Workshop on Smart Grid Technologies and Implications for Inclusive Development in Sri Lanka

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IMPLEMENTATION OF RURAL ELECTRIFICATION PROGRAMME IN MEGHALAYA (RGGVY, DDUGJY & SAUBHAGYA)

Main features of the rural electrification program of the Meghalaya Power Distribution Corporation Limited and the impact on the ethnic groups and matrilineal cultures

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- **About Meghalaya:**

- **Meghalaya is the homeland mainly of the Khasis, the Jaintias and the Garos. The Khasis, the Jaintias and the Garos are also known to be one of the earliest ethnic group of settlers in the Indian sub-continent, belonging to the Proto Austroloid Monkhmer race.**
- **The Khasis, the Jaintias and the Garos have a matrilineal society.**
- **Descent is traced through the mother, but the father plays an important role in the material and mental life of the family- '*a man is the defender of the woman, but the woman is the keeper of his trust*'.**
- **Meghalaya is basically an Agricultural State with about 80% of its total population depending entirely on Agriculture for their livelihood.**
- **Meghalaya with its wealth of mineral deposits has tremendous industrial potential. There are extensive deposits of coal, limestone, granite, clay and other minerals.**

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Rajiv Gandhi Grameen Vidyutikaran Yojana- (RGGVY) Scheme for Rural Electrification Infrastructure and Household Electrification is a comprehensive programme of the Government of India.

Lighting the House

Supply of Drinking Water

OBJECTIVES OF THE SCHEME:

- to electrify all villages and habitations
- provide access to electrify to all rural households
- give electricity connection to Below Poverty Line (BPL) family
- to bridge the urban-Rural gap
- provide reliable and quality power supply to rural areas

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- The RGGVY scheme envisages the development of the following infrastructure for the provision of electricity to rural areas in the country-
- Rural Electricity Distribution Backbone (REDB) with 33/11 KV (or 66/11 KV) sub-station of adequate capacity in blocks where these do not exist.
- Village Electrification Infrastructure (VEI) with provision of distribution transformer of appropriate capacity in villages/habitations.
- Decentralized Distributed Generation (DDG) Systems based on conventional & non-conventional energy sources where grid supply is not feasible or cost-effective.
- All the above three are directed towards overall rural development, employment generation and poverty alleviation by facilitating power provision for irrigation, small enterprises, healthcare, education etc.

Use of Satellite TV

WLL Phone Connection

IMPLEMENTATION MODULE:

- The Government of Meghalaya has entrusted the responsibility of district-wise implementation of the RGGVY projects to the state utility, i.e. the Meghalaya Power Distribution Corporation Limited for execution of these projects on turnkey basis.
- The scheme is being implemented through Rural Electrification Corporation (REC) of India
- Funds for the project is being made available by R.E.C. to State Government with 90% capital subsidy and 10% loan on the overall cost of the projects.

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SCOPE/ACHIEVEMENT UNDER RGGVY SCHEME

A. VILLAGES

Particulars	Electrification work in Unelectrified Villages (UEVs)			Intensification work in Electrified Villages (EVs)
	Virgin villages	De- Electrified villages	Total	
Scope of work	1502	364	1866	3245
Achievement	1479	364	1843	2953
Balance	23	0	23	292
Remarks: The balance works, due to Remoteness of locations, is planned to be executed under DDG of DDUGJY.				

B. 11 KV INFRASTRUCTURE

Particulars	11 KV Works								
	Distribution Transformers (KVA)					11 KV Line (Kms)	LT line works (Kms)		No. of BPL Rhh.
	5	10	16	25	TOTAL		3 Ph.	1 Ph.	
Scope of work	32	748	1279	1487	3546	4635.9	1914	6602	110549
Achievement	28	745	1262	1482	3546	4568.2	1901	6549	105504
Balance	4	3	17	5	0	67.78	13.55	52.1	5045

C. 33 KV INFRASTRUCTURE

Particulars	33 KV Works	
	New 33/11 KV SS of 1.6 MVA each.(No)	New 33 KV Line(Kms)
Scope of work	5	158.43
Achievement	5	158.43
Balance	0	0

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

It is a Government of India scheme designed to provide continuous power supply to rural India having following objectives:

- To provide electrification to all villages
- Feeder separation to ensure sufficient power to farmers and regular supply to other consumers
- Improvement of Sub-transmission and distribution network to improve the quality and reliability of the supply
- Metering to reduce the losses

Employment Generation

Commercial Use of Electricity (Rice Mill)

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SCOPE/ACHIEVEMENT UNDER DDUGJY- PHASE I

	Parameters	Cost (Rs. In Crores)		Scope of Work			Achieve-ment			Balance			Remarks
			Units	Grid	Off-Grid	Total	Grid	Off-Grid	Total	Grid	Off-Grid	Total	
A	Electrification of UE Villages	71.53	No.	269	21	290	261	21	282	8	0	8	Balance Work in progress
B	Sansad Adarsh Gram Yojna	1.08	No.	8		8	8		8	0	0	0	
C	Connecting Unconnected Hhs	27.53	No.	219		219	102		102	117	0	117	
D	Total Cost	100.14											

SCOPE/ACHIEVEMENT UNDER DDUGJY- PHASE II

	Parameters	Sanctioned Cost (Rs. In Crores)	Scope of Work		Remarks
			Units	Volume	
A	Metering				LOA issued in January 2018. Works in Progress.
i	DTR	15.24	Locations	1043	
ii	Feeders		Feeders	207	
B	Connecting Unconnected Hhs	89.85	No. of Villages	579	
C	System Strengthening	54.8			
i	LT line		Ckt. Km	1750	
ii	11 KV Lines		Ckt. Km	1350	
iii	33 KV Line		Ckt. Km	112	
iv	New 33/11KV Substation		Nos.	9	
v	Aug. of 33/11KV Substation		Nos.	2	
vi	New DTs		Nos.	1053	
E	Total Cost	159.89			

Benefits derived out of implementation of RGGVY Scheme:

1. Ease in doing household works especially for women.
2. Improving health.
3. Education: Broaden thinking perspectives.
4. Alleviate poverty.
5. Easy accessibility to radio, telephone, television, internet and mobile etc.
6. Employment generation.
7. Increase productivity.
8. Theft activity reduced.
9. More safe & secured from the wild animals.
10. Environmental impact (Less Kero-sine/candles/firewood usage).

Child can study at night (a meter for his house)

Extra Work - Extra Income

Challenges / Difficulties encountered during implementation of Scheme:

1. Topographical constraints (Difficult hilly terrain).
2. Geographical constraints. (Heavy rain in 4-5 months of the year)
3. Inaccessibility to work site.
4. Wrong projection of infrastructure requirement and present and future load assessment.
5. Deliberate attempt from contractor to escalate the BOM resulting in cost overrun.
6. Remote & scattering nature of villages
7. Difficulty in identification of the BPL households.
8. Forest Clearances and ROW issues.
9. Land availability for substation construction
10. In-effective billing & payment system.
11. Man power deficit is a huge bottleneck in maintaining the created infrastructure.

Solar Panel under DDG of DDUGJY

Solar Street lighting under DDG of DDUGJY

Solar home lighting under DDG of DDUGJY

SAUBHAGYA SCHEME
(Pradhan Mantri Sahaj Bijli Har Ghar Yojana)

Introduction: The Pradhan Mantri Sahaj Bijli Har Ghar Yojana (or Saubhagya) seeks to ensure universal household electrification (in both rural and urban areas) by providing last mile connectivity through financial assistance to the DISCOMs / Power Department from the Government of India.

Beneficiary Criteria: Under Saubhagya, beneficiaries will be identified using the Socio Economic and Caste Census (SECC) 2011 data. The identified poor households will get free electricity connections. Any left out un-electrified BPL households not covered in projects sanctioned under DDUGJY including RE component would also be eligible for free electricity connection under Saubhagya.

Cost Estimate for Rural / Urban households work: The Cost of service connections to remaining households is fixed as Rs. 3000/- per household and the Cost towards providing last mile connectivity wherever required is fixed as Rs. 1500/- per household. The cost per household includes the cost of supply of materials, meter including pre paid meter / smart meter, erection as well as poles, conductors, etc. required for last minute connectivity.

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Financial Support: The financial support under the Scheme shall be as under:

Sl No.	Agency	Nature of Support	Quantum of Support (% of Project Cost.
(i)	Government of India	Grant	85
(ii)	Utility / State Contribution	Own Fund	5
(iii)	Loan (FIs/Banks	Loan	10
(iv)	Additional Grant from GoI on achievement of prescribed milestones.	Grant	50% of total loan component (10%) i.e. 5%
(v)	Maximum Grant by the GoI (including additional grant on achievement of prescribed milestones.	Grant	90%

Submission and approval of DPR:

The district-wise DPRs shall be submitted by the Utility to REC online in the prescribed format through a dedicated web portal to be developed by REC. Detailed sanctioned letter stipulating all terms and conditions of the Scheme would be issued by REC to the States in prescribed format to be approved by the Ministry of Power / Monitoring Committee.

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1	Installed Generation capacity	MW	354.7
2	Net Energy Generation	MU	823.13
3	Connected load within the State	MW	660.164
4	Energy consumption within the State	Mu	972.383
5	Number of consumer within the State	No.	414624
6	Number of 400/220 Grid Sub-Station	No.	1
7	Number of 132 KV Grid Sub-Station	No.	14
8	Number of Electrified Villages	No.	6098