ELECTRIFYING ECONOMIES

SOLUTIONS: TAKING ACTION

TODAY

The legacy market has been focused on standalone minigrids and has not yet achieved scale or realized the full potential of distributed energy.

But as costs are falling and technology is improving, only a small push is needed to get the sector on a pathway to rapid expansion.

FOUR ACTIONS CAN TRANSFORM THE SECTOR

DECREASE COST ⇩

SHAPE DEMAND

DISTRIBUTED ENERGY CAN UNLOCK THE POTENTIAL OF A NEW ENERGY ECOSYSTEM

INCREASE INVESTMENT ⇧

ENABLE EXPANSION

Cost

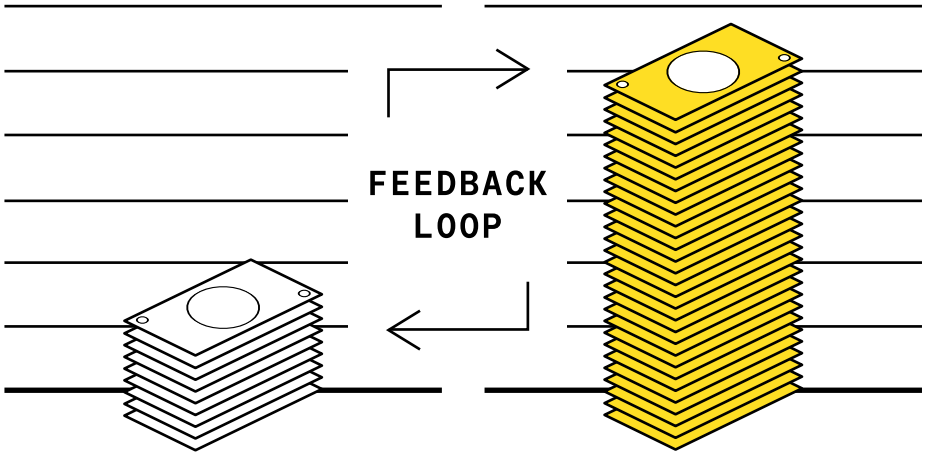
US$0.20/kWh

MINIGRID COST OF POWER

Investment

US$120B/yr

DISTRIBUTED ENERGY INVESTMENT



THE PROBLEM

Technology improvements and cost reductions in energy technologies are currently slow to reach small developers and local utilities.

WHAT NEEDS TO HAPPEN

- → Streamline supply chains, remove barriers to import, and support local business to create distribution networks
- → Standardize low-cost specifications, defined by developers and manufacturers, that can be procured at scale
- → Secure volume guarantees by underwriting bulk orders, working through governments or large companies
- → Facilitate access to planning data, support digital innovation, and bring technology to scale

SOLUTION

TECHNOLOGY FACILITY: PROCUREMENT & INNOVATION
Harness cost disruptions in storage, smart meter, solar PV, and other relevant distributed energy technologies via ambitious pooled market commitments, and drive continued innovation through a dedicated fund.

FURTHER READING

MINIGRID COSTS

- → MINIGRIDS IN THE MONEY, RMI 2018
- → MINI GRIDS FOR HALF A BILLION PEOPLE, ESMAP 2019
- → BENCHMARKING AFRICA'S MINIGRIDS, AMDA 2020
- → STATE OF THE GLOBAL MINI-GRIDS MARKET REPORT, BloombergNEF and SEforALL, 2020

RENEWABLE ENERGY AND BATTERY COSTS

- → NEW ENERGY OUTLOOK, BNEF 2019
- → BREAKTHROUGH BATTERIES, RMI 2019
- → RENEWABLE POWER GENERATION COSTS IN 2019, IRENA 2020

POOLED PROCUREMENT FOR ENERGY EFFICIENCY

- → UJALA PROGRAM, EESL 2020

BULK PROCUREMENT FOR MINIGRID COMPONENTS

- → BULK PROCUREMENT PILOT (design stage only), CrossBoundary 2020

THE PROBLEM

Lack of demand-side management and stimulation results in high costs to consumers, lost revenue for suppliers, and limited expansion of power to other productive use activities.

WHAT NEEDS TO HAPPEN

- → Carry out integrated energy planning to identify productive uses and link them with appropriate supply
- → Ensure access to affordable, energy efficient solutions that meet user needs and support productive uses of electricity
- → Provide appropriate financing, including loans for smallholders, insurance, and credit guarantees
- → Offer extension services to help rural farmers and businesses make better use of modern energy services

SOLUTIONS

ENERGY EFFICIENCY
Reduce energy needs through efficiency, including passive and active solutions, by enforcing product standards, supporting the supply chain manufacturers or importers and last-mile distributors, and investing in getting the right solutions to consumers at low cost.

PRODUCTIVE USE AND SOCIAL SERVICES
Link electrification with national programs on agriculture, health, education, and small business support, to leverage synergies and capture benefits across areas.

FURTHER READING

APPLIANCE EFFICENCY

- → EFFICIENCY FOR ACCESS COALITION

PRODUCTIVE USE

- → POWERING AG, Power for All
- → EGUIDE
- → CAPTURING THE PRODUCTIVE USE Dividend, RMI 2020
- → 65 LIVELIHOODS APPLICATION, SELCO 2019
- → MINI-GRID INNOVATION LAB, CrossBoundary 2020

THE PROBLEM

Finance flows remain far short of the estimated US$40 billion required annually to reach universal electricity access. The economic crisis caused by Covid-19 threatens to slow progress even further.

WHAT NEEDS TO HAPPEN

- Step up actions by international public finance to stimulate market development and private sector engagement, particularly in nascent markets
- Prioritize least-cost, sustainable energy solutions and support them with the right incentives to give private investors the confidence required for long-term investment in energy infrastructure and assets
- Use proven business models and financing mechanisms to unlock additional private capital and leverage further investment

SOLUTION

UNIVERSAL ENERGY FACILITY
The Universal Energy Facility is a multi-donor results-based financing facility that provides incentive payments to eligible organizations that are deploying energy solutions, providing verified end-user electricity connections (minigrids and solar home systems), or providing clean cooking alternatives based on predetermined standards. The facility will begin accepting project applications in 2020.

LOW-COST CAPITAL
Mobilize finance to address the unique capital needs of distributed energy project developers in emerging markets, through a blended capital fund that leverages concessional capital and encourages commercial financing flows.

FURTHER READING

- ENERGIZING FINANCE, SEforALL

ENABLE EXPANSION

THE PROBLEM

Without certainty provided by clear plans and regulatory frameworks at national levels, investment in distributed energy will stall. Current business models and approaches are far from sufficient for unlocking the full potential of the sector. High financial risk further threatens the scale-up of the distributed energy sector, which is characterized by small to medium enterprises.

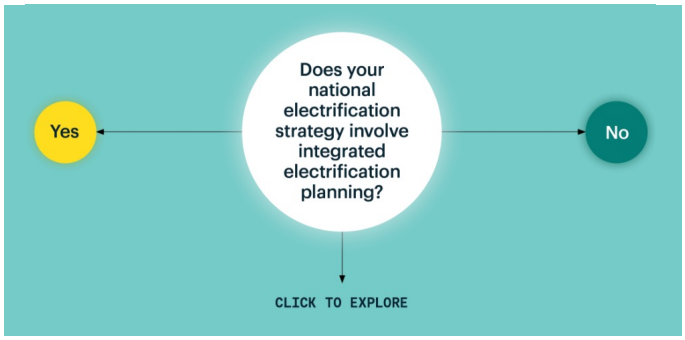
WHAT NEEDS TO HAPPEN

- → Adopt national electrification plans that clearly identify the role of different technologies and resources required to achieve universal electrification
- → Improve planning at a national level, based on least-cost approaches and geospatial mapping
- → Enforce clear regulatory environments that define crucial issues such as tariffs, licensing, technical standards, and grid interconnection
- → Establish political risk insurance instruments for minigrid and off-grid developers
- → Demonstrate bankable business models that leverage the benefits of modern distributed energy resources
- → Develop project pipelines, alongside national agencies or utilities

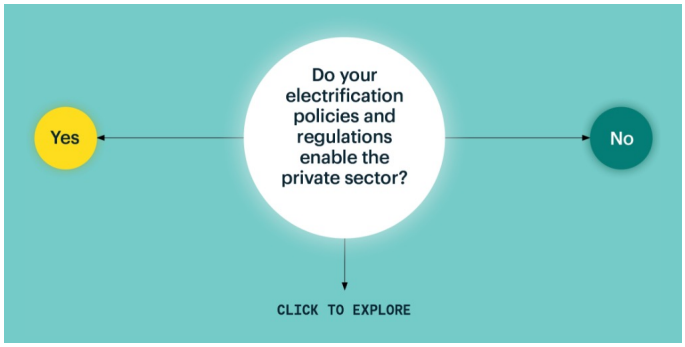
SOLUTION

INTEGRATED DISTRIBUTION FRAMEWORKS
Apply effective governance models to restructure the distribution sector and accelerate electrification; for example, through the application of concession agreements at the utility level.

INTEGRATED ELECTRIFICATION PLANNING
Carry out geospatial electrification planning to identify least-cost strategies for providing electricity and the associated energy services necessary to meet human needs and contribute to sustainable development.



INVESTMENT-GRADE POLICY AND REGULATIONS
Draw on best-in-class electrification policies and regulations to develop a robust regulatory framework enabling private sector actors to contribute to national electrification objectives and unlock investments in the sector.



FURTHER READING

- → INTEGRATED ELECTRIFICATION PATHWAYS, SEforALL
- → GLOBAL ELECTRIFICATION PLATFORM, ESMAP
- → REFERENCE ELECTRIFICATION MODEL, MITEI
- → ENERGY ACCESS, DATA AND DIGITAL SOLUTIONS, TFE 2020
- → MINIGRID TENDERING PLATFORM, Odyssey
- → UTILITIES 2.0: INTEGRATED ENERGY FOR OPTIMAL IMPACT, Power for All 2020

ELECTRIFYING ECONOMIES

The Electrifying Economies project demonstrates the role distributed energy will play in ending energy poverty and catalyzing a green and equitable recovery from the Covid-19 crisis. It draws on the latest data and research from around the world to show how distributed renewables can provide sustainable, affordable, and reliable power for all. The project provides information to support policy makers and investors in taking action today, to realize this potential.

#ElectrifyingEconomies
ElectrifyingEconomies.org