



British Chamber of Commerce – Energy Catalyst

8 July 2019

Smart Power Myanmar
Founding Members:



Smart Power Myanmar
managed by:



Smart Power Myanmar was formally launched in April, 2018, by two organisations that share a commitment to finding innovative strategies for improving the lives and wellbeing of people around the world.

We exist as part of The Rockefeller Foundation's Smart Power Initiative, whose goal is to advance public-private partnerships to accelerate the availability of electricity, spur economic development and transform the livelihoods of millions of people globally.

We are run by Pact, an international development organisation operating in nearly 40 countries and one of the largest currently active in Myanmar. Pact has previous experience in engaging rural Myanmar communities through its microfinance programmes. Through its Energy For Prosperity initiative, it has helped bring energy access to low-income communities as part of an integrated approach to development.

In addition to The Rockefeller Foundation, our founding partners and core stakeholders include the World Bank, USAID, Yoma Strategic Holdings and Shell.

Smart Power Myanmar encourages the most appropriate incentives, policies, financing and understanding, to roll out mini-grids and other innovative electrification solutions, and create a decentralised renewable energy ecosystem.

Myanmar Electrification and Mini-Grid Market Size

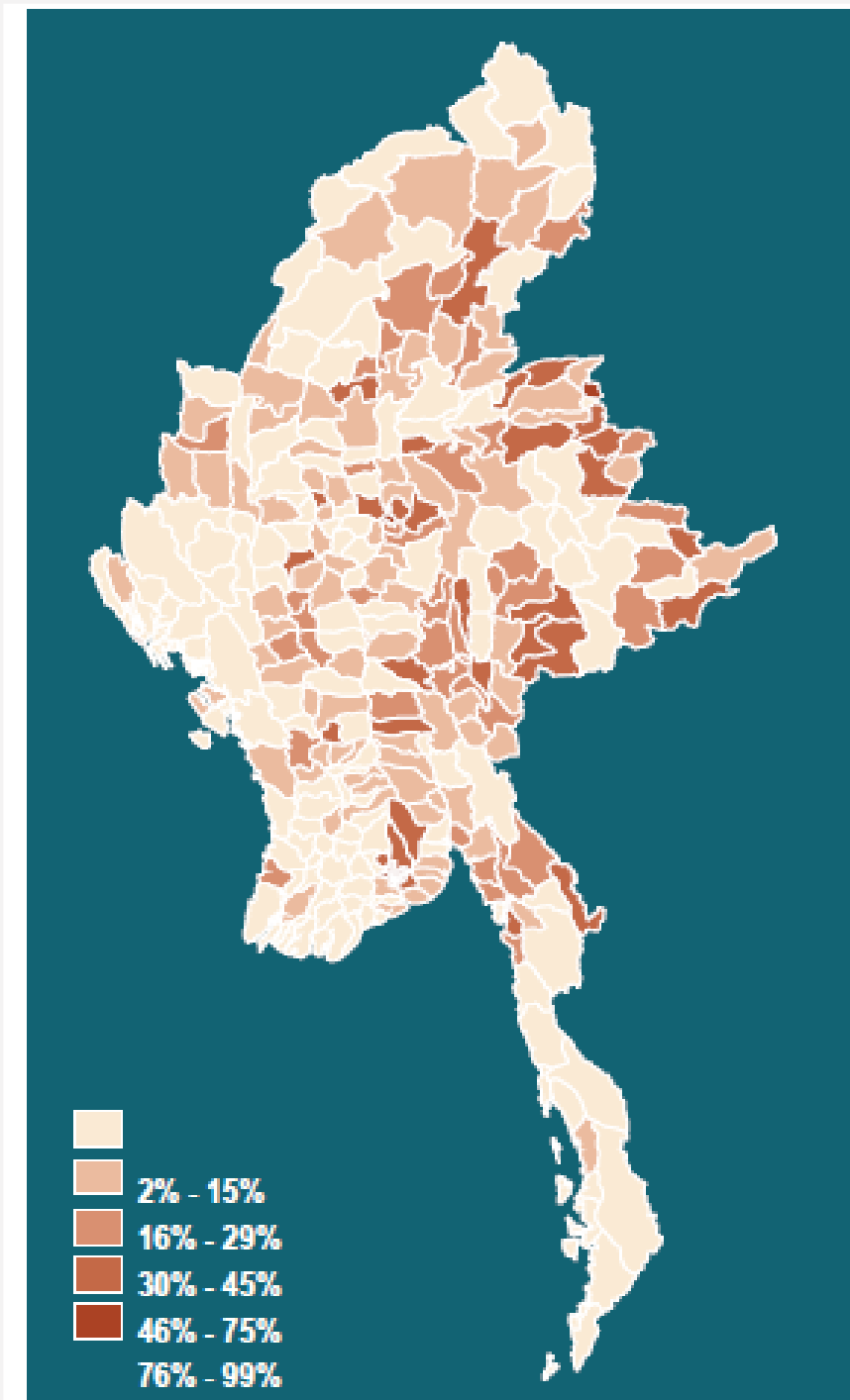
Lack of reliable electricity access: Only 42% of population has electricity grid access → ~30mm people without access

Government of Myanmar (GoM) has set **ambitious electrification goals** and established programs to encourage mini-grid development in off-grid areas to support not only residential demand but small-scale industrial and productive uses

The **National Electrification Project (NEP)** categorizes off-grid villages into 5 'phases' with national grid arrival over 10 years away for phase 4 and 5 villages; these communities will require off-grid solutions in the interim

Market Assessment finding: Up to 2,253 mini-grid projects (covering ~2mm people) potentially viable by 2020 if key measures are addressed, including:

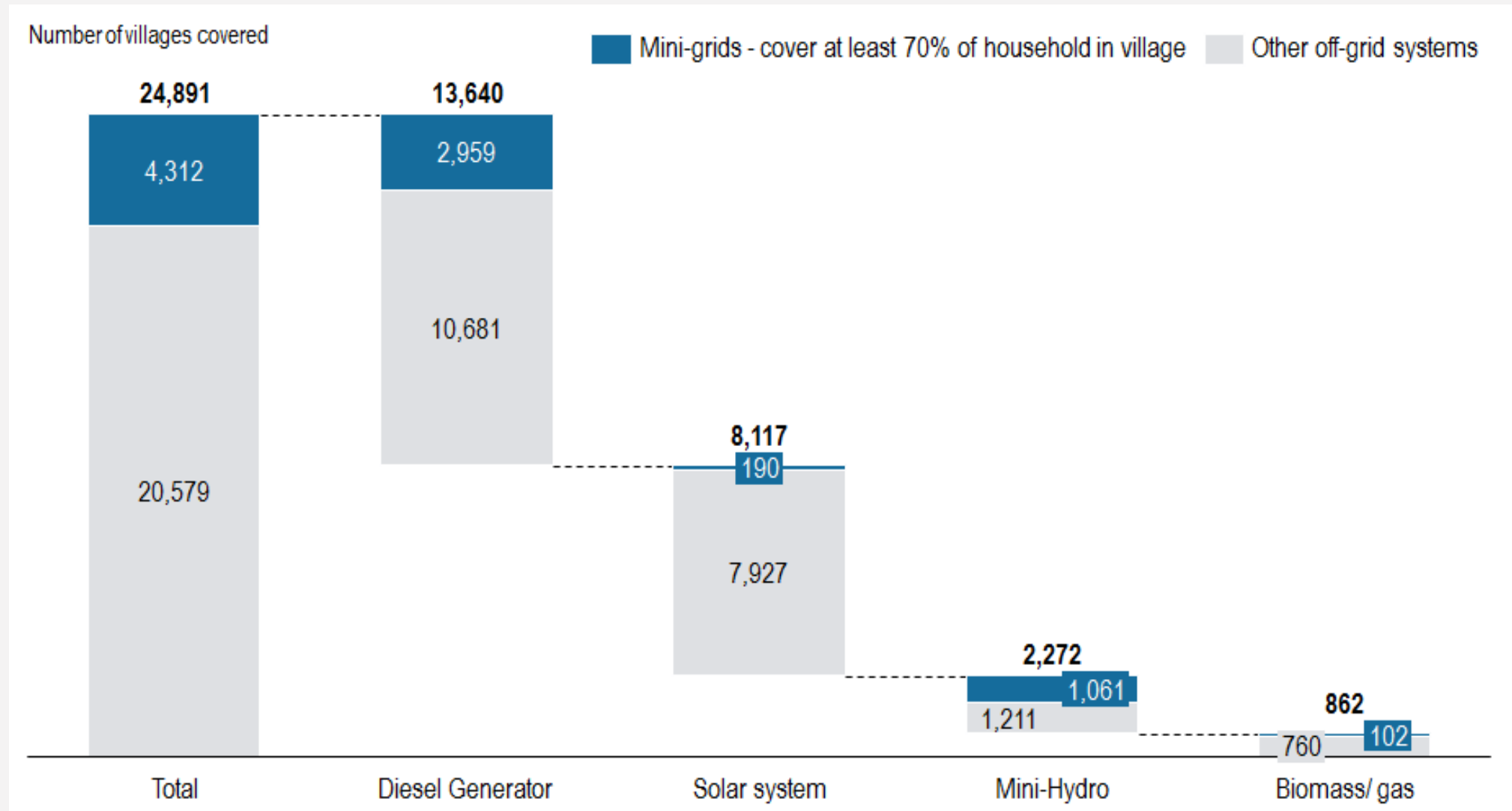
- Increasing power demand through equipment finance and technical support
- Driving regulatory reform to enable mini-grids to transition to on-grid systems when they arrive
- Enabling economies of scale by pooling resources across developers
- Redesigning and increasing the availability of investment subsidies
- Improving the developers' access to debt financing to improve investment returns.



Source: Township level data mapped by The Asia Foundation

Current market for off-grid

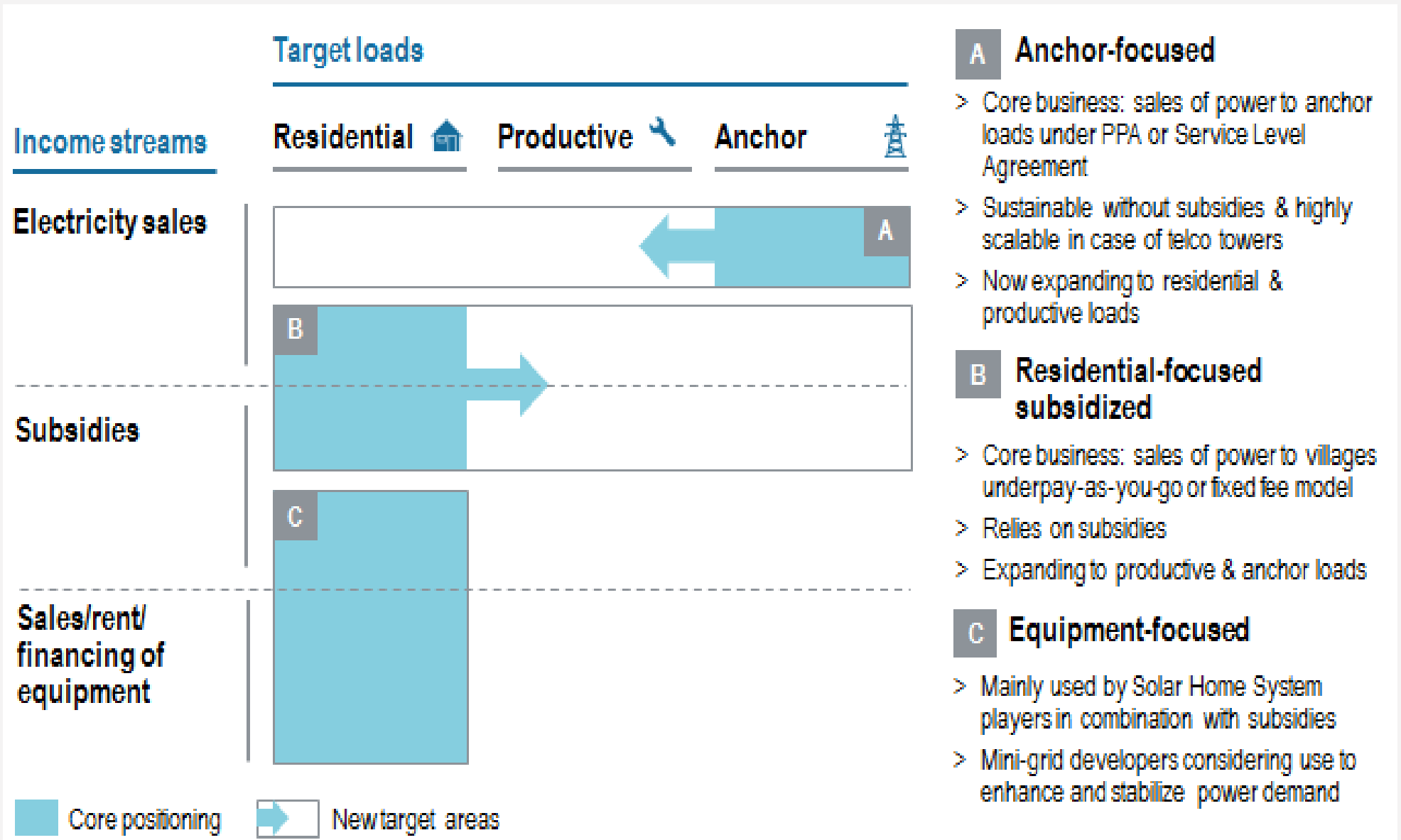
Data from the Department of Rural Development (DRD) show that almost 25,000 villages are electrified (i.e., provided with electricity) through off-grid solutions including diesel generators, solar systems, mini-hydro systems and biomass generation systems.



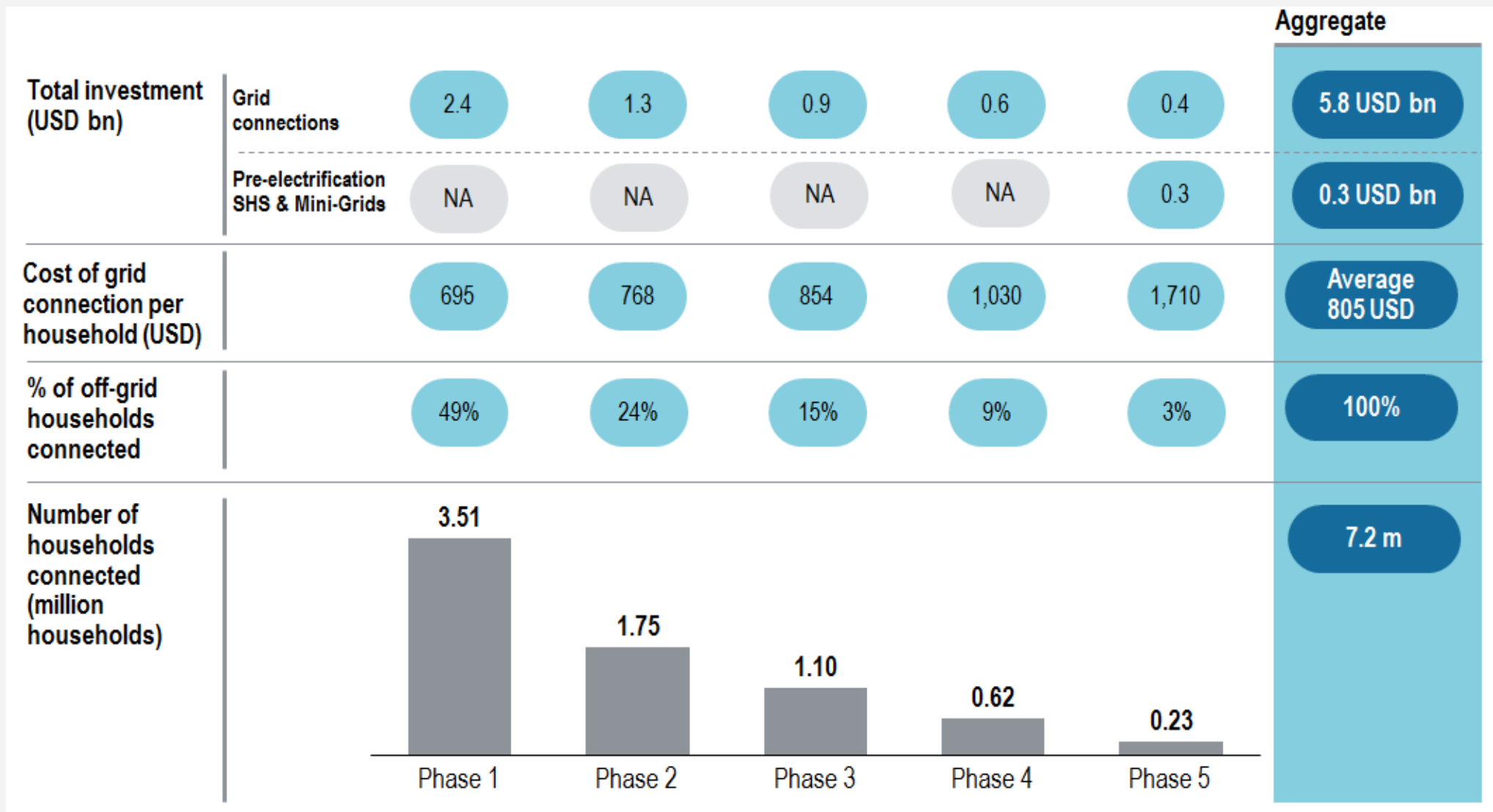
DRD estimates that about 4,312 of these off-grid systems supply electricity to at least 70% of households in the village where they are located and hence can be defined as mini-grids

94% of the population with electricity access through mini-grids can only enjoy Tier 0 to Tier 2 electricity access

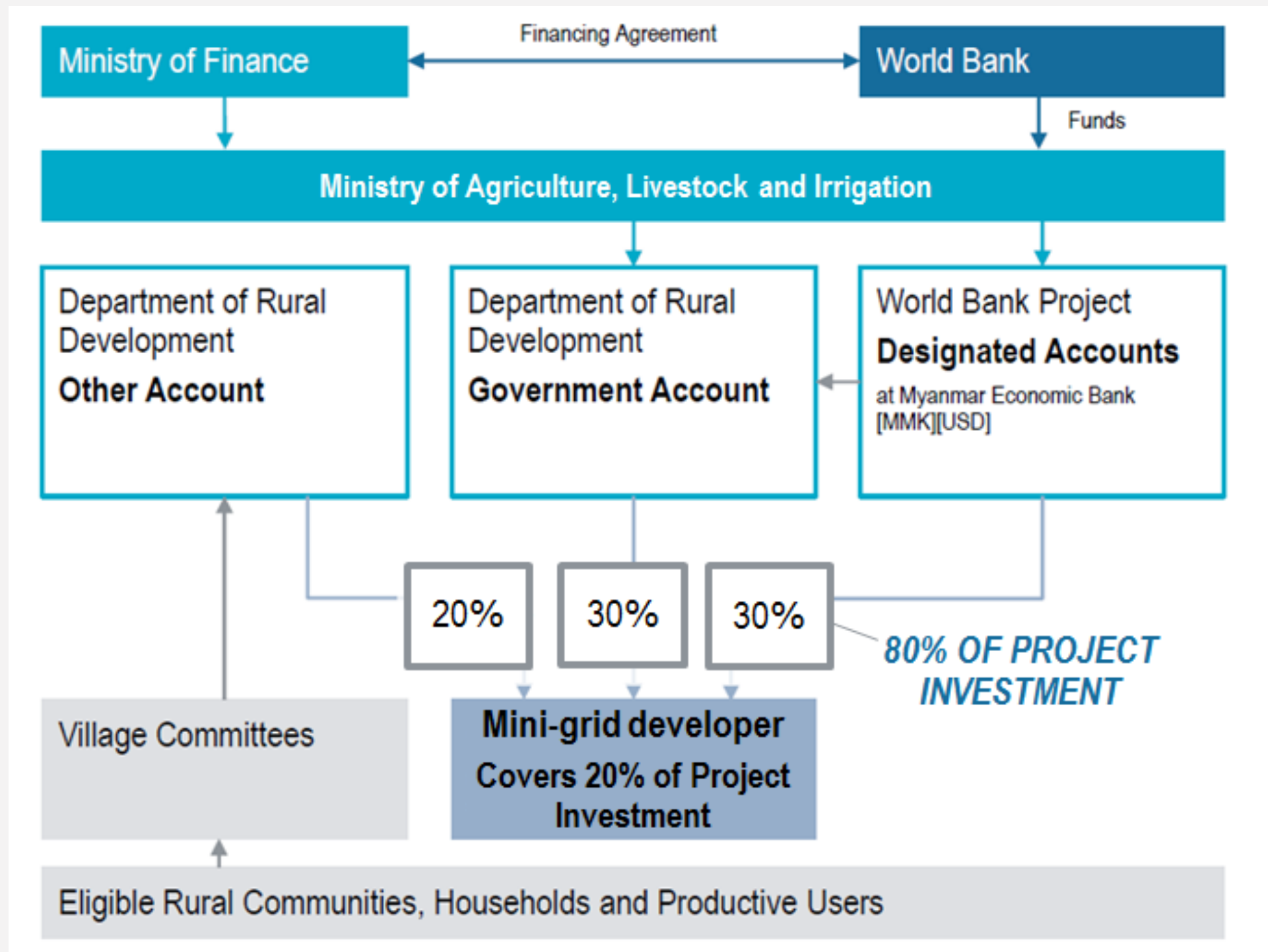
Existing Business Models



NEP Costs



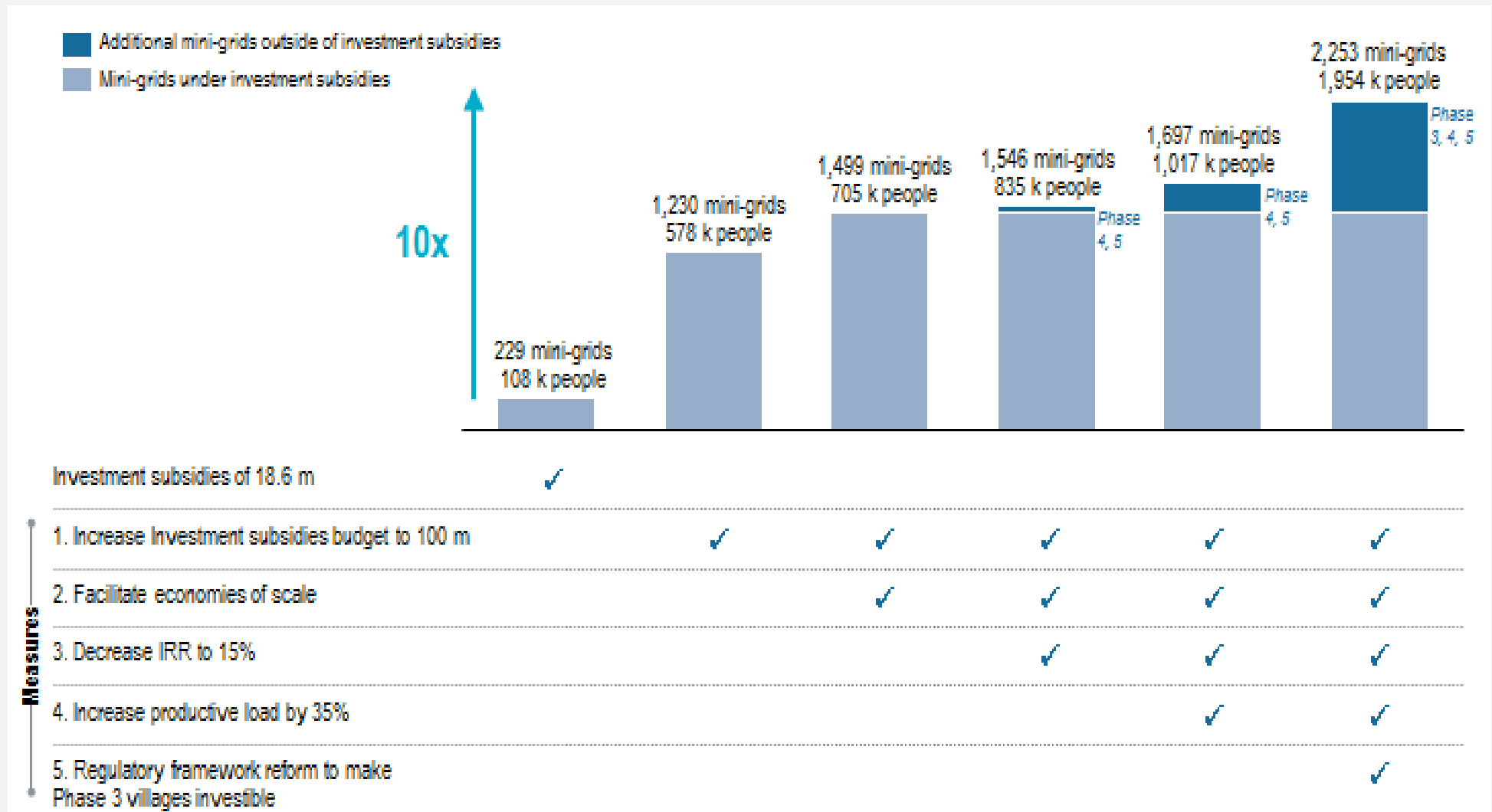
Money Flows in Mini-Grid Subsidy System



A village is eligible to be considered for a mini-grid project if it meets the following criteria:

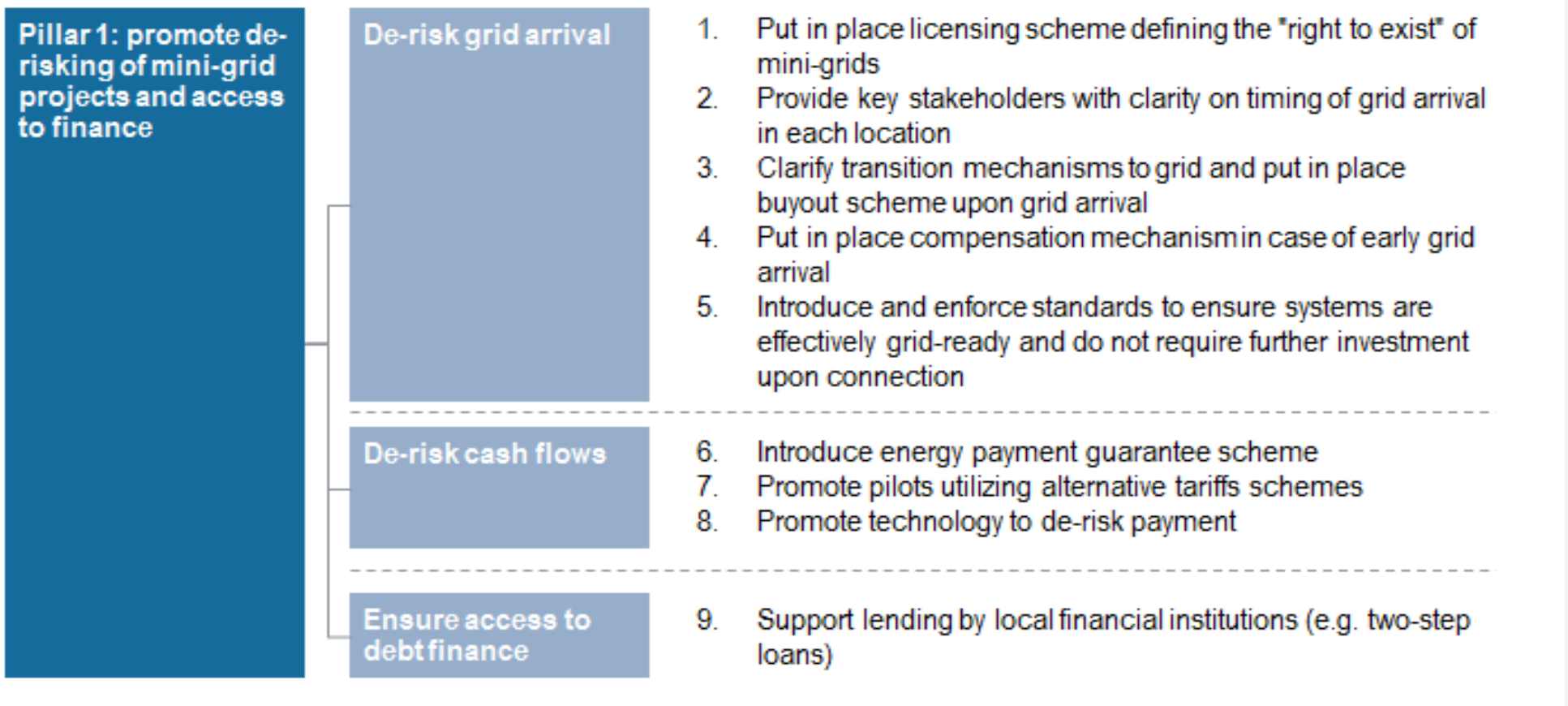
- ✓ The village is not among those listed for phase 1, 2 or 3 of the recommended sequence of grid roll out under the National Geospatial Least-Cost Electrification Plan of the National Electrification Plan
- ✓ The village has not received SHS for over 40% of households from a prior DRD programme
- ✓ The village is willing and able to pay electricity tariffs
- ✓ The village is willing and able to meet at least 20% of the project cost in cash or in kind
- ✓ The village has productive uses for the electricity generated, i.e., more than just household lighting
- ✓ The village has at least 50 households that are also clustered
- ✓ There are strong indications of the community's ability to work together
- ✓ There is demonstrated energy resource potential, such as year-round hydropower resource, plentiful source of agro-waste for biomass etc.
- ✓ To limit potential negative environmental and social impacts, mini-grids should have maximum 'effective' generating capacity of 1 MW. In the case of hybrid systems, 'effective' generating capacity is that of the largest contributing technology.

2020 Viable Minigrids



Simulation of number of viable mini-grids in 2020 (i.e. potential market size in 2020) with combined actions on investment subsidies budget, economies of scale, financing support, demand-side support and regulatory framework reform to make NEP Phase 3 villages investible

Pillar 1



Pillar 2

Pillar 2: Support growth of electricity demand in off-grid villages

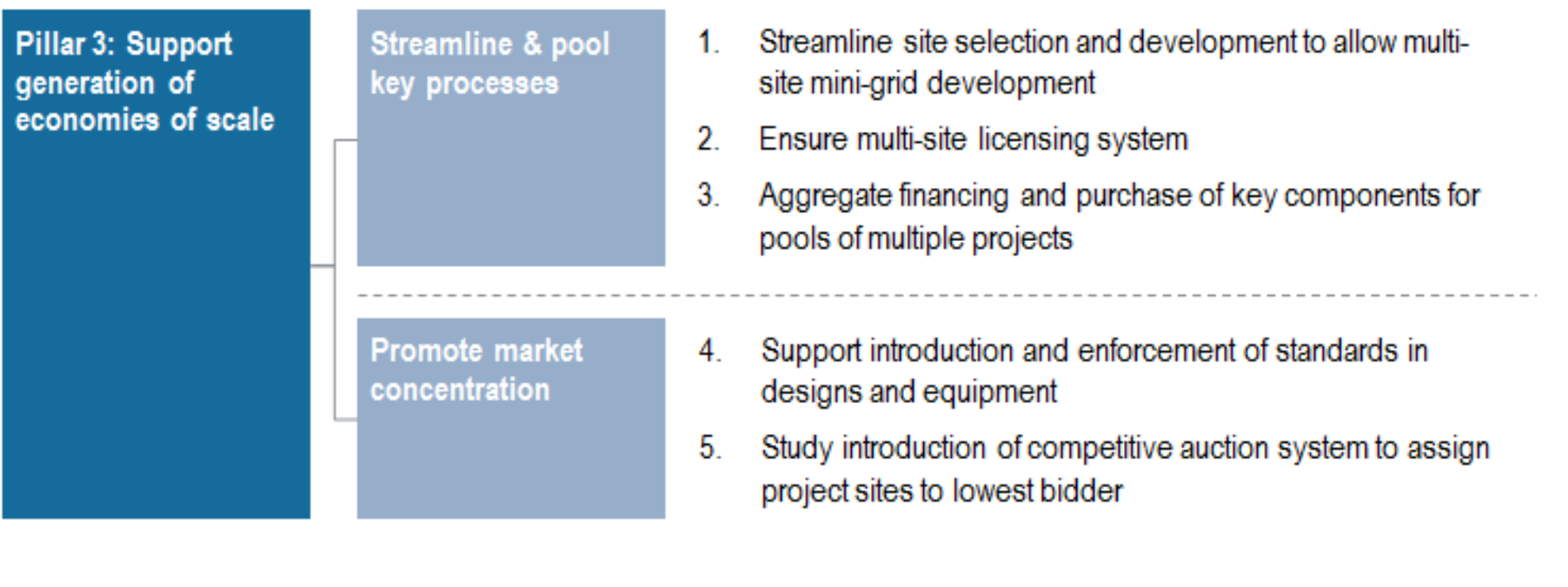
Direct subsidies and financing

1. Introduce subsidised tariffs for mini-grid electricity
2. Introduce financing schemes targeting SMEs to purchase high-efficiency electrically-powered equipment

Technical support

3. Collaborate with SMEs to illustrate benefits of utilizing electrically powered machinery in substitution to fuel-powered machinery for existing productive activities
4. Collaborate with SMEs and communities to illustrate new use case of electrical machinery that can improve economic activities
5. Collaborate with developers to optimize tariffs setting to maximize demand

Pillar 3



Smart Power Myanmar - Recently launched *Decentralized Energy Market Assessment*: <https://www.pactworld.org/library/decentralised-energy-market-assessment-myanmar>

Asia Foundation - This report is a companion report to *State and Region Governments in Myanmar*, covering the subnational aspects of Myanmar's energy sector. The Asia Foundation has been providing support and technical assistance to seven states and regions, and has been conducting training with all 14 of the states and regions, with the aim of building technical capacity and better articulating the need for government reforms. Increasingly, we have found that the states and regions recognize energy as an emerging issue on which they would like guidance, assistance, and greater clarity on the overlap between the Union and state/region governments in terms of policy, investment, and legal frameworks. <https://asiafoundation.org/publication/decentralizing-power-the-role-of-state-and-region-governments-in-myanmars-energy-sector/>

Department of Rural Development Call for Proposals 3: The off-grid component of World Bank-funded National Electrification Project (NEP) aims to electrify areas of rural Myanmar where the villages are most unlikely to be electrified using national grid extension in the near future. As the NEP implementing agency, the DRD NEP Project Management Office is calling for proposals from private project developers to invest in, own, engineer, procure, construct, operate and manage mini-grids electricity supply with less than one megawatt (MW) generative capacity in remote areas which are most unlikely to be electrified via national grid extension within the next 10 years. Selected projects will be entitled to receive a grant of up to 60% of the total capital expenditure (CAPEX) from the Government of Myanmar's NEP project. The NEP is supported with funds from the World Bank and Government of Myanmar national budget. In addition to capital subsidy, DRD will provide technical assistance in the form of capacity building as well as backstopping for community mobilization via DRD Township officers. All relevant documents can be found at the links provided here: <http://drdmyanmar.org/index.php?page=bmV3ZGV0YWlsJmlkPTE5Mg>