

Call for Expression of Interest:

Development of the 'Global Assessment of Electricity in Healthcare Facilities' report

1. Purpose of the position

The purpose of this consultancy is to support WHO and partners on the development of the 'Global Assessment of Electricity in Healthcare Facilities' report.

The consultancy entity will support the health and energy team within the Air Quality and Health (AQH) Unit of the WHO's Department of Environment, Climate Change and Health.

2. Background

Achieving universal health coverage, a key element of the Sustainable Development Goals (SDG), means ensuring that everyone has access to quality healthcare yet not enough attention is given to energy's role in healthcare. Energy is critical for the delivery of health services. When health facilities have sufficient and reliable electricity, women can more safely give birth at night and during emergencies such as COVID-19, medical equipment can be powered and better sterilized and clinics can preserve life-saving vaccines for new-borns, children and adults.

Yet, despite energy's importance to delivering health services, it is estimated that tens of thousands of health centers across low- and middle-income countries are not connected to the grid and lack electricity. A similar number of hospitals suffer from frequent and debilitating blackouts. In parts of Sub-Saharan Africa, for example, only 28% of health facilities are estimated to have access to reliable electricity¹. This puts patients at risk and makes the jobs of healthcare workers all the more challenging. This acute shortage of electricity access can be particularly detrimental in emergencies such as COVID-19 when reliable electricity is the need of the hour to save lives.

The task of increasing access to reliable and modern energy in health facilities faces a number of barriers. For example, in many parts of Sub-Saharan Africa and South Asia, grid extension cannot keep up with population growth and the power demands that come with it. Additionally, many health facilities and the communities they serve are often very remote and characterized by poor surrounding infrastructure and low energy demand, making them unattractive to traditional energy service providers (e.g. utilities). Indeed, the business-as-usual approach to electrification is proving costly, unreliable and too slow. As a result, these facilities sometimes resort to the use of diesel systems, which not only are polluting, but also not affordable, while diesel supply is often unreliable, especially in rural areas, resulting in a sporadic service.

Heightened political commitment to universal health coverage and energy access, coupled with recent advances in clean energy technologies and the impetus for climate action, present a timely opportunity

¹ Adair-Rohani H, Zukor K, Bonjour S, Wilburn S, Kuesel A, Hebert R, et al. Limited electricity access in health facilities of sub-Saharan Africa: a systematic review of data on electricity access, sources, and reliability. *Global Health Science Practice*. 2013;1(2):249-26

to improve access to quality health care while making health facilities more resilient and climate friendly. Off-grid renewable energy solutions present an opportunity to provide clean, reliable and cost-effective electricity to hospitals and health centers, which can help improve the quality of health care services provided to communities. In particular, the dramatic cost reductions and technological improvement of renewable energy technologies in the past decade makes off-grid renewables an economically and technically viable solution that can be deployed in a fraction of the time and costs of the centralized grid. The increasing array of portable and energy-efficient medical devices that are being specifically designed for resource-constrained environments also have the potential to generate considerable benefits for health facilities.

Capitalizing on this momentum and harnessing the enormous potential of clean energy to improve the delivery of health care doesn't come without challenges. Chief among them is the dearth of data/information available about energy and health care. Reliable data on energy access in health facilities, for example is currently very sparse. A WHO-led review found nationally representative data for only 14 developing countries globally². A comprehensive literature review conducted by Duke University's Sustainable Energy Transitions Initiative concluded that energy in health facilities is one of the least researched and understood issues within the broader energy and development field³. In addition, it is not sufficient to know only if the facility is electrified or not. Availability (hours), reliability and quality of the electricity service also determines to what extent the facility is actually able to use the medical appliances (and conversely whether it requires a back-up solution). This lack of data results in low levels of awareness of and priority given to the provision of reliable and affordable energy to health facilities.

This lack of data was identified as a critical gap at both the International Conference on Renewable Energy Solutions for Healthcare Facilities and at the Clean Energy for Health Care Conference, held in Singapore and Nairobi in 2018 and 2019, and was highlighted as an opportunity for joint action for key stakeholders active in the energy and health nexus. Subsequently, the World Health Organization, the International Renewable Energy Agency, the World Bank and Sustainable Energy for All agreed to commission a 'Global Assessment of Electricity in Health Facilities' report as a way to build the evidence base for investing in health facility electrification.

The report is a contribution to the global Health and Energy Platform of Action⁴.

3. Objectives

Under this Terms of Reference, WHO and partners (SEforALL, World Bank and IRENA) are seeking a consultancy entity to produce a 'Global Assessment of Electricity in Healthcare Facilities' report. The

² Adair-Rohani H, Zukor K, Bonjour S, Wilburn S, Kuesel A, Hebert R, et al. Limited electricity access in health facilities of sub-Saharan Africa: a systematic review of data on electricity access, sources, and reliability. *Global Health Science Practice*. 2013;1(2):249-26

³ <http://www.efdinitiative.org/our-work/projects/energy-and-development-systematic-review>

⁴ The global Health and Energy Platform of Action aims to enhance multisectoral collaboration between the health and energy sectors and mobilize political commitment and financial resources to ensure universal access to reliable electricity for healthcare facilities and to support the universal access to clean cooking. The Platform, convened by WHO, UNDP, UNDESA, and World Bank, in cooperation with the International Renewable Energy Agency, was launched in May 2019, in the framework of the 72nd World Health Assembly.

report is meant to provide an authoritative, comprehensive, and up-to-date view of the state of electricity access in health facilities in Africa and Asia where the energy access gap in health facilities is most acute.

The report is intended to:

- Draw attention to the lack of electricity access as well as to the lack of reliable electricity in several healthcare facilities in low-income and middle-income countries in Africa and Asia and on the opportunity to provide better health services by powering health care facilities with distributed clean and sustainable energy solutions.
- Inform decision-making by serving as a benchmark against which progress in electrifying healthcare facilities can be measured.

In particular, the report is intended to answer/address the following key questions:

- How many health facilities (or what fraction of health facilities) in Sub-Saharan Africa, South Asia and Southeast Asia lack access to electricity? And how many lack access to reliable electricity, and what is the extent of unreliability?
- How many people worldwide and in specific regions (i.e. Sub-Saharan Africa, South Asia and Southeast Asia) rely on health facilities that lack access to electricity or access to reliable electricity? What portion of these people are women and children?
- What key actions and investments are required to achieve universal health facility electrification based on clean energy solutions by 2030 in accordance with SDG 7?

The target audience for this report are: (i) agencies responsible for, or involved in, the financing and planning of health systems strengthening programs, including but not limited to Ministries of Health, Energy, and Finance, Rural Energy Agencies and planning commissions; and (ii) actors involved in the funding and implementation of energy access solutions for healthcare facilities, including donors, investors (in particular impact investors), private sector service providers, and development partners, foundations and NGOs (both in health and in energy sectors).

The report will include, as much as possible, real work examples and case studies. All recommendations will be based on solid analysis.

4. Scope of work

To deliver on the above objectives, the selected consultancy entity will undertake the following tasks.

1. The consultancy entity will develop a methodology/approach for carrying out the study. The methodology shall include, among other aspects, the approach to be used to analyse the enabling frameworks for the acceleration of electrification of health centers, and to identify lessons learned and recommendations.

The consultancy entity will also be requested to cooperate with WHO staff and consultants in the development of:

- a. Definitions and indicators to be used in the study. This includes, but is not limited to, definitions for different levels of 'electricity access' that take into account, where possible, the levels of and multidimensional nature of electricity access for healthcare

facilities⁵ (e.g. capacity, reliability, availability, etc.). Where relevant and feasible, existing frameworks for monitoring and evaluating the multidimensional nature of electricity access (e.g. Multi-Tier Framework) may be utilized or adapted.

- b. Approaches and indicators to be used for the country estimates as well as for the disparities/inequalities analyses.

2. The consultancy entity will carry out an overview of the needs and enabling frameworks for the electrification of healthcare facilities based on clean energy solutions. This activity will include, but may not be limited to, the following aspects.

- a. Identification of energy requirements for healthcare facilities in resource-constraint settings, based on typical health services provided as well as other relevant factors using WHO health systems data to the largest extent possible. The analysis should also look into energy needs vis-à-vis necessary medical appliance use particularly in response to pandemics similar to COVID-19. The overview will also mention existing energy audit tools and platforms as well as minimum (technical) quality standards. Although the focus of the analysis will be on electricity, a less in-depth analysis on thermal energy needs covered by non-electrical sources will also be included.
- b. Overview on trends on medical devices, with focus on progress in terms of energy efficiency as well as suitability for use in off-grid renewable energy systems in rural areas and harsh conditions.
- c. Overview of policies, regulations, financing approaches, institutional and cooperation frameworks that have been put in place at regional and country level in order to accelerate electrification of health centers through renewable energy, and identification of lessons learned and good practices.
- d. A snapshot of implemented programmes / projects targeting health facility electrification should be included to better inform future initiatives on the risks, challenges and success factors.
- e. Insights on techno-economic aspects, and on pros and cons, of different solutions for electrification of healthcare facilities (e.g. grid extension, mini-grids, stand-alone systems; based on solar, diesel, hybrid etc.) Solutions should also inform the reader where these solutions present the best case and, to the extent possible, shed some light on the conditions where the solutions would be most viable.

3. The consultancy entity will coordinate with other WHO staff members and consultants working on data stocktaking and analysis, in order to develop the report narrative based on the outcome of that analysis⁶, including (among others) on the following aspects.

- a. Country estimates:
 - i. Percent and/or number of health facilities that lack access to electricity, according to methodology and indicators previously identified and agreed upon;

⁵ Healthcare facilities categorization may differ from country to country (e.g. district hospitals, health centers, health posts etc.).

⁶ The consultancy entity will be required to develop the narrative and build the relevant report sections, based on the data which will be provided by other WHO staff members and consultants specifically working on the data gathering and analysis.

- ii. Number of people who rely on health facilities that: (i) lack access to electricity all together and (ii) lack adequate/reliable power, according to the different indicators and methodology previously agreed upon. Wherever possible, gender-disaggregated data may be included to demonstrate the gender dimensions of a lack of power in health facilities.
- b. Disparities/Inequalities: Disparities in the provision of electricity services in health care facilities:
 - i. Within countries (where feasible)
 - ii. By geography (rural vs urban) and region (Africa/Asia)
 - iii. By connection approach, i.e. grid-connected, mini-grid or off-grid stand-alone system.
 - iv. By generation technology (in particular for off-grid systems), e.g. solar PV systems, only diesel, hybrid systems.
 - v. By type of health care facility or tiers of health care provision (primary health centers, clinics, district hospitals, etc.) as previously agreed upon.
- c. Gaps
 - i. Gaps in information about the state of electricity access in health facilities.
 - ii. Recommended approaches to fill those information gaps as well as to monitor progress on electrification of health centers.

4. The consultancy entity will coordinate with WHO colleagues and consultants working on energy data gathering and analysis as well as with the partner in charge of developing the report section on investment assessment⁷ and will ensure consistency across the overall report, including in the executive summary, way forward recommendations sections.

5. In coordination and under the supervision of WHO, the consultancy entity will produce the 'Global Assessment of Electricity in Health Care Facilities' report that encapsulates the findings, data, analysis deriving from the assignment as well the findings, data and analysis deriving from the data gathering and analysis activity carried out by other WHO staff and consultants. The report will include a chapter on recommendations to accelerate electrification of health centres based on clean energy solutions, based on the analysis carried out as well as on possible innovative approaches. The report will also include a chapter on investment assessment which will be entirely developed by a partner.

6. The consultancy entity will make available all data/figures used for the report development (in both their raw/original and final formats) to WHO.

7. The consultancy entity will support WHO on the development of data visualizations (e.g. maps, graphs, etc).

5. Key deliverables and timeline schedule

⁷ The analysis on the investment assessment will be developed by a partner and will not be responsibility of the consultancy entity.

Detailed list of deliverables and relative timeline will be provided by WHO. Deliverables may include the preparation of the inception report, detailed proposed methodology as well as a number of working versions of the report draft, addressing relevant comments provided by WHO and partners during the assignment period.

The expected start date for this consultancy is 1 September 2020.

The expected overall timeframe for the project is 1 year.

6. Coordination

The consultancy entity will report to, and maintain close contact with, WHO throughout the assignment, including through periodic calls, as will be indicated by WHO. The consultancy entity will work with WHO (and report partners, as will be indicated by WHO), which will provide guidance and facilitate access, when and as appropriate, to certain stakeholders, data set and documentation. All deliverables will be reviewed, and the consultancy entity will be required to satisfactorily address all comments provided. The consultancy entity will also be required to work in cooperation with other WHO staff members and consultants and incorporate their inputs in the report. The consultancy entity will also be required to incorporate feedback and advice from external peer reviewers who will be identified by WHO and partners.

The consultancy entity is expected to work remotely. The consultancy entity will be required to update WHO through periodic email and/or calls. Periodic written updates may be required, as will be indicated by WHO.

The consultancy entity will make available all data/figures (in both their raw/original and final formats) to WHO during the assignment.

7. Intellectual property

WHO owns the intellectual property of the report.

8. Qualifications and Experience

Qualifications of the key expert(s) involved in the project include:

Advanced university degree in field related to the project;

At least 7 (seven) years of relevant experience;

Demonstrated experience with carrying out similar/relevant analyses, including on relevant policies and development finance;

Excellent analytical skills;

Excellent written communication skills in English;

Excellent interpersonal skills;

Experience working in both energy access and public health.

9. Travel

The consultant(s) may be expected to travel, upon request. Costs associated with travel will be covered by WHO, in addition to agreed consultancy fees.

10. Selection process

The consultancy entity will be selected through a competitive process in accordance with WHO's operating policies and procedures on procurement of services. Following a review of the initial submissions, short-listed entities will be invited to prepare a detailed proposal based on indications that will be provided by WHO. This phase may be followed by interviews with selected proponents.

11. Submission of Expressions of interest

Expressions of interest must be received no later than **17:00** Central European Time on **3 July 2020**. Submissions must include a copy of the CV of the key expert(s) who will be involved in the project as well as the clarification on their envisaged role. Submissions must also include a brief description of similar/relevant work previously undertaken by each the expert(s). The expressions of interest are to be delivered electronically to householdenergy@who.int, with the subject line 'Application for consultancy – Technical support for Development of the Global Assessment of Electricity in Healthcare Facilities report'.