Technical Standards as Tools for Cohesive Governance and Policies for the SDGs

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Abstract

Technical standards are powerful and widely used tools for good governance (SDG16) (USAID, 2024). The International Electrotechnical Commission (IEC) recently launched its Global Impact Fund (IEC-GIF) designed specifically to further encourage standards-based solutions to support achievement of the SDGs. In its current format, grants are awarded to small and medium sized enterprises (SMEs) to work in partnership (SDG 17) with national standards organisations and other entities on projects implementing solutions that have the potential for replication and scale up. A recently launched project on circularity and e-waste in Kenya is presented as an example.

Background

International standards serve as specifications or guidelines established by international bodies to ensure the quality, safety, and efficiency of products, services, and systems. Conformity assessment systems determine whether a product, service, or process complies with specified standards. Standardisation, as a broader concept, provides a common language and framework for all sectors, fostering interoperability, efficiency, safety, and overall quality.

International standards and conformity assessment systems form the foundational basis for the policies and regulations that underpin the SDGs. Aspirations to achieve a just energy transition, quality health and education for all, efforts to achieve net zero and addressing the complex, interconnected challenges embedded in the SDGs, cannot be realised without a structured and cohesive international standards framework.

International standards, representing a global consensus of state-of-the-art knowledge and expertise, play a crucial role in guiding policies, fostering innovation, and ensuring the coordination and effectiveness of global efforts. The International Electrotechnical Commission (IEC), alongside partner institutions like the International Organization for Standardization (ISO) and the International Telecommunication Union (ITU), are the custodians of this system.

Energy access in Sub Saharan Africa is a severe problem. According to the International Energy Administration (IEA), 80 % of the "electricity deprived" live in rural areas where solar based microgrids and stand-alone systems are the most viable ways to provide service (IEA, 2022). Stand-alone systems are controversial and not seen as long-term solutions (CSIS, 2024). Because solar is an intermittent source, reliable back-up is a necessary system component and lithium-ion batteries are already important for electric vehicles and backup power and their use is growing exponentially (UNDESA, 2024). Lack of reliable electricity makes it difficult - if not impossible - to provide the other basic infrastructure services including food (SDG2), health (SDG3), education (SDG4) or water and sanitation (SDG6). As former UN Secretary Geneal Ban Ki Moon said in 2012, “Energy is the golden thread that connects economic growth, social equity, and environmental sustainability.”

Africa is rich in natural resources including lithium. According to the Atlantic Council, 30% of the World's critical minerals are in Africa (Atlantic Council, 2024). Extraction of minerals, particularly those occurring in low concentrations, can have significant environmental and health impacts and can also lead to human rights abuses (Environmental Health News, 2023). For sustainability, lithium must be embedded in a virtuous circle where much of it is recycled. Batteries must be designed for recycling (Tomkat Center, 2021).

IEC Global Impact Fund

The IEC Global Impact Fund is a proactive initiative advancing the vision of a safer and more efficient world, leveraging the transformational power of standardisation in addressing contemporary social, economic, and environmental challenges (IEC, 2024). This initiative underscores the importance of technology and quality infrastructure in positively impacting society.

Through a diverse portfolio of projects and collaborative partnerships, the IEC Global Impact Fund is designed to link and integrate the global standardisation framework with the SDGs and the development finance architecture.

Four topics have been identified where international standards and conformity assessment systems could have an impact. The first is turning e-waste into e-resources (SDG 12). The second is electrical access in rural areas (SDG 7). The third is renewable energy, energy storage, and innovative energy services (SDG 7). And the fourth is climate change, energy efficiency, and net-zero emissions (SDGs 13, 7).

SMEs are awarded grants from the IEC Global Impact Fund for projects that demonstrate the application of international standards and/or conformity assessment services to address a defined challenge.

The Inaugural Project

E waste is an enormous problem but also an enormous opportunity in many areas including Sub-Saharan Africa (Ellen MacArthur Foundation, 2024). The e-waste problem will only grow as more people move to electric vehicles and to solar and wind as sources of renewable, reliable and affordable energy.

The first project of the IEC Global Impact Fund, Catalyzing innovation for circular models in Africa – turning battery e-waste into e-resources, is intended to support an SME-led project in Africa to promote sustainable battery e-waste management (IEC, 2024a). IEC briefly introduced the project at the 2023 High Level Political Forum and the 2024 Partnership Forum(IEC, 2024b).

As indicated earlier, access to electricity is a significant problem in Sub-Saharan Africa, which has an overall electrification rate according to the World Bank of just over 50% (WB, 2021). Lithium batteries are seen as key to addressing Africa's energy deficit (Shell Foundation, 2022).

The main Implementing Partner of the project is Differ Community Power (DCP) (IEC 2024c). DCP specialises in off grid reliable renewable energy for schools and hospitals (DCP, 2024). The project will determine the feasibility of using second life lithium batteries to rehabilitate solar PV installations at critical locations such as schools, health centres and hospitals in Kenya. Batteries are the limiting factor of solar facilities with much shorter life spans than the panels and other components.

DCP will produce second-life batteries that can be used to rehabilitate at least five solar PV installations. Performance will be compared to at least five facilities upgraded using new batteries. The project will also be used to train local contractors on installation and maintenance procedures. A key to ensuring long-term support of basic infrastructure service technologies is having a trained workforce. This not only means that local communities have reliable infrastructure services but that they also have the good jobs that go along with the service providers (Kelly, 2022).

Some Questions to Consider

- What can be learned from this project that could be generalised to other infrastructure services?
- How should and could standardisation be included in STI for SDG roadmaps?
- What are some other areas and ways that the use of voluntary consensus standards could be used to accelerate achievement of the SDGs?

Policy recommendations / conclusions

- The UN should encourage Member States, observers, representatives of UN entities, civil society, and other non-state actors to engage and partner with the international standards system through the IEC Global Impact Fund.
- The UN should use its convening power to bring together the voluntary consensus standards community and interested Members States and other stakeholders to see how standards and standards activities can be better leveraged for STI4SD and the SDGs.

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