POWER FOR ALL RESEARCH SUMMARY

From planning, to financing, to scale, a pathway to inclusive energy access by Poor People's Energy Outlook

POWER FOR ALL

Practical Action has produced a three-part guide to delivering inclusive energy access, through their annual publication, the Poor People's Energy Outlook (PPEO).[1,2,3] Inclusive energy access ensures that the challenges of remoteness, poverty, and gender are fully considered in service provision. By evaluating electrification programs in Kenya, Bangladesh and Togo against these criteria, the guide highlights best-practice for bottom-up energy planning, policy, finance, and scaling. This research summary explores the guide's key recommendations for ensuring inclusive energy access at scale.

Despite strong willingness to pay from energy poor, high costs are often the biggest challenge in delivering energy access. Decentralized renewable energy (DRE) is often the most economically viable solution in rural areas. Subsidies, however, are needed to ensure that the cost of service is affordable to the poor.

$27 billion

SPENT ANNUALLY BY THE POOR ON LIGHTING AND PHONE CHARGING

35%

POOREST POPULATION WHO CANNOT AFFORD SOLAR HOME UNITS

80%+

ELECTRICITY ACCESS FINANCE FOR DRE

- The energy poor already spend approximately $27 billion annually on lighting and mobile-phone charging. Despite strong willingness to pay, the poorest 20–40% of the population could not afford a solar home unit in Kenya and Bangladesh. (P1, p.34,48; P2, p.7)
- Based on the energy demand survey of 12 communities, most households expressed need for at least 8 hours per day of supply to power multiple home appliances, corresponding to Tier 3 access, as defined by the World Bank. There is, however, a clear affordability gap from basic, 4-hour-per-day Tier 2 access to Tier 3 access, with the cost of Tier 3 more than double that of Tier 2. (P1, p.3,30,44,58)
- Based on Practical Action's analysis of 95 settlements in each case-study country, DRE is the least-cost solution for 66% of the unconnected population in Bangladesh, 68% in Kenya and 100% in Togo. However, despite this finding about one-third of rural households in Kenya and Bangladesh cannot afford a solar home system, underscoring the challenge of affordability. (P2, p.2,3)
- Affordability of energy solutions particularly affects women, who are on average poorer and less able to access credit. However, PPEO finds that electrification and clean cooking access programs continue to overlook the needs of women and girls. (P3, p.4,13,29,31)
- Subsidies for DRE solutions are therefore important to achieve inclusivity. They are, however, often politicized and are major barriers to reforms of the mismanaged utilities, due to the vested interests in business as usual. (P1, p.3,69; P2, p.11)

The finance gap is critical. Leveraging falling DRE costs and efficiency improvements, and targeting high impact programs are ways of reducing investment costs while ensuring the highest marginal impact.

- There is a discrepancy between the finance needed and available for DRE. Based on Practical Action's geospatial analysis with the data input of 95 settlements, DRE should receive more than 80% of total electricity financing in the least-cost pathways. In 2017, however, only 25% of funding is going to DRE in Bangladesh, 15% in Kenya and 5% in Togo. According to Sustainable Energy for All's estimate, barely 2% of global electrification finance is going to DRE.[4] (P2, p.2,3,6)
- Falling prices, efficient appliances and rethinking consumption level can lower the total global investment required for electricity access by 71% to about US$14 billion annually. (P2, p.6)
- Community uses of energy for street lights, health facilities and schools costs very little but have high potential impact. They account for less than 1% of the electrification finance in Bangladesh and Kenya, and 7% in Togo. Energy for schools and street lighting are among the highest priority for most communities. (P1, p.34,48,62; P2, p.3)

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By the Numbers:

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Inclusivity and scalability are often at odds. Integration of different energy access solutions may help scaling access and ensuring inclusivity.

» Many NGO-led projects demonstrate excellent inclusion and community engagement but benefit only a few communities at a time. Difficult terrain coupled with scattered population proves to be a challenge in energy access delivery. (P3, p.7, 65, 66)
» Costly financing options, low end-user consumption and policy shortcomings are cited as the main barriers to scale, which can be overcome by delivery models that integrate grid, off-grid and clean cooking solutions. However, pursuing off-grid solutions does not necessarily guarantee better inclusivity. (P3, p.1,2,3,62,67)
» Mainstreaming gender in energy access program design is needed to improve inclusivity. Access to clean cooking has a particularly strong positive impact on vulnerable populations, such as women and children. On average, women spend 58 hours a week collecting fuel and cooking. (P1, p.3,34)
» Tariff setting is one of the most complex issues for mini-grids' inclusivity and economic viability. (P3, p.62)

Share the Message

» High costs are the main barrier to inclusivity of energy access programs. Subsidies are needed for vulnerable populations. Falling asset price, efficient appliances and rethinking consumption level can cut total electrification costs by 71%.
» When faced with a choice between inclusivity and scale, governments most often choose scale. Integrating different off-grid and mini-grid solutions and clean cooking technologies can help improve the scalability and inclusivity at the same time.

Sources:
1. "Poor People's Energy Outlook 2016: National Energy Access Planning from the Bottom Up". Practical Action. 2016. (Herein P1)
2. "Poor People's Energy Outlook 2017:". Practical Action. 2017. (Herein P2)
3. "Poor People's Energy Outlook 2017:". Practical Action. 2018. (Herein P3)
4. "Energizing Finance: Understanding the Landscape," SE4ALL, 2018.