Nov. 8, 1962 (remarking on the death of Eleanor Roosevelt).

3. *Lighting the World*, *supra* note 1, at 4.

4. *Id.* at 5.

5. *Id.* at 8.

6. The “rationale” for cutting power was that in the evening, everyone “wants power, and there rarely is enough.” *Id.* at 33.

7. *Id.* at 34. Many Ugandan households “spend a quarter of what they earn on kerosene.” *Id.*

times more for each unit of light produced by kerosene than they would for incandescent lamps powered by a grid. The light is terrible. And it's toxic."⁸

In the chapter entitled *Innovative Suppliers, Lighting the World* describes India's Barefoot College which trains grandmothers to promote solar power in their rural communities. Their efforts have had positive results but the Barefoot College "highlights one of the major problems with doing good for free."⁹ A central issue is "finding a way to ensure that people take ownership of the new technology."¹⁰ Rogers cites Off-Grid in Tanzania—a successful, "affordable solar leasing company" that uses a variety of tools such as pre-payment for service, leased systems, system maintenance by Off-Grid, and applying a part of customers' daily fee to equipment ownership.¹¹

After surveying the status of electric systems in China, India, Indonesia, Africa, and Latin America, *Lighting the World*, follows with a chapter entitled, *The Dark Side of Power*. First discussed is the theft of electricity, which often results in death. The next several pages look at coal, and conclude with Rogers candidly admitting, presumably before the release of EPA's proposed Clean Power Plan, that we will not "be able to reduce carbon emissions from coal in a cost-effective way in the next several decades."¹² The hot button issue of hydraulic fracturing of natural gas (which Rogers believes generally good) is surveyed along with claims of ruined drinking water, waste water issues, miss-use of 260 chemicals, huge release of methane, and the possibility of mild earthquakes. The chapter concludes with a six page discussion of nuclear power. The fears generated by Three Mile Island, Chernobyl, and Fukushima are reviewed. Despite the foregoing, *Lighting the World* concludes that "nuclear plants [which produce carbon free electricity] are among the safest ways we have to generate electricity."¹³

Balanced against *The Dark Side of Power* is chapter seven, *The Future of Power*.¹⁴ Included is a discussion of new ideas such as supersizing solar, the "right" battery or electric storage device, pumped hydro-storage, batteries, wind and solar power, zero emission hydrogen, fuel cells, airborne generators, methane hydrate or crystalline natural gas ("fire and ice"), repurposing spent nuclear fuel, and the energy from ocean movements. *Lighting the World* concludes that the options for rural poor are "solar, wind and biomass. . . [and] [o]ther innovations, such as fuel cells and methane hydrate, are on the horizon but may never have practical applications."¹⁵

8. LIGHTING THE WORLD, *supra* note 1, at 39. As to the dangers of kerosene, two studies are quoted. The first is that "repeated exposure to kerosene fumes is as unhealthy as smoking two packs of cigarettes a day." The second study found that women who used kerosene lamps had a 9.4 times greater rate of contracting tuberculosis than women who were not exposed. *Id.*

9. *Id.* at 75. In Rwanda, people were given lamps which they could "pay for" with community service. Rogers admits that this model failed. In contrast, *Lighting the World* describes Solar Sister, a hybrid model of charity and for profit in Uganda, "which might be the solution for the future."

10. *Id.* at 84.

11. *Id.* at 99.

12. *Id.* at 130.

13. LIGHTING THE WORLD, *supra* note 1, at 143.

14. *Id.* at 123, 147.

15. *Id.* at 164.

Chapter eight opens with a paean to microgrids: “[M]icrogrid is pretty attractive. . . . [i]t sounds so manageable, so easy, almost magical.”¹⁶ Yet, there are negatives with microgrids. They are expensive to install and maintain, they are not suitable for low density, widespread communities, and they rely on individuals qualified in technology and maintenance and knowledgeable about the needs of the community. Despite these negatives, *Lighting the World* concludes: “All these aspects together—smart microgrids, efficient appliances, and innovative and committed customers and installers—give me a lot of hope for the future.”¹⁷

Chapter nine, *Attracting Capital*, begins: “All the good wishes in the world won’t be enough to bring light to the 1.2 [billion] unless there’s money backing them up.”¹⁸

Lighting the World cites the International Energy Association’s estimate that \$36 billion per year is required to provide universal access to electricity by 2030.¹⁹ If investment capital becomes available, it should *not* be spent “extending the grid in the traditional way.”²⁰ The better way is to spend on “distributed electricity that’s generated at the household or village level via solar or other renewable-based system.”²¹ Rogers acknowledges that the “financial math of providing off-grid electricity in rural areas is damn difficult.”²²

Lighting the World is worth reading for all who are committed to community service, such as those supportive of the worldwide activities of our Bar’s CFEBA, but especially for energy professionals. It is not intended as an encyclopedic research tool but, more importantly, as a call to action, or what Rogers calls “forward thinking.”²³

16. *Id.* at 167.

17. *Id.* at 182.

18. LIGHTING THE WORLD, *supra* note 1, at 185.

19. *Id.* *Lighting the World* suggests that one way to generate capital is to change the allocations of USAID, OPIC, and the World Bank. Additional capital could come from high net-worth families, foundations, and universities “looking to divest from investments associated with carbon output . . .” *Id.* at 194, 196.

20. *Id.* at 193.

21. *Id.* at 194.

22. *Id.* at 223.

23. *Id.* at 67. One of *Lighting the World*’s recommendations is to have the United Nations designate access to electricity as a basic human right. *Id.* at 220.