

Delivering Inclusive Next-Gen Solar Energy Research in Collaboration with Organisations of Persons with Disabilities

Guidance for TEA@SUNRISE Network by Global Disability Innovation Hub

Background

TEA@SUNRISE is an international, interdisciplinary network led by Swansea University built to identify and deliver opportunities for next-generation photovoltaic systems (PV). TEA@SUNRISE is part of the Transforming Energy Access (TEA) platform funded by UK aid from the UK Government to support the technologies, business models, and skills needed to enable an inclusive, clean energy transition. The TEA Platform has recently launched its strategy on gender equality, disability, and social inclusion (GEDSI) and is working to integrate GEDSI approaches throughout the platform via training, toolkits and technical assistance.

To promote a just and equitable energy transition, TEA@SUNRISE is committed to mainstreaming a gender equality, disability, and social inclusion (GEDSI) framework across its activities and enabling active participation of diverse voices, including people with disabilities. [Link to TEA@SUNRISE's GEDSI Statement](#)

Notably, in 2025 TEA@SUNRISE hosted a webinar on Inclusive Market Research, run by the Global Disability Innovation (GDI) Hub and Value for Women (VfW). To further equip TEA@SUNRISE members to integrate the lived experiences of people with disabilities, women and women with disabilities in the research and projects they deliver.

Building from this TEA@SUNRISE direction, GDI Hub has prepared this guidance note for researchers on delivering inclusive next-gen solar energy research in collaboration with organisations of persons with disabilities (OPDs).

Disability and energy access

Disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis (United Nations, 2006). An estimated 1.3 billion people, or 16 percent of the world's population, live with disabilities, and not all disabilities are visible (World Health Organization, n.d.).

Globally, persons with disabilities are disproportionately left behind and in poverty. As the UN reports in its flagship [Disability and Development Report 2018](#), the main barriers for persons with disabilities are:

1. Disability related discrimination and stigma
2. Lack of accessibility to physical and virtual environments
3. Lack of access to assistive technology (AT)
4. Access to essential services and rehabilitation
5. Lack of support for independent living

Clean, undisrupted, and affordable energy, and an enabling energy ecosystem are beneficial for all and are basic needs for people with disabilities with the current status quo of compounding barriers (TEA & GDI Hub, 2025).

Case study: SolarEar, Howard Weinstein (2002)

Globally it is estimated that people with hearing impairments make up around 460 million, of which 7% are children from LMICs, who miss their education as they either couldn't access hearing aids and replaceable batteries or afford them (as they typically cost \$1 a week). Innovated by people with hearing impairments, Solar Ear was developed as the world's first solar-powered hearing aid with chargeable batteries. The long life of solar-powered batteries (up to three years), along with lower price and maintenance costs, has enabled them to reach 30 countries.

Disability inclusive research

Inclusive design goes beyond technical standards (accessibility); it is a participatory process that centres the lived experiences to achieve equity by capturing the unique and diverse experience of the end users, beneficiaries and involved & impacted stakeholders. Adopting a diverse participation into design processes is a necessary approach to ensure equitable outcomes and benefits from opportunities. It enables an understanding of the social dynamics, accessibility and accommodation requirements and inequalities in the context of implementation.

Inclusive design:

- Places people at the heart of the process
- Delivers results 'with' and not 'for' across the whole delivery cycle
- Facilitates collaboration & co-design
- Anticipates and is responsive to differing needs and wants

The same is true for inclusive research. Please find the following video of Abdi Omar CEO and Founder of Abdi Enterprises, speaking to the importance of diverse inputs in research: <https://www.youtube.com/watch?v=M4clUDECMVs&t=34s>

Methodologies could include:

- Data disaggregation across the whole process, scoping through delivery to impact appraisal
- Diverse review panels
- Diverse personas
- Journey / day-in-a-life mapping
- Photo-diaries
- Participant observation
- Focus groups
- Co-design workshops

Meaningful participation of people with disabilities is a cornerstone of the United Nations Convention on the Rights of Persons with Disabilities (CRPD), rooted in the powerful principle of “nothing about us, without us.” OPDs are invaluable stakeholders to include within the process.

Organisations of People with Disabilities

An OPD, sometimes called Disabled People’s Organization (DPO), is:

“a representative organization or group of persons with disabilities, where persons with disabilities constitute a majority of the overall staff, board, and volunteers in all levels of the organization”

(Disability Rights Fund n.d.).

As taken from CBM’s [glossary](#):

- OPDs represent the interests of their members with disabilities and have the mandate to advocate for the realisation of their human rights and lobby for the consideration of their interests.
- Some OPDs focus on specific disability groups, such as women, children, or indigenous persons, or on impairments like visual, psychosocial, hearing, or physical. Others concentrate on issues like education, health, gender, or political participation.
- OPDs operate at various levels; locally, nationally, regionally, and internationally. In some cases, umbrella organisations – such as [Joint National Association of Persons with Disabilities, Nigeria](#) - represent multiple OPDs and advocate on their behalf.
- OPDs are different from organisations **for** persons with disabilities, which can include (development) organisations that have a specific disability focus.

Why Collaborate with OPDs?

Collaborating with OPDs enables evidence building by centring lived experiences, including diverse voices, and developing policies, programmes, products, and services that reflect real-world needs. Particularly, partnership with local OPDs could help energy sector researchers and businesses to expand their consumer base and empower people with disabilities as clean energy champions.

- **Note:** It is important to recognize and compensate the time and value of OPD contributions, for example financially.
- **Note:** Meaningful participation of OPDs in research means engagement throughout the ideation, design, delivery, and outputs (across the cycle).

How to locate OPDs?

GDI Hub's [Global OPD Map](#) is an open-source data collection project resulting in the largest-ever documentation of OPDs across the transnational disability community.

At an international level – [International Disability Alliance](#) – and regional level – [Joint National Association of Persons with Disabilities, Nigeria](#) – umbrella organisations may have connections to local OPDs. In some instances, a contact list or map of OPDs may be available with these actors.

- Use a “snowball” approach to build on any initial contacts you have, to seek out more information on OPDs in your location.
- Be mindful that OPDs may sometimes represent a smaller subset of the diversity within disability, for example women with disabilities and D/deaf people.
- Purposefully and proactively reach out to underrepresented groups.
- People with disabilities in rural contexts may have more informal set ups and could be difficult to identify or contact through regular communication channels.

[Link to an OPD database in the UK.](#)

How to collaborate with OPDs?

CBM Global offer [11 practical tips for working with OPDs](#).

Valuable collaboration and partnership with OPDs can take a diversity of forms, from them taking up an advisory, to design, feedback, testing, training and leadership roles. A foundation to do this well is accessible and inclusive ways of collaborating. Below we outline key disability inclusive principles to be taken on when collaborating with OPDs.

- Ensure accessibility for equal participation of people with disabilities (e.g., hosting research activities in accessible venues)

- Provide reasonable accommodation (e.g., sharing interview questions well in advance)
- Account for assistive technology in ways of working (e.g., use of screen readers)
- Ensure OPD participation is active, sustained, and influential

4 Principles to guide your collaboration with OPDs

1. **Engage with OPDs from the outset of a research:** Often OPD engagement for research is tokenistic or siloed from the overall methodology. However, it is important to ensure OPDs and people with disabilities have an opportunity to influence the research from the preliminary phase. Particularly, OPDs can contribute to shaping the research questions and methods as suitable for their equal and meaningful contribution, and relevant to the needs of the community.
2. **Position OPDs as co-researchers and equal collaborators:** While OPDs and people with disabilities may not speak the same academic language, they are experts of their own situation and better understand how disability and energy access intersect with their everyday life and livelihoods. From this view, it is critical that the role of people with disabilities are not restricted to being a survey respondent, interviewee, or other forms of passive contributor.
3. **Maintain an open and inclusive feedback loop:** Data collection should preferably be a two-way process. Share back the insights collected from OPDs and people with disabilities throughout the research phase to receive critical feedback and frame arguments or recommendations collaboratively.
4. **Accessible engagement tools:** Recognise all people with disabilities may not be able to engage with all research tools in an equal manner. For example, people with certain impairments may prefer sharing their responses verbally over writing them up in a poster, during a co-design workshop. Similarly, some digital communication tools could be more accessible and compatible with assistive devices. Hence, always check for accessibility requirements before organising any research activity.

Considerations for research in collaboration with OPDs

- Ensure appropriate ethics are in place for participation of persons with disabilities. Sometimes, but not always, the involvement of persons with disabilities as a part of the research as informants can extend the time taken for ethics approval. As can a requirement for local ethics. Make sure this is accounted for. Within the ethics process ensure to account for individual capacity to consent, agency and positionality of persons with disabilities – with a focus on empowerment around energy use; rather than prescriptive measures.
- Budget for reasonable accommodation and accessibility in advance.

- Budget for the remuneration of OPDs, plus travel and refreshments in advance and seek trusted local knowledge to inform remuneration value, payment structure and transfer mechanism.
- Select OPDs to ensure diversity across disability types, gender, and regional contexts.
- Involve OPDs throughout the process, including the decision on conclusions and recommendations from the research.

Next step actions for Next-Gen Solar researchers

To achieve the targets of Sustainable Development Goal 7 (SDG-7) - ensuring access to affordable, reliable, sustainable, and modern energy for all - it is essential to deliver clean, uninterrupted, and affordable energy, and create an enabling energy transition ecosystem for people with disabilities (1 in 6). From this view, GDI Hub encourages energy sector researchers and businesses to proactively reach people with disabilities and OPDs, to understand their unique needs and co-develop solutions that work for all. Here are some high-impact short-term actions that the TEA@SUNRISE network partners can pursue:

1. Identify local OPDs operating in your region
2. Host a knowledge-exchange or working session with a selected few local OPDs to familiarise them on energy access research and innovation and learn about their work in the region
3. Map potential opportunities or synergies for collaboration
4. Co-design an 'Opportunity Statement or Research Brief' highlighting the scope of inclusive research, as relevant to your energy access work

Developing a simple, one-page 'Opportunity Statement or Research Brief' could be a potential entry-point to nurture a stronger partnership with local OPDs. In the long-term, OPDs could also join as a TEA@SUNRISE network partner and act as 'local solar energy champions'.

References

1. [TIDAL N+ Inclusive Research Guidance](#)
2. [Guidance for conducting collaborative research with people with disabilities](#)
3. [Opportunities for Disability-inclusive Energy Access](#)
4. [Conducting User Research with People with Disabilities](#)
5. [Engaging with organizations of persons with disabilities in humanitarian action](#)