Samuel B. Miles, PhD

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Executive Profile

Energy and development leader with 15 years experience across African energy systems, international development, applied research, clean energy implementation, and institutional partnerships. Lead and coordinate a multidisciplinary 12-person matrix team across research, analytics, engineering, local implementation, finance/admin, logistics, IT, and advisory functions, with direct implementation experience in Fragile, Conflict, and Violence-affected (FCV) geographies and humanitarian energy settings. Principal architect and co-founder of a ~$500,000 research-to-implementation portfolio in occupied and Ebola-affected eastern DRC that has moved over six years from sensor-based evidence generation to live critical infrastructure performance observation built on a sustainable energy-as-a-service model for resource-poor hospitals.

Core Capabilities

- Content expert: Africa energy strategy, clean energy access, health-facility electrification, productive uses of energy, FCV/humanitarian energy systems, Digital Monitoring Reporting and Verification (dMRV), results-based finance, energy-as-a-service, and geospatial/sensor/DHIS2 health data integration for investment and policy decisions
- Program design, partnership development, government contracting, donor communications, monitoring, learning, and adaptive implementation; grant strategy development, writing, administration and reporting management
- Cross-sector engagement with ministries, provincial health authorities, national electrification regulator bodies, rural, peri-urban, and urban electrification promotion agencies, county governments, civil society, funders, African/European/American universities, health actors, and technology companies

Selected Experience

DRC Health Facility Electrification Program | Global Partnership and Program Coordination Lead | Johns Hopkins University / UC Berkeley | 2020-present | Berkeley, CA / Washington, DC / Democratic Republic of the Congo

- Lead multi-institutional research and implementation on electricity reliability, global health, emissions, and climate finance in low-resource settings, combining sensor, survey, geospatial, meteorological, DHIS2, repayment, and facility operations datasets. The Infrastructure Performance Observatory (IPO) for health-facility electrification in North Kivu integrates live power supply/demand monitoring, facility repayment and business-model tracking, and DHIS2-linked health outcomes to support dMRV for results-based finance and energy-as-a-service.
- Led the first DRC research phase; wrote the first DRC grant, designed study and signed agreements with RCHA and the North Kivu Provincial Health Division; physically deployed 55 sensors across 25 health facilities and monitored with health department for over two years through multiple armed uprisings, resulting in project's first peer-reviewed journal publication, in Applied Energy; gained access to DHIS2 routine health information system data platform through collaboration partnership with North Kivu health division; led data collection for research linking reliable electricity (>22 hours/day, 91.7% uptime) with ~41% lower mortality using longitudinal TMLE and fixed-effects methods (published in PNAS).
- Contributing founder for a 20-hospital, $500,000+ solarization project across multiple Congolese provinces; co-designed and supported deployment of HETA's co-financed critical-circuit implementation across facilities, including site selection, monitoring, deployment support. Facility-payment evidence at six focus facilities shows repayment rates above 95%; featured as case study and co-author in The Lancet Global Health; publishing learnings from live operational dashboard project through UNOPS/SEforALL Innovation Grant as a digital learning good and RBF/EaaS demonstration pilot.
- Directly lead partnership development and contracting with country and provincial government counterparts in DRC, including DPS-North Kivu since 2022, ANSER (rural electrification agency), and ARE (national electricity regulator), while translating cross-country learnings abroad through partnership with UNDP Small Grants health facility solarization fund in Kilifi County, Kenya.
- Represent Johns Hopkins Civil and Systems Engineering via the Global Alliance of Peri-Operative Professionals (clinical group in Schools of Medicine and Public Health, focusing on oxygen access), member of the WHO Health Cluster, supporting Ebola response through advocacy and science communications.

Independent Consultant and Researcher | Energy, Climate, Geospatial, and Development Strategy | 2017-present | Global / US / Africa

- Deliver research and strategic analysis for mobile money, digital commerce and telecommunications industry, cleantech and fintech organizations, oxygen access specialists, and other global development clients working on energy access, climate data, digital finance, and emerging-market innovation.
- Deliverables have included, as illustrative examples: a publicly available report on innovative finance instruments for technology innovators in low- and middle-income countries for the GSMA; a commercial sea-water air cooling project assessment for a private Mauritius-based climate finance project developer.

Lawrence Berkeley National Laboratory | Graduate Student Researcher, Grid Planning and Economics | 2022-2023 | Berkeley, CA

- Reviewed minigrid techno-economics and regulatory trends across selected US and African states within the Grid Planning, Economics and Integration Group.

Plentify Pty Ltd. | Early Associate / External Consultant, Energy Efficiency and IoT Startup | 2016-2017 | Cape Town, South Africa

- Developed market, tariff, water-stress, service-delivery, hardware, supplier, and regulatory analyses for a distributed solar-thermal storage and demand-side management company.
- Mapped South African, Africa-focused, and global clean-tech investors, impact investors, accelerators, competitions, and commercial lenders aligned with the company's model.

African Leadership University | Projects Facilitator and Program Designer | 2015-2016 | Mauritius

- Directed project-based strategy engagements for 60 first-year students from across Africa, with project clients including Uber, IBM, and L'Oreal.
- Designed and launched English Immersion program for 14 non-anglophone students and hired two English-language faculty.

Dalberg Advisors | Consultant | 2013-2015 | Dakar, Senegal

- Supported foundations, DFIs, and private-sector clients on energy access, agriculture, infrastructure, resilience, and investment strategy across African markets.
- For a Fortune 500 energy client, led interviews, supported data analysis, managed synthesis of focus groups/interviews, and led research on solar lighting, mini-grids, and LPG usage for a three-state Nigeria energy-access engagement.
- Contributed to IFC/World Bank Lighting Africa market work on solar lighting products across Sub-Saharan Africa and to Ghana industrial park, Rockefeller 100 Resilient Cities Dakar, Gates Foundation Mali agriculture, WEF/Grow Africa, and CGIAR engagements.

Selected Funding and Portfolio

- UNOPS/SEforALL Powering Healthcare Innovation Grant, $75,500, 2025-2026; wrote successful proposal for DRC implementation continuation and public monitoring of six facilities.
- GiveWell / Open Philanthropy Research Innovation Grant, $20,000, 2024; MasterCard Emerging Faculty Seed Grant, $10,000, 2024.
- HETA/USAID award, $209,089.10 grant within a $287,935.10 total project budget; explicitly built on my dissertation/UC Berkeley/RAEL monitoring of 25 North Kivu facilities and prior live-monitoring data.
- CITRIS and the Banatao Institute Technology Seed Grant, $60,000, 2021; wrote successful proposal supporting the original DRC sensor and reliability evidence platform.

Selected Publications, Tools, and Engagements

- Operational dashboard for health-facility electrification results-based finance and energy-as-a-service, integrating telemetry, DHIS2, repayment, and implementation data, commissioned by United Nations Office of Project Services via Powering Healthcare Innovation Grant; north-kivu-power-named.samuel-b-miles.chatgpt.site/ (Permissioned access by request)
- **Miles**, S., et al. Infrastructure Reliability as a Health Systems Intervention: Lessons from a Health Facility Electrification Pilot in Eastern DRC. Manuscript under review.
- McCord, R., **Miles**, S., Mughuma, J., Kammen, D., Kwong, L. 2026. Assessing the Impacts of Sufficient and Reliable Electricity in Low-Resource Healthcare Facilities. Proceedings of the National Academy of Sciences.
- Vinci, S., Kwong, L., **Miles**, S., et al. 2026. Reliable electricity to advance quality health care in low-resource settings. The Lancet Global Health. https://doi.org/10.1016/S2214-109X(25)00537-6
- **Miles**, S., Mughuma, J., Moner-Girona, M., Kammen, D., Kwong, L. 2025. The Power of Health in the Democratic Republic of the Congo. Applied Energy. https://doi.org/10.1016/j.apenergy.2025.126830
- Kersey, J., **Miles**, S. et al. 2025. A Geospatial Perspective on Electrification Strategy in Urbanizing Africa. Applied Geography. https://doi.org/10.1016/j.apgeog.2025.103647
- **Miles**, S., Jaffe, A., Levine, J. J., Kibala Bauer, G., White, Z. 2023. Digitalising Innovative Finance: Emerging instruments for early-stage innovators in low- and middle-income countries. GSMA
- **Miles**, S., Kersey, J., Cecchini, E., Kammen, D. 2022. Productive uses of electricity at the energy-health nexus. Development Engineering. https://doi.org/10.1016/j.deveng.2022.100101

Education, Languages, and Field Experience

- PhD, Energy & Resources Group, UC Berkeley, 2025; Designated Emphasis in Development Engineering. Dissertation title: “Critical Circuits: Health Facility Electrification in the African Great Lakes Region.” Advised by Dr. Daniel Kammen.
- MA, International Energy, Sciences Po Paris, concentrations in Environment and Africa, summa cum laude, 2013; BA, Ethics, Politics & Economics, Yale University, 2011.
- Field experience: Democratic Republic of the Congo, Ghana, Haiti, Mali, Mauritius, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Uganda.
- Languages: English and French native; Spanish intermediate; Wolof basic.
- Programming: Python (intermediate)
- Citizenship: United States; France
- Relocation: willing to relocate to Nairobi; can work remotely/from Washington, DC during transition and can obtain Kenya work authorization.