Workshop on Current Status of Renewable Energy in Myanmar

and Key Recommendations

Rural Electrification Plan

Presented by

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Role and Responsibilities of DRD for Rural Electrification

- Line Department for Rural Electrification (Off-Grid) since 2013
- Implementing the rural electrification projects in remote and isolated area
- Started implementing National Electrification Project (Off-Grid) in 2016-2017 Fiscal Year

Off-Grid Component

Solar Home System

Mini-Grid Project

Project Background {NEP First 5 Year Plan - (2016~2021)}

- Project Approval Date - 16 Sep 2015
- Financial Agreement Signed Date - 3 Nov 2015
- Project Activated Date - 25 May 2016
- Project Dead Line - 30 Sep 2021

- World Bank's IDA Loan - USD (400) Million
- Two Components : Grid Extension {USD (310) Million including TA}

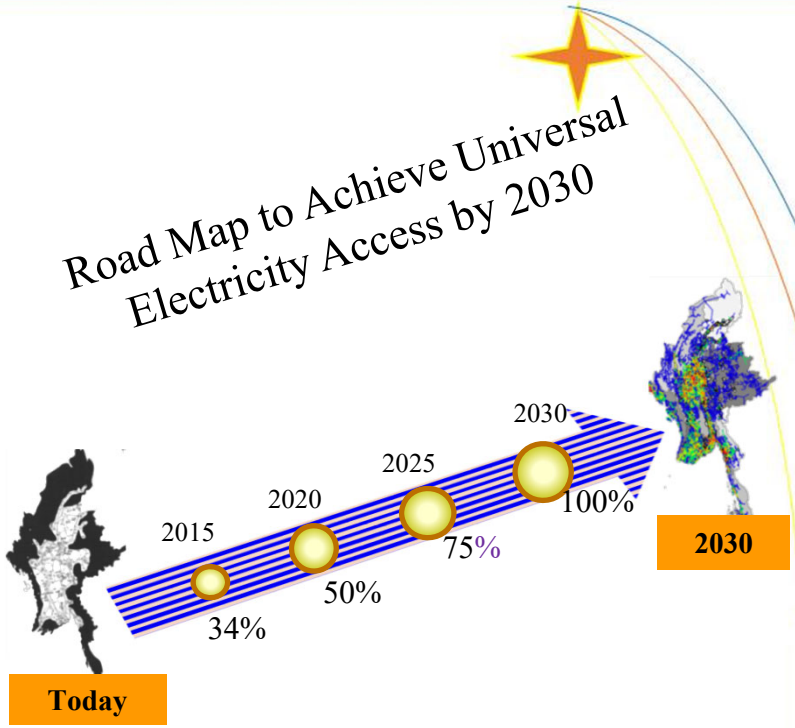
  Off-grid Electrification {USD (90) Million including TA}
- Assigned Ministries
  - Ministry of Electricity and Energy - Grid Extension
  - Ministry of Agriculture, Livestock and Irrigation, DRD - Off-grid

Objective

- To achieve Universal Electricity Access by 2030

Objectives of Off-Grid Electrification in NEP

- To increase electricity access in rural areas
- To implement the pre-electrification system in the remote villages from the grid
- To make better electrification system by the public contribution
- To improve the public-private-people partnership



Project Area of Off-Grid Pre-Electrification Plan

- **3-4% of the villages in the last phases of grid rollout are recommended for pre-electrification**
- **Shan, Chin, Kayah and Kachin States** represent major areas for pre-electrification

Village Criteria for SHS

- Impossible to connect the National Grid within next (10)/ (15)years according to Geospatial Least Cost Plan
- Located outer (11) miles with National Grid
- Able to contribute (10% -15%)

Village Criteria for Mini-Grid Project

- Willing to pay tariff
- Potential to apply not only lighting but also Productive End Uses
- Clustering Households and having at least 50 Households
- Keen on working together with associations
- Having Renewable Energy Resources Potential

Project Implementation Method

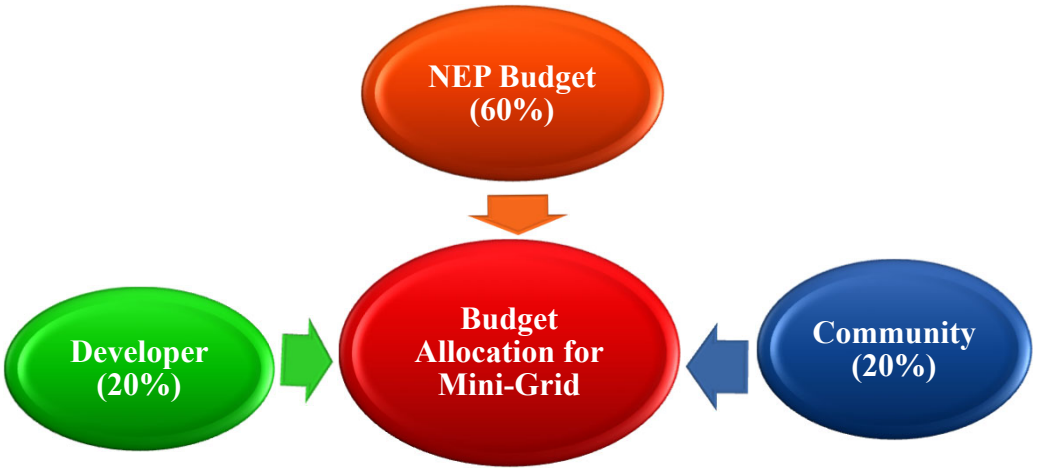
- Solar Home System - International Competitive Bidding (ICB)
- Mini-Grid Project - Call for Proposal (CfP)

Budget Allocation and Ownership in Solar Home System

- Budget Allocation and Public Contribution - DRD's Budget, World Bank's IDA Loan
- Ownership - Users
- Operation and Maintenance - Users
- After Sales Services of Suppliers
  - to provide O& M Training
  - to distribute Operation/ User Manual
  - to repair / replace during the Warranty Period if needed
  - to establish Solar Services Centers

Already established Solar Services Centers in (> 80) Townships of ICB-I since November 2018

Financial Model and Ownership in Mini-Grid System



- Ownership - Villagers, Developers and DRD
  - Developer's Operation Period - 6 ~ 10 years (based on Tariff)
  - Tariff Rate - 250~500Kyat
- After Sales Service of Suppliers - to provide O & M Training
- After Commissioning (O & M) - Villagers
- DRD's Responsibilities - Commissioning, Monitoring & Evaluation

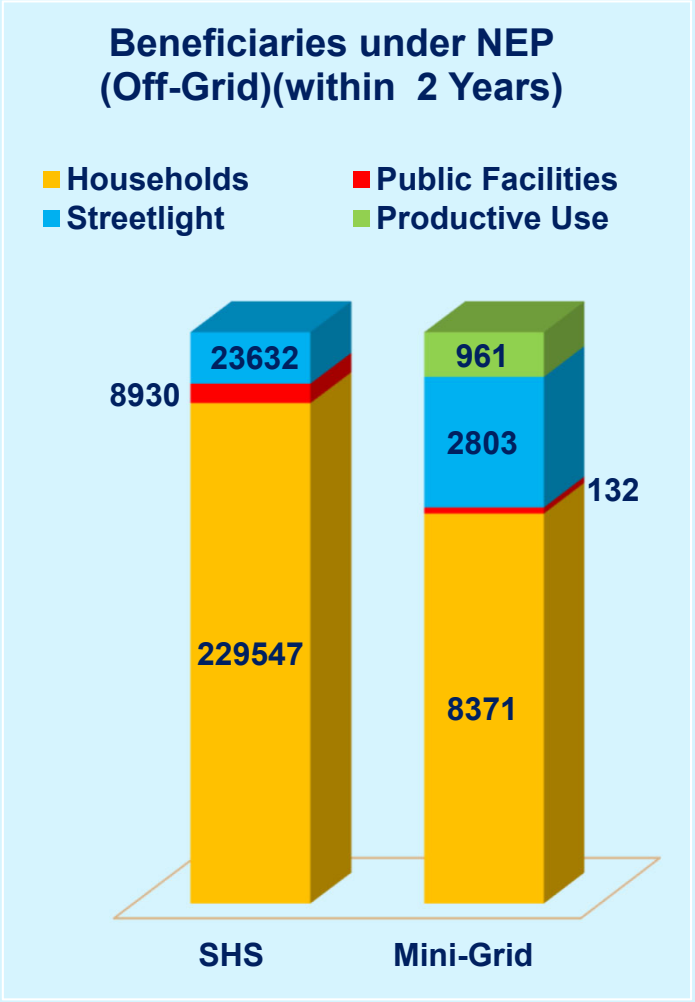
Yearly Plan of Off- Grid Electrification Program (2016~2021)

Sr.	Fiscal Year	SHS		Mini-Grid		Total		Remark
		Village	Household	Village	Household	Village	Household	
1	2016-2017	2708	141465	10	1503	2718	142968	Complete
2	2017-2018	1366	88019	35	6868	1401	94887	Complete
3	2018-2019	2455	132368	100	10000	2555	142368	On-Going
4	2019-2020	1500	122950	100	9095	1600	132045	Plan
5	2020-2021	1500	128550	100	7380	1600	135930	Plan
Total		9529	613352	345	34846	9874	648198	

Cooperation with International Organizations for Rural Electrification

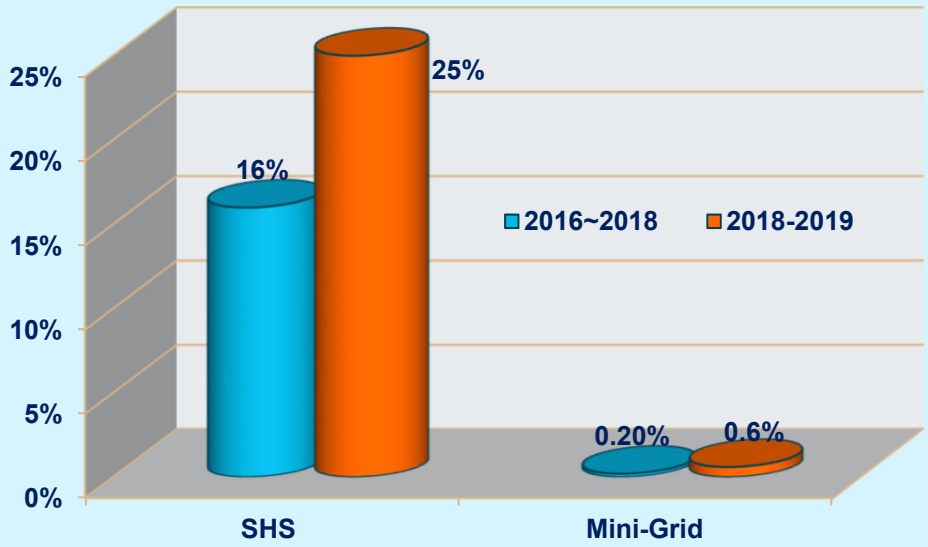
Organization	Project	Project Area	IDA Credit	Grant	Period	Remark
KfW	Pilot Project (SHS)	Shan (South)	-	Euro (9) Million	2017-2020	On-going
GIZ	Technical Assistance		-	Euro (4.87) Million	2016-2021	On-going
World Bank	NEP	Villages (outer 10 Miles from Grid)	USD (90) Million	-	2016-2021	On-going
Italy Soft Loan	Contribution to NEP	Chin State and Neighboring Region	Euro (30) Million	-	2018-2021	On-going
World Bank	Results-Based Financing	Off-Grid Area		USD (3.45) Million	2018-2021	Preparing to sign

Project Implementations and Achievements



- Generation Capacity – 9.96 GWh

Rural Electricity Access Rate Provided by DRD- NEP



(2018-2019) FY

- Solar Home System (ICB-3) - (14) State & Regions, (159) Townships, (2455) Villages, (132368) Households
- Mini-Grid System (CfP-3) - (100) Villages, (10000) Households

Positive Impacts on Local Communities

- Supporting to Promote Education and Health (Public Facilities: School, Health Center, Religious Building, Streetlight, etc.)
- Utilizing More Electrical Appliances (Mobile Phone, TV, Refrigerator, Sound Box, etc.) and Productive Uses (Water Pump, Forage Chopper, Mill, Welding and Lathe, etc.)
- Reducing the Expenditure and also Environmental Impacts






Challenges

- To set up Rule and Regulation on Mini-Grid project for assurance/ guarantee
- To implement more Mini-Grid Projects than before
- To relieve Lack of Banking Supports for Developers

Way Forwards

- Finalizing the Small Scale Electricity Enterprise Regulatory as soon as possible
- Promoting Private Sector Participation
- Enhancing to Implement Mini-Grid Projects in cooperation with International Development Partners
- Linking with the other Development Partners at Mini-Grid Project Areas for comprehensive productive uses and economic development
- Boosting Community Awareness and Capacity Building

Thank You for Your Attention!