STANDING COMMITTEE ON ENERG

(2016-17)

SIXTEENTH LOK SABHA

MINISTRY OF POWER/

MINISTRY OF NEW AND RENEWABLE ENERGY

'Energy Access in India-Review of current Status and Role of Renewable Energy

TWENTY SECOND REPORT

LOK SABHA SECRETARIAT
NEW DELHI

December, 2016/Agrahayana, 1938 (Saka)

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Presented to Lok Sabha on 15.12.2016

Laid in Rajya Sabha on 15.12.2016

LOK SABHA SECRETARIAT
NEW DELHI

December, 2016/Agrahayana, 1938 (Saka)

COE NO.277

Price : **Rs. .....**

Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Sixteenth Edition) and Printed by _____

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INTRODUCTION

I, the Chairperson, Standing Committee on Energy having been authorized by the Committee to present the Report on their behalf, do present this Report on 'Energy Access in India - Review of current Status and Role of Renewable Energy'.

2. The Committee had extensive consultation with the Ministry of Power and the Ministry of New and Renewable Energy. The Committee also undertook on the spot study visit to Cochin, Bengaluru and Hyderabad and had discussion with the various PSUs under the ambit of the Ministry of Power and the Ministry of New and Renewable Energy viz. Power Fund Corporation (PFC) regarding Integrated Power Development Scheme, NTPC regarding their role in ensuring 24x7 power supply, Powergrid regarding grid connection for renewable energy, National Institute of Wind Energy (NIWE), Solar Energy Corporation of India (SECI) and India Renewable Energy Development Agency (IREDA) regarding their Action Plan for achievement of 175GW renewable energy target.

3. The Committee focused on the accessibility, affordability and availability of the energy for all in general and for the rural and remote parts of the country in particular. The observations/recommendations suggested by the Committee in this regard are given in Part II of the Report.

4. The Report was considered and adopted by the Committee at their sitting held on 9th December, 2016

5. The Committee wishes to express their thanks to the officers of the Ministry of Power and the Ministry of New and Renewable Energy for valuable assistance.

NEW DELHI
14 December, 2016
Agrahayana 23, 1938 (Saka)

Dr. Virendra Kumar
Chairperson
Standing Committee on Energy

Report

Part I

NARRATION ANALYSIS

CHAPTER I

Introductory

1.1. Access to modern energy services is a prerequisite for economic growth and human development and is critical in fulfilling basic needs such as cooking, lighting, mobility, water pumping etc[1]. Absence of access to modern energy services deprives people from the bare minimum living standard - it constrains generation of productive activities, incomes and employment in rural areas. While there is no internationally adopted definition of “energy access”, it could broadly be defined as the physical availability of modern energy carriers and improved end-use devices at the household level at affordable prices. It includes access to less polluting and efficient household energy for cooking and heating (improved cook stoves with traditional solid biomass fuels, liquid and gaseous fuels like kerosene and LPG), or energy from renewable sources such as solar, electricity for powering appliances and lights in households and public facilities and mechanical power from either electricity or other energy sources that improve the productivity of labour[2].

1.2 Access is a function of availability and affordability[3] and can also be defined as a household’s ability to obtain an energy service, should it decide to do so. For energy to be considered available to a household, it must be within the economic connection and supply range of the energy network or supplier.

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[1]United Nations Development Programme (UNDP), 2005, Energizing the Millennium Developing Goals: A Guide to Energy’s Role in Reducing Poverty, New York, NY

2Pachauri, S, N.Rao, Y.Nagai, and K.Riahi (2012) : Access to Modern Energy : Assessment and Outlook for Developing and Emerging Regions: IIASA: Laxenburg, Austria

3Affordability refers to the ability of the household to pay the up-front connection and energy usage costs

1.3 Energy access is about creating a development space that reduces inequality and makes growth inclusive. It is also about decentralization and giving control to the rural people to plan for themselves. In the Indian context “energy access” fits well with overall development priority of alleviating poverty, enhancing economic prosperity, promoting social development, improving the well being of women and girl child and increasing the standard of living. If the trends were to continue it would be possible for India to achieve universal access to electricity and cleaner cooking fuels and stoves within shortest possible time. It would certainly require innovative institutions, enabling mechanisms, targeted policies, including appropriate subsidies and financing. The necessary technologies are available, but resources would need to be directed to meet these goals. The energy access policy would need to be aligned with policies for other sectors. Ideally, the linkages between energy and other policy priorities, such as health, education, gender equality and poverty alleviation, could be recognized explicitly and local solutions that address these needs are encouraged and supported.

1.4 Lack of energy access is primarily a rural issue. Although a percentage of the urban population still does not have access to modern energy, the problem is acute in the rural context where it is manifold higher than the urban areas.

1.5 According to the Ministry's report, out of total 597,464 inhabited villages in the country (As per Census 2011), as on 01.04.2015, 18,452 villages did not have access to electricity. It is targeted to electrify all remaining villages by 01 May 2018. As on 31.10.2016, electrification of 10628 villages has been completed as reported by States and it is expected to achieve electrification of remaining un-electrified villages much before the targeted timelines. As per Census 2011, out of the 1678 Lakh rural households in the country, there were 750 Lakh un-electrified rural households. States, through their Distribution Companies (DISCOMs) are releasing electricity connections to the households on regular basis of their own, State Specific Schemes, Central Sector Schemes. Further, based on information obtained from the States and data available in Power For All documents prepared jointly with the States, it is estimated that there are about 576 Lakh un-electrified rural households in the country.

1.6 India aims at universal energy access and views energy as the key for accelerating development and inclusive growth. There have been sustained efforts to

provide modern energy services for lighting and cooking purposes at least at subsistence level to its entire population.

1.7 According to the Ministry of New and Renewable Energy, while supporting around 16% of the world population India's share in world energy use is low at only 4.9%. In absolute terms, the commercial energy consumption stands at 637.8 million tonnes of oil equivalent (mtoe) .Per capita annual electricity consumption of around 1010 kWh is less than a two and half of the world average.

1.8 The Ministry has also stated that Electricity access has improved over the last two decades. "Electricity for All" is a declared objective of the Central and State Governments and has been accorded high priority since 1970s when rural electrification was identified as a key component of the Minimum Needs Programme. Since then, successive governments have continued with their efforts to increase rural electrification through a number of initiatives including the Kutir Jyoti Scheme in 1988-89, the Pradhan Mantri Gramodaya Yojana in 2001-02, the Accelerated Rural Electrification Programme in 2003-04 and the Accelerated Electrification of one lakh villages and one crore households in 2004-05and recently 24x7 Power for all.

1.9 In terms of cost of electricity and sustained availability, grid extension is the most preferred and viable option in densely populated areas where demand is high and caters to productive energy requirement. However, for meeting unmet demand and also for thinly populated areas renewable energy offers sustainable solutions for energy access.

1.10 Renewable energy has been very effective in providing small quantities of electricity to provide subsistence level support and serve as a starting point to kick start the development process. Increased use of renewable energy technologies supported with necessary funds, policies, implementation structures would effectively address a broad range of aims, including those of national importance in terms of equity, inclusive development, decentralized employment opportunities, and also accelerating the economic activities. Renewable energy based projects set up with upfront financial incentive (to reduce the cost burden) also helps in reducing perpetual subsidy burden that is generally a norm with conventional grid power. However, the challenge is to build

in business models that stimulate competition and incentives innovation and cost reduction. Price discovery route either for tariff or for setting up decentralized micro-grids could ensure effective use of government resources. Similar approaches could accelerate penetration of modern cooking energy systems. In any kind of model, the full involvement of local people from project conceptualization, commissioning to sustained operation and maintenance would be a key to successful implementation.

1.11 Market mechanisms alone may not lead to transformation in energy access landscape. A combination of technology development, market mechanisms and government's policy and financial support will be essential. Subsidies for energy access projects are generally justified as a response to inequality and social expectations in energy provision. However, their net effect can be positive or negative depending on the intended goals of the subsidy, and the way a subsidy is implemented. Universally upfront costs of equipment is the key barrier and therefore complementing subsidies with funds could be a practical way to solve the first-cost capital financing problem. In addition, capacity development is needed, especially for the design and implementation of public policies oriented to poor people.

1.12 Ensuring universal energy access is primarily a developing countries' challenge. However, active involvement of developed countries would be essential for ensuring availability of energy access technologies, partnering in innovation and also for enhancing the technological capability. In fact energy access technologies would need to be viewed as a global public good and require international commitment in terms of finances and technology package. Further, public financing of energy access technologies will drive innovation and catalyze funding. The IPR regime applied to energy access technologies would need to balance rewards for innovators with the need to promote the common good of mankind.

CHAPTER II

Deen Dayal Upadhayay Gram Jyoti Yojana (DDUGJY)

2.1 In order to expedite rural electrification the Ministry of Power (MoP) launched Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) in March 2005 which is now subsumed with Deen Dayal Upadhayay Gram Jyoti Yojana (DDUGJY). Government of India approved DDUGJY for electrification of un-electrified villages through grid connectivity by 2020. Components of DDUGJY are as follows:

(i) Separation of agriculture and non-agriculture feeders facilitating judicious rostering of supply to agricultural & non- agricultural consumers in the rural areas

(ii) Strengthening and augmentation of sub-transmission & distribution (ST&D) infrastructure in rural areas, including metering at distribution transformers, feeders and consumers end

(iii) Rural electrification, as per CCEA approval under erstwhile RGGVY by subsuming RGGVY in DDUGJY and carrying forward the approved outlay for RGGVY to DDUGJY

2.2 As reported by the Ministry of Power, the scheme has a total outlay of Rs.43,033 crore with a budgetary support of Rs.33,453 crore. Projects with approved outlay have been already sanctioned to the States and are in various stages of implementation by the State DISCOMs / Power Department. Government of India have also taken up a joint initiative with all States/UTs for preparation of State specific action plan for 24x7 'Power for All' which includes supply to households, industrial & commercial consumers and adequate supply of power to Agricultural consumers as per State policy. This initiative aims at ensuring uninterrupted supply of quality power to existing consumers and providing access to electricity to all unconnected consumers. Further, to ensure financial turnaround of the Distribution Utilities, a comprehensive scheme 'UDAY' has also been launched by Govt. of India. This would ensure financial turnaround and improved operation efficiency of the DISCOMs.

2.3 On a query regarding provisions of the cost of the services under DDUGY, the sources through which these will be arranged and the manner in which this cost is to be shared between Center, State and individual, the Ministry of Power stated:

> "The total outlay of the DDUGJY scheme for new projects is Rs. 43033 crore including budgetary support from Government of India of Rs. 33453 crore. In addition to this, rural electrification component projects with total outlay of Rs. 32860

crore including budgetary support from Government of India of Rs. 29574 crore have been subsumed in DDUGJY. Thus, the total outlay of the scheme works out to Rs. 75893 crore of which Rs. 63027 crore would be provided through budgetary support by Government of India and balance funds would be contributed by the States from their own resources / loans from financial institutions/Banks. While the BPL households are being provided free electricity connections along with internal wiring with one LED bulb. Electricity connection to APL households would be provided by the respective States / DISCOMs and they are required to pay for the applicable charges for obtaining electricity connections from DISCOMs as per their norms.

2.4 Regarding the physical progress under Projects Sanctioned In X and XI Plan, the Ministry of New and Renewable Energy (MNRE) stated :

"648 projects were sanctioned under erstwhile RGGVY (now subsumed with DDUGJY as RE component) during X & XI Plan. Against the coverage of 1,12,083 un-electrified villages (UEVs), intensive electrification of 3,60,391 electrified villages (IEVs) and release of free electricity connections to 2,64,93,948 Below Poverty Line (BPL) households, as on 30.09.2016, electrification works in 1,11,442 un-electrified villages, intensive electrification in 3,34,376 electrified villages have been completed and free electricity connections to 2,28,06,032 BPL households have been provided in the country.

2.5 The Plan-wise breakup as furnished by the MNRE is as follows:

Plan	Projects	UEVs		IEVs		BPL connections	
		Scope	Achievement	Scope	Achievement	Scope	Achievement
X Plan	235	63980	63612	96683	96408	7652937	7452110
XI Plan	413	48103	47830	263708	237968	18841011	15353922
Total	648	1,12,083	1,11,442	3,60,391	334376	26493948	22806032

2.6 State-wise achievements of intensive electrification of electrified villages under DDUGJY for the last three years and current year furnished by MNRE is given below:

Sr. No.	State	Target	Achievement				Coverage	Cumulative Achievement (as on 30.09.2016)
			2013-14	2014-15	2015-16	2016-17(as on 30.09.2016)		
1	Andhra Pradesh#	No targets fixed for intensive electrification of electrified villages.				0	27552	21614
2	Arunachal Pradesh		250	47		5500	1306	1306
3	Assam		354	222	4		23098	12839
4	Bihar		643	2100	9090	763	18625	21231
5	Chhattisgarh		1934	1135	2161	5102	40483	22011
6	Gujarat			22		694	25085	16144
7	Haryana		272	207			8404	5137
8	Himachal Pradesh			137	17		11699	7896
9	Jammu & Kashmir		328	47	10		5510	2908
10	Jharkhand		57	272	14	3	23804	5612
11	Karnataka			355	173	1735	32007	24538
12	Kerala		428	500	15		2381	1087
13	Madhya Pradesh		4773	4385	8599	5550	98958	47229
14	Maharashtra			341	8		66640	36154
15	Manipur		23	737			3150	1322
16	Meghalaya		667	48	10		3051	2947
17	Mizoram			177			532	517
18	Nagaland		41	58			1949	1152
19	Odisha		1677	474	711	746	72721	28015
20	Punjab		6030	397			6131	6131
21	Rajasthan		182	386	1929	4480	73132	39627
22	Sikkim		6	16	8		412	412
23	Tamilnadu		0				11418	9673
24	Telangana		0				18326	9176
25	Tripura		35		82	150	1649	852
26	Uttar Pradesh		0	551	14587	2355	107181	20475
27	Uttarakhand		243	1562			10042	10042
28	West Bengal		1022	79	1818	3176	29952	28579
	Reduction		4009			62		7328
	Total		14956	14255	39236	30197	728440	381430

2.7 As regard the financial assistance, the MNRE has stated that a total amount of Rs. 35155.14 crore have been released up to 30.09.2016 for X & XI Plan projects.

2.8 State-wise (year-wise) amount disbursed by REC during X & XI Plan including loan & subsidy are given at *Annexure-I*

2.9 When the Ministry of Power were asked about the funding pattern of the Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), they furnished:

Agency	**Nature of support**	**Quantum of support (Percentage of project cost)**	
		Other than Special Category States	**Special Category States #**
Govt of India	Grant	60	85
DISCOM Contribution	Own Fund	10	5
Lender (FIs/ Banks)	Loan	30	10
Additional Grant from GOIonachievement of prescribed milestones	Grant	50% of total loan component (30%) i.e. 15%	50% of total loan component (10%) i.e. 5%
Maximum Grant by GOI (including additional grant on achievement of prescribed milestones)	Grant	75%	90%

#*Special Category States*(All North Eastern States including Sikkim, J&K, HimachalPradesh, Uttarakhand)

2.10 The Ministry of Power further stated that additional grant (i.e. conversion of 50% of loan component) under the scheme is released subject to achievement of following milestones:

(a) Timely completion of the scheme as per laid down milestones.

(b) Reduction in AT&C losses as per trajectory finalized by MOP in consultation with State Governments (DISCOM-wise).

(c) Upfront release of admissible revenue subsidy by State Govt. based on metered consumption.

2.11 When asked about the project sanctioned Under 12th Five Year Plan, the Ministry of Power stated :

> "Under XII plan of DDUGJY total 768 projects (Including 495 off-grid projects) were sanctioned in the country with total project cost of Rs. 23,774.1 crore (Including Rs. 167.72 crore for off-grid), covering electrification of 9,125 un-electrified villages

(Including 113 UEVs of off-grid), intensive electrification of 2,31,852 electrified villages and release of free electricity connection to 132.56 Lakh BPL households(including 19415 BPL households through off-grid). Against the coverage, as on 30.09.2016 electrification of 4701(including 53 UEVs of off-grid)un-electrified villages has been electrified and intensive electrification of 41,554 electrified villages and release of free electricity connection to 12.87 lakh BPL households have been released.

Further, 4497 new projects (Including 3867 off-grid/DDG projects) have been sanctioned under DDUGJY with total project cost of Rs. 42391.25 crore(Including Rs. 1123.27 crore of off-grid) for electrification of villages, metering, system strengthening and feeder separation.

2.12 The MNRE has stated that as on 30.09.2016, electrification works in 4701 un-electrified villages, intensive electrification in 41,554 electrified villages have been completed and free electricity connections to 12,87,759 BPL households have been provided in the country under XII Plan.

2.13 Details of projects sanctioned in XII Plan under RE component of DDUGJY according to MNRE are given at *Annexure-II*

2.14 When asked to elaborate the concept of the intensive electrification of electrified villages, the Ministry of Power stated:

"Keeping in view, the objective of scheme to provide access to electricity to all households, it is envisaged to create rural electricity infrastructure in un-electrified villages as well as in already electrified villages. Creation of rural electricity infrastructure in already electrified villages for providing access to electricity to remaining un-electrified households and providing free electricity connections to BPL households has been termed as 'Intensive Electrification of Villages' under this scheme. Under Intensive Electrification (IE) mainly lines are erected and capacity of distribution transformer is enhanced.

2.15 On being queried the number of villages which are to be electrified intensively and time period stipulated for such intensive electrification, the MoP stated:

"Against the sanctioned 7,28,440 no. electrified villages for intensive electrification under the scheme. As on 30.09.2016 intensive electrification 3,81,430 electrified villages has been completed so far. The stipulated period for the completion of electrification of the work is 24 months from the date of the award of the project".

2.16 On being asked the State-wise number of unelectrified villages in the country to be electrified under DDUGJY, the Ministry of Power furnished:

Sl. No.	State	Number of un-electrified villages (as on 01.04.2015)	FY 2015-16	FY 2016-17		FY 2017-18
			Ach.	Target	Ach. as on 30.09.2016	Target
1	Arunachal Pradesh	1578	174	1039	164	365
2	Assam	2892	942	1377	770	573
3	Bihar	2747	1754	735	218	258
4	Chhattisgarh	1080	405	500	73	175
5	Himachal Pradesh	35	1	34	25	0
6	Jammu & Kashmir	134	27	79	3	28
7	Jharkhand	2525	750	1314	492	461
8	Karnataka	39	0	39	5	0
9	Madhya Pradesh	472	214	191	125	67
10	Manipur	276	75	149	37	52
11	Meghalaya	912	1	674	626	237
12	Mizoram	58	16	42	21	0
13	Nagaland	82	0	82	18	0
14	Odisha	3474	1264	1586	346	624
15	Rajasthan	495	163	246	150	86
16	Tripura	26	9	17	4	0
17	Uttar Pradesh	1529	1305	166	131	58
18	Uttarakhand	76	0	76	2	0
19	West Bengal	22	8	14	0	0
Total		**18452**	**7108**	**8360**	**3210**	**2984**

2.17 The Committee note a huge discrepancies with regard to the numbers of the village electrified and also to be electrified. When asked as to whether any methodology is being contemplated to ensure that accurate figures with regard to the electrification of villages in the country are available with the Government, the Ministry of Power stated:.

> "In view of the federal structure of the country, electricity being on the concurrent list of subjects and the fact that the Distribution Companies; primarily responsibility for village electrification and custodian of related data, are owned by the State Governments, the Central Government rely upon the reports submitted by the State DISCOMs/ Power Department for updating the status of village electrification.

However, under DDUGJY, States are requested to compile the list of such un-electrified villages duly identified by the Census code of 2011. Online monitoring mechanism is available in form of mobile App 'Garv'. Milestone based approach has also been adopted wherein the entire process of village electrification has been divided in 12 stages and completion of each stage is updated from time to time. Gram Vidyut Abhiyantas (GVAs) have been deployed by REC to assist concerned State DISCOMs / Power Department in monitoring works".

2.18 On a query regarding the criteria of a census village for being a unit for the purpose of electrification, the Ministry of Power stated: .

"As per the Census of India, the lowest primary administrative unit is the village. The villages are of different sizes in terms of population depending upon the geography of the area, availability of land and water, etc. All the villages form part of a sub–district and a district. Accordingly, Census data are made available for the country as a whole and by state, union territory, district, sun-district and down to village level in rural areas.
A village is declared as electrified if :

i) Basic infrastructure such as Distribution Transformer and Distribution Lines are provided in the inhabited locality as well as the Dalit Basti/hamlet where it exists (For electrification through Non-Conventional Energy Sources a Distribution Transformer may not be necessary).
ii) Electricity is provided to public places like schools, Panchayat Office, Health Centres, Dispensaries, Community Centres etc. and
iii) The number of household electrified should be atleast 10% of the total number of households in the village."

Under DDUGJY, all Census villages are eligible to be covered for electrification. Although present definition, envisage electrification of at least 10% households, DDUGJY scheme provides for creating access to electricity for all household.

2.19 Regarding the financial assistance, the Ministry stated that after fulfillment of pre-requisite conditions claims of Rs.6828.80crore (including loan and subsidy) have been disbursed under XII Plan of DDUGJY. The funds against other projects shall be released immediately on fulfillment of prescribed conditionalities, as per guidelines of DDUGJY.

2.20. On a query regarding expenditure involved with regard to the work already executed and share of the Union and State Government therein during 12th Plan, the Ministry stated:

"The Government of India's subsidy released during 12th five year plan and amount infused by the States as per guidelines of the scheme as on 30.09.2016

Sl. No.	Plan	No. of Projects	Funds provided (Rs. in crore)		
			Sanction Project Cost	State Share	Subsidy releasedby REC
1.	XII Plan DDUGJY	273	23606.38	702.25	6143.80
2.	DDG(XII)	495	167.72	1.21	37.42
3.	DDUGJY New(Grid)	630	41267.98	0*	1196.63
4.	DDUGJY New (off-grid)	3867	1123.28	1.02*	58.49
Total		**5265**	**66165.36**	**1124.3**	**7436.34**

* Only first trench of Grant under DDUGJY new projects is released, State are mandatorily required to infuse fund only after release of second trench of Grant as per DDUGJY guidelines.

2.21 When asked about the financial achievements under the scheme during 12 Plan so far, the Ministry of Power stated:

> Under DDUGJY, during FY 2015-16 and FY 2016-17 subsidy of Rs.4500 crore and Rs. 2946.26 crore was disbursed by the Government of India respectively. Under RE component of DDUGJY, subsidy of Rs. 33161.63 crore was released up to FY 2044-15 by Government of India.

2.22 The year-wise financial achievements so far under the scheme, furnished by the MoP is as under:

Year	Free Electricity Connection released to BPL Households (As on 30.09.2016)
2005-06	16815
2006-07	655773
2007-08	1621182
2008-09	3084788
2009-10	4718468
2010-11	5883355
2011-12	2788264
2012-13	1296541
2013-14	961730
2014-15	759377
2015-16	1439144
2016-17	1243217
Total	**24468654**

2.23 When asked as to whether any estimation with regard to the required finance have been made for providing electricity under DDUGJY, the Ministry of Power stated:.

> "The total outlay of the Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) is Rs. 43033 crore including budgetary support of Rs. 33453 crore. In addition to this, rural electrification component projects with total outlay of Rs. 32860 crore including budgetary support from Government of India of Rs. 29574 crore have been subsumed in DDUGJY.
> Thus, the total outlay of the scheme works out to Rs. 75893 crore of which Rs. 63027 crore would be provided through budgetary support by Government of India and balance funds would be contributed by the States from their own resources / loans from financial institutions/Banks. Under the scheme, adequate infrastructure would be created in all the villages to provide access to electricity to all households. However, State DISCOMs / Power Deptt. needs to provide last mile connectivity and release electricity connections to individual households and may require some additional funds for the purpose.
> The projects sanctioned under the scheme are being implemented by the concerned State DISCOMs / Power Deptt. and therefore effective coordination is solicited from these implementing agencies. To facilitate efficient monitoring of projects, a web enabled platform has been developed for updating pro**gress** on regular basis.

2.24 Regarding the projects sanctioned under RE- DDUGJY(New), the MNRE stated:

> "630 new projects have been sanctioned with a total sanctioned cost of Rs. 41267.98 croreunder rural electrification component of DDUGJY covering electrification of 3,668 un-electrified villages, intensive electrification of 1,36,197 electrified villages and free electricity connections to 2.45crore BPL households.
> As on 30.09.2016, electrification works in 1590 un-electrified villages, intensive electrification in 5500 electrified villages have been completed and free electricity connections to 3,74,863 BPL households have been provided in the country".

2.25 On a query regarding the amount required for giving connection to the BPL households throughout the country and details of fund allocated for the purpose and the amount spent on the scheme so far, the Ministry of Power stated:

> "Under Deen Dayal Upadhayaya Gram Jyoti Yojana, free electricity connections are provided to BPL families. Based on the DPRs submitted by the States, an amount of Rs.9482.08 crore has been allocated for providing free electricity connections to BPL households so far. Out of the sanctioned allocation, cumulatively an amount of Rs.4912 crore has been released to States, as on 31.10.2016.

2.26 The State wise amount allocated for release of free electricity connections to BPL Households and amount released under DDUGJY (including erstwhile RGGVY) as furnished by the Ministry of Power:

Rs. in crore

S. No.	State	Amount allocated	Amount released (As on 31.10.2016)
1	Andhra Pradesh	308.15	235.81
2	Arunachal Pradesh	10.55	9.75
3	Assam	423.07	281.91
4	Bihar	2799.94	1066.03
5	Chattisgarh	288.45	178.20
6	Gujarat	152.65	147.63
7	Haryana	45.81	26.72
8	Himachal Pradesh	3.46	3.47
9	J&K	23.85	11.57
10	Jharkhand	439.86	290.70
11	Karnataka	195.61	132.19
12	Kerala	35.04	38.72
13	Madhya Pradesh	638.13	417.67
14	Maharashtra	253.80	244.98
15	Manipur	29.92	17.17
16	Meghalaya	26.96	20.25
17	Mizoram	5.76	3.34
18	Nagaland	23.71	14.12
19	Orissa	1159.12	580.00
20	Punjab	19.06	13.48
21	Rajasthan	348.48	217.26
22	Sikkim	2.70	2.03
23	Tripura	51.13	35.31
24	Tamilnadu	115.63	73.28
25	Telangana	120.61	106.14
26	Uttar Pradesh	1357.18	290.77
27	Uttarakhand	36.74	29.91
28	West Bengal	566.75	423.13
	Total	**9482.08**	**4911.54**

2.27 On being queried about the monitoring mechanism in place to ensure the timely implementation of the projects under Deen Dayal Upadhayaya Gram Jyoti Yojana (DDUGJY), the Ministry of Power stated:

> "At Utility level, they need to create a dedicated team for implementation of projects including necessary manpower and requisite infrastructure to ensure smooth implementation and monitoring. An officer of the rank of Chief Engineer/General Manager or above is designated as Nodal Officer and is responsible for implementation of scheme in accordance with the prescribed guidelines, providing all necessary information including physical & financial progress related to the projects and arrange to get relevant orders/clearances from the State Government. To assist utilities, provision for deployment of a Project Management Agency (PMA) has been made under the scheme for ensuring timely implementation of the project for which 100% grant is provided by Government of India up to 0.5% of cost of works.
> At State level, a committee under the Chairmanship of Chief Secretary is in place to monitor progress and resolve issues relating to implementation viz. allocation of land for sub-stations, right of way, forest clearance, railway clearance, safety clearance etc.
>
> At District level, District Development Co-ordination & Monitoring Committee namely DISHA (administered by Ministry of Rural Development) headed by senior most Member of Parliament (Lok Sabha) is in place to review and monitor implementation of central sector schemes including DDUGJY.
>
> Rural Electrification Corporation Limited (REC), the nodal agency, monitor implementation of scheme through its project offices at field level. REC is developing a web enabled Mobile App, similar to the Mobile App – 'GARV' already in existence for village electrification, for near real time up-dation of progress under the scheme by the implementing agencies of States.
>
> At Central level, inter-ministerial Monitoring Committee on DDUGJY headed by the Secretary, Ministry of Power, Govt. of India also monitor implementation of scheme. Besides, the progress is reviewed with States / Power Utilities in Review, Planning and Monitoring (RPM) meeting of Ministry of Power on monthly basis".

2.28 When asked the steps taken to ensure that the quality of the work done under the DDUGJY scheme is of high approved standard and whether any life span is given for the equipments/systems and other material used under the scheme, the Ministry of Power stated:

> "To ensure longevity of infrastructure and quality of material / equipment, standard technical specifications of material and equipment have been prescribed along with construction standards for various types of works. These specifications and standards have been covered in the Standard Bidding Document prescribed for implementation of scheme. The standard bidding document also includes all the measures to be taken up to ensure quality of works.

2.29 The Ministry of Power has also stated that robust Quality Assurance Mechanism is already put in place to ensure quality of the work done under the scheme that include

inspection of major materials at manufacturer premises before dispatch. The Quality Control Mechanism are as follows:

(a)Three Tier Quality Control Mechanism under RE Component of DeenDayalUpadhayaya Gram JyotiYojana :

A Three Tier Quality Control Mechanism has been put in place to assure proper quality in the infrastructure created under DDUGJY XI & XII Plan. Project implementing agency (PIA), REC &MoP respectively enforce Tier-I, Tier-II and Tier-III of Quality Control Mechanism through independent agencies.

The scope of Tier-I (Third party inspecting agency), Tier-II (REC quality monitors) and Tier-III (National Quality monitors) is to verify 50%, 10% and 1% of villages covered under DDUGJY respectively. TPIA (Tier-I) conducts pre-dispatch inspection of 10% of major items (DTR, conductor, Energy Meter, Poles and insulators) and RQM (Tier-II) conduct pre dispatch inspection of six major items at vendor's outlet. NQM (Tier-III) review the test records.

(b) Quality Control Mechanism under new projects of DeenDayalUpadhayaya Gram JyotiYojana

The Project Implementing Agency (PIA) shall be solely responsible and accountable for assuring quality in DDUGJY works. PIA shall formulate a detailed comprehensive Quality Assurance (QA) Plan for the works to be carried out under DDUGJY. However, a single tier quality assurance mechanism is put in place to verify quality of works carried out in the Projects which are as follows:

REC shall outsource independent agency(ies) designated as REC Quality Monitors (RQM) to ensure quality of materials procured and shall also verify quality of works carried out under the DDUGJY scheme. RQM shall carry out pre-dispatch inspection of six materials randomly in a single lot containing minimum 10% materials at manufacturer works. RQM shall also verify quality of works carried out in the Project, which are as follows:

- 100% of the Un-electrified and 10% of Intensive Electrified villages where electrification works has been carried out excluding SAGY villages, *(Note:VillagesincludesHabitations/Dhani/Majra/Tolas/Thandasetc.)*
- 10%ofFeeders created under Feeder Separation,
- 1% Consumer Meters & 10% of Industrial/Commercial Meters or 3-Phase Distribution TransformerMeters,
- 100%works carried out in SansadAdarshGram Yojana(SAGY),
- 100%of new substations(66/11 or 33/11kV),
- 25%of augmented substations (66/11 or33/11kV)

2.30 Suggested measures to facilitate release of connections to households as furnished by the Ministry of Power:

"States / DISCOMs need to create awareness amongst public at large on uses of electricity, cost of accessing, cost of uses vis-à-vis cost being incurred on conventional means as a replacement of electricity including both direct & indirect costs, billing process, bill payments, immediate benefits of uses both tangible and intangible (quality of life, health, education, security etc.), future prospects in income generation;

employment etc. by reaching them from door to door with correct information and motivate them to obtain electricity connections. States / DISCOMs to focus on quality, reliability, quantity & timings of power supply in rural areas. This is essential to create willingness amongst prospective consumers to obtain electricity connection. States / DISCOMs may take up extensive drive to curb theft of electricity. States need to rationalise cost of connection, particularly for households and allowing payment in installments over the period. In addition to this, rationalizing of tariffs in line with tariff policy 2016 is also desirable.

2.31 The proposed strategy and action plan of the Ministry of Power for near real time monitoring of DDUGJY projects and household electrification as

- Off-grid solutions, standardization process
- Fund availability and innovative Financing
- Handholding States/DISCOMS
- Rigorous Monitoring from apex level
- Monthly review by Hon'ble Minister and Secretary, Power
- Role of nodal agency, REC web-based monitoring field inputs, Milestones.

Chapter III

Decentralized Distributed Generation (DDG)

3.1 According to the Ministry of Power, Decentralized Distributed Generation (DDG) under Deen Dayal Upadhyaya Gram JyotiYojana (DDUGJY) is for providing electricity access to the un-electrified villages/habitations where grid connectivity is either not feasible or not cost effective. DDG means access to electricity through conventional or renewable sources such as biomass, biofuels, biogas, Mini hydro, solar etc.

3.2 The Ministry of Power has reported that 4,604 new DDG projects have been sanctioned as off grid distribution network covering 3,586 un-electrified villages and 1,87,286 BPL households with the project cost of Rs.1470.64 crore, using renewable source of energy, mostly solar energy. As on 31.10.2016, 518 projects have been commissioned under DDG.

3.3 The Ministry of Power further stated that as informed by the States, there were 18,452 un-electrified villages in the Country as on 01.04.2015. Out of these, 10,628 villages have been electrified as on 31.10.2016 and remaining 7,824 un-electrified villages are targeted to be completed by May, 2018. Under DDUGJY scheme free electricity connections are provided to BPL households. During FY 2015-16 and 2016-17 (upto 31.10.2016) free electricity connections to 14,39,144 and 17,64,503no. of BPL households has been released respectively. Under RE component of DDUGJY upto FY 2014-15 total 2.17 crore BPL connections were released.

3.4 When asked to furnish details about the Decentralized Distributed Generation (DDG), the MNRE in a note stated:

> Decentralized Distributed Generation (DDG) under Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) is for providing electricity access to the un-electrified villages/habitations where grid connectivity is either not feasible or not cost effective. DDG can be from conventional or renewable sources such as biomass, biofuels, biogas, Mini hydro, solar etc. DDG scheme provides a subsidy towards 60% (85 % for special category states) of the project cost. However, an additional subsidy of 15% (5 % for special category states) is applicable subject to timely completion of DDG projects. The balance amount can be arranged by the State Govt./Implementing Agency through Loan/Equity. Initially, DDG was a sub-scheme of erstwhile RGGVY programme. Guidelines for village

electrification through DDG were issued by Ministry of Power vide Order No.44/1/2007-RE dated 12.01.2009. Later RGGVY subsumed into DDUGJY.

3.5 Regarding covering of the BPL Household under the Scheme, the MNRE stated:

"242 projects in 18 districts covering 484 villages/hamlets and 21,705 BPL households have been sanctioned under XI Plan with an amount of Rs. 179.65 crore. During XII Plan, under DDG, 495 projects have been sanctioned in 28 districts covering 653 villages/hamlets and 19,415 BPL households for a total cost of Rs.167.72 crore in the States of Andhra Pradesh, Chhattisgarh, Jharkhand, Rajasthan, Kerala, Karnataka, Meghalaya, and Odisha. Under DDUGJY Plan, 3867 projects have been sanctioned in 91 districts covering 3608 villages/hamlets and 1,46,166 BPL households for a total cost of Rs.1123.27 crore in the States of Andhra Pradesh, Assam, Arunachal Pradesh, Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Meghalaya, Odisha and Uttarakhand.

3.6 When asked about the number of BPL households which are yet to be given electricity connection and the time by which such households be given the electricity connection, the Ministry of Power stated:.

"427 lakh BPL households have been covered for release of free electricity connections. Out of these, cumulatively, as on 31.10.2016, free electricity connections to 250 lakh BPL households have been released. The projects sanctioned under the scheme are expected to be completed within 24 months from award of contracts.

3.7 When asked about the year-wise financial achievement of electrification of BPL Households, the Ministry of Power furnished:

Year	Fund Released by MoP(Rs. In Crore) (As on 30.09.2016)
2004-05	400.00
2005-06	1100.00
2006-07	3000.00
2007-08	3913.45
2008-09	5500.00
2009-10	5000.00
2010-11	5000.00
2011-12	2237.31
2012-13	697.94

2013-14	2938.52
2014-15	3374.41
2015-16	4500.00
2016-17	2946.26
Total	40607.88

3.8 On further query about the number of projects covered under the DDG Scheme, the MNRE stated:

> "As on date, 4604 DDG projects for a total project cost of Rs.1470.64 crore have been sanctioned covering 4745 villages/hamlets (3,586 UEVs) with 2,40,911 households have been sanctioned in various states across the country. Almost all the sanctioned DDG projects are based on Solar PV technology. Out of 4,604 DDG projects, 2,224 projects are based on standalone systems and balance are mini/micro grids. 518 mini/micro grids have already been commissioned in Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Kerala, Uttar Pradesh, Karnataka and Uttarakhand. As the villages electrification is being carried out on mission mode, the target is to commission all the sanctioned DDG projects by the end of FY 2016-17.

3.9 The brief detail of the sanctioned project including Household covered under DDG is given in *Annexure -III*

3.10 On being asked as to whether the electrification under the DDG projects has been successful in achieving its goal, or whether the programme needs a review, the MNRE stated:.

> "In order to expedite the implementation of DDG projects, amendments to DDG guidelines have been issued time to time. In January 2016, Standalone system (roof top) has been introduced under DDG. The standalone system consists of 200 Wp panel, battery, 5 LEDs, Fan, Mobile charger, 25 watt power socket etc. One standalone systems is given to each household (HH). Standalone is generally provided in the villages/hamlets where the cost of electrification per HH through mini-gridis more than Rs.1 lakh or the no. of HHs in the villages is less than 15 or the HHs are scattered and the average distance of LT line per HH is more than 200 meters. Further, payment terms in the DDG guidelines had been stipulated in such a way that only 60 % of the subsidy amount is released till commissioning and remaining 40% in the span of five years subject to successful running of the plant. However, due to these payments terms, most of the developers were not coming forward to participate in the bidding process. To maximize the participation of developers few modifications including payments

terms, Pre-Qualifying requirements (for the eligibility of developers to participate in tendering) were approved by Monitoring Committee in DDG guidelines. Keeping in view the fact that the areas being covered under DDG are highly inaccessible and approach is very tough. There is no road connectivity and there is no mode of transportation available. Most of the habitations/villages are either tribal, LWE affected, inside forest area, after river crossing, hilly region etc and hence to work at these places is a challenge. Due to remoteness of execution of DDG projects and its exclusive of sustainability of the system for 5 years after commissioning had restricted participation of too many bidders. Hence, the pace of work was initially not overwhelming.Sensing this, Pre-qualifying requirements were reviewed with all stakeholders and were revised to maximize the participation of developers. It may be mentioned that the implementation of DDG scheme is dependent on the response of State Project Implementing Agencies (PIA)".

3.11 On a query regarding the sustainability of the projects executed under DDG scheme, the MNRE stated:

"DDG scheme has provision of sustainability of system after commissioning for 5 years. To ensure this, percentage payment of contractor is released annually in 5 tranches on certification of satisfactory operation and maintenance of the system by PIA. PIA is also required to submit the generation report of power plants periodically. The DDG projects are being implemented on BOMT basis (Build operate maintain and transfer). The successful developer has to install and run the plant for 5 years. After that the projects are transferred to the State Govt. and it's the discretion of State Govt. whether to either appoint the same developer for the maintenance of the projects or any other developer".

3.12 When the Ministry of Power were asked about off-grid solutions and standardization process for monitoring of the projects, they stated:

"Provision has also been made for providing Standalone systems for households. DDG scheme provides a subsidy towards 60% (85 % for special category states) of the project cost. However, an additional subsidy of 15% (5 % for special category states) is applicable subject to timely completion of DDG projects. The balance amount can be arranged by the State Govt./ Implementing Agency through Loan/Equity.

As on date, 4604 DDG projects for a total project cost of Rs.1470.64 crore have been sanctioned covering 4745 villages/hamlets (3,586 UEVs) have been sanctioned in various states across the country. Out of 4,604 DDG projects, 2,224 projects are based on standalone systems and balance are mini/micro grids. 518 mini/micro grids have already been commissioned in Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Kerala, Uttar Pradesh and Uttarakhand.

To help the States, Standard Bidding Document has been prepared and shared with States. This brings uniformity across the States. In addition to this technical specification of high value items has also been shared with States to enable standard high quality items being used in rural electrification works**.**

3.13 On a query about the concept of innovative financing and the methodology involved to implement DDG as well as the concept of hand-holding States/Discoms and how it will help in energy access, the Ministry of Power stated:

The financing pattern of DDUGJY scheme provides incentives to the performing State Utilities. Under the scheme (including off-grid), the states are eligible for the subsidy @ 60% of the project cost (85% for special category state). However, if the stipulated milestones are achieved by the state Utilities the subsidy component shall increase to 75 % of project cost (90% for special category states). Milestones for release of additional grant (i.e. 5% for special category States and 15% for other States) are:-

a) Timely completion of the scheme as per laid down milestones

b) Reduction in AT & C losses as per trajectory finalized by MOP in consultation with State Governments (DISCOM-wise)

c) Upfront release of admissible revenue subsidy by State Govt. based on metered consumption.

3.14 When asked about the monitoring mechanism available at various tier, the Ministry of Power stated:

"Review Planning Monitoring (RPM) Meeting of highest level officers is conducted every month to discuss the progress of village electrification work. The meeting is chaired by Secretary (Power) and attended by Energy Secretaries/ CMDs/MDs of the DISCOMs.

Progress of works are also reviewed periodically by District Electricity Committee (DEC) with senior most MP as a chairman and the members are other MPs, District Collector, District Panchayat President/ Gram-sabhapati, MLAs, CE/SE of concerned DISCOMs etc. DEC has now subsumed in 'DISHA'.

REC has nominated senior officers (Executive Director/GM/AGM level officers) as the nodal officers for few specific states. They are visiting the states and reviewing the progress of works in the states.

Monitoring has been simplified by the GARV app wherein the online status of village electrification can be gathered immediately.

In addition to above regular stock taking of the progress is also monitored by Cabinet Secretariat. Prime Minister's Office (PMO) also review the progress of village electrification. At the State level Chief Secretary level SLMC reviews the progress of the Scheme and projects".

3.15 On a query regarding the monitoring mechanism in place so as to ensure completion of the projects under DDG at desired standard and quality with the MNRE, they stated:

> "Monitoring Committee on 4th January, 2016 has approved the revised Quality mechanism for the implementation of DDG projects in DDUGJY. Quality Plan for the DDG projects has already been prepared by REC, vetted by MNRE and circulated to all Implementing Agencies. For DDG projects under erstwhile there was provision of 3 tier quality mechanism. However Implementation Support Group in its 16th meeting indicated that "Quality of the DDG projects should be ensured by REC as Three Tier Quality Control Mechanism (as mentioned in DDG Guidelines) may not be appropriate for DDG projects. Accordingly, REC has sent its engineers to most of the commissioned DDG projects in Andhra Pradesh & Chhattisgarh for effective Quality Monitoring. Also, Third Party inspection Agency (TPIA) has to be appointed by all the Implementing Agency for all the DDG projects".

CHAPTER IV

Remote Village Electrification Programme

4.1 The Ministry of New and Renewable Energy is implementing Remote Village Electrification (RVE) Programme for providing financial support for lighting/basic electricity using renewable energy sources in those unelectrified remote census villages, unelectrified hamlets of electrified census villages where grid connectivity is either not feasible or not cost effective & not covered under RGGVY for grid electrification.

4.2 Regarding the mode of implementation, the MNRE has stated that the programme is implemented in states by state notified implementing agencies such as the state nodal agencies for renewable energy, Power Departments, or the Forest Departments.

4.3 As regard the provision of subsidy, the MNRE stated:

> "The Ministry provides to the state implementing agencies a subsidy of up to 90% of the costs of installation of various renewable energy devices/systems subject to pre-specified maximum amounts. Till date,13,059 no. of remote unelectrified census villages and unelectrified hamlets of electrified census villages have been sanctioned for providing basis lighting facilities under the RVE programme.

4.4 Details of the villages/hamlets sanctioned/electrified under Remote Village Electrification Programme as on 31st August, 2016 as furnished by the Ministry :

i) Total Villages and Hamlets sanctioned - 13059 (10156+2903)

ii) Total Villages and Hamlets completed - 11335(9006+2329)

iii) Total Villages and Hamlets under implementation - 637(306+331)

iv) Total Villages and Hamlets dropped by the States - 1087 (844+243)
(out of the sanctioned projects)

4.5 The State-wise physical progress of implementation of Remote Village Electrification Programme as on 31 August, 2016, as furnished by the Ministry:

Sl. No.	State	Total Villages Sanctioned	Villages Completed	Ongoing villages	Total hamlets sanctioned	Hamlets completed
1.	Arunachal Pradesh	297	297	0	1	0
2.	Andhra Pradesh	0	0	0	13	13
3.	Assam	2192	1953	38	0	0
4.	Chhattisgarh	682	568	0	0	0
5.	Gujarat	38	38	0	0	0
6.	Haryana	0	0	0	286	286
7.	Himachal Pradesh	21	21	0	1	0
8.	Jammu & Kashmir	476	334	36	283	15
9.	Jharkhand	720	700	0	0	0
10.	Karnataka	22	16	2	57	14
11.	Kerala	0	0	0	607	607
12.	Madhya Pradesh	623	577	17	0	0
13.	Maharashtra	353	340	0	0	0
14.	Manipur	237	237	0	3	3
15.	Meghalaya	163	149	0	0	0
16.	Mizoram	20	20	0	0	0
17.	Nagaland	11	11	0	0	0
18.	Orissa	1720	1614	16	23	14
19.	Rajasthan	340	305	24	90	90
20.	Sikkim	0	0	0	13	13
21.	Tamil Nadu	0	0	0	184	131
22.	Tripura	85	60	23	944	782
23.	Uttarakhand	671	476	142	147	118
24.	Uttar Pradesh	284	113	0	223	222
25.	West Bengal	1201	1177	24	9	2
26.	Goa				19	19
Total		**10156**	**9006**	**306**	**2903**	**2329**

Notes :174 villages in Assam, 114 villages in Chhattisgarh, 106 villages and 5 hamlets in Jammu and Kashmir, 20 villages in Jharkhand, 4 villages in Karnataka, 29 villages in Madhya Pradesh, 13 villages in Maharashtra, 14 villages in Meghalaya. 104 villages & 9 hamlets in Orissa, 24 villages in Rajasthan, 2 villages in Tripura, 53 villages in Uttarakhand, 171 villages and 1 hamlet in UP and 13 hamlets in Karnataka, 162 hamlets in Tripura and 53 hamlets in Tamil Nadu have been cancelled by the State Governments as they were taken up for grid electrification.

CHAPTER V

Off-Grid / Decentralized Solar PV Programme

5.1 As reported by the MNRE, Under the Off-Grid / Decentralized Solar PV Programme, various off-grid/grid-connected and decentralized photo voltaic systems/ applications up to a maximum capacity of 500 kWp per site are supported to meet/supplement lighting, electricity/power. Solar photovoltaic power plants having unit capacity up to 500 kWp in mini-grid mode for rural electrification is supported under the programme.

5.2 The Scheme is implemented through multiple implementing agencies for rapid up-scaling in an inclusive mode. These agencies enable significant reduction in transaction cost and time, since individuals and small groups of clients are in a position to access the provisions of the scheme. The following Categories of implementing agencies are involved in the implementation of the Scheme:

i) State Renewable Energy Development Agencies (State Nodal Agencies)

ii) Financial Institutions/Financial Integrators (e.g. NABARD and Regional Rural Banks, Commercial Banks, IREDA and NHB)

iii) Channel Partners including RESCO

iv) Solar Energy Corporation of India

v) Other Large Govt. Departments/PSUs

5.3 Under the Solar PV Programme, the Ministry has been providing subsidy as under :

i) 30% of bench mark cost for solar lanterns, solar home lights, street lights, power packs/plants and solar pumps. For systems larger than 5kWp or equivalent, the funding under the scheme is in Project mode.

ii) 40% of bench mark cost for solar lanterns, solar home lights, street lights, small capacity power plants etc. up to 300Wp unit capacity through NABARD/ SECI/ RRBs/Commercial Banks/IREDA/NHB.. For more than 300Wp to 1 kWp capacity, Ministry provides subsidy @30% of bench mark cost. Loan from the bank is mandatory to avail subsidy under the category. Only individual beneficiaries are eligible to avail subsidy under this category.

5.4 The Ministry has taken up an ambitious programme for installation of 1,00,000 solar water pumping systems for irrigation and drinking water with 30% MNRE CFA in different States of the country. Under the programme Ministry has sanctioned more than 2,00,000 pumps during 2014-15 ,2015-16 and current year and total of 1,24,732 Solar pumps will be installed through the State Govt. Agencies and 15330 pumps has been earmarked for community drinking water supply in collaboration with Ministry of Drinking water and sanitation. In addition 30,000 solar pumps will be installed through bank loan with 40% MNRE CFA for irrigation purpose to individual farmers. The NABARD is the Nodal Agency Agency for this scheme. Under the scheme Banks (Regional Rural Banks, Commercial Banks etc.) extended the loans at normal interest rates and subsidy component to the beneficiaries. As on 31.08.2016, 82,502 Solar pumps installed throughout the country.

5.5 When asked about the State-wise progress of solar pumps for irrigation & drinking water sanctioned and achievement, the Ministry furnished as under:

State	**Total Sanctioned**	**Installed**
Andhra Pradesh	18407	7161
Arunachal Pradesh	118	18
Assam	45	45
Bihar	6682	2882
Chhattisgarh	17125	4668
Goa	15	15
Gujarat	10883	4023
Haryana	4466	543
Himachal Pradesh	6	6
Jammu & Kashmir	39	39
Jharkhand	5133	1869
Karnataka	6276	3009
Kerala	2190	810
Madhya Pradesh	4805	3800
Maharashtra	10297	647
Manipur	40	40
Meghalaya	119	19
Mizoram	48	37
Nagaland	28	3
Orissa	8614	6119
Punjab	3457	1857
Rajasthan	41005	31823
Tamil Nadu	7952	4763

Tripura	151	151
Uttar Pradesh	16185	5730
Uttarakhand	26	26
West Bengal	653	653
Andaman & Nicobar	5	5
Chandigarh	12	12
Delhi	90	90
Puducherry	21	21
Telangana	5169	238
Total	170062	81122
NABARD	30000	1380
Grand Total	**200062**	**82502**

5.6 Regarding provision of Central Financial Assistance to Solar Pumping Programe, the Ministry stated:

> "The Ministry is implementing Solar Pumping programme with 30% Central Financial Assistance (CFA) through State Govt. Agencies for irrigation and drinking and also implementing through NABARD under which Regional Rural Banks, Commercial Banks etc. extended the loans at normal interest rates for 40% of the cost, whereas 40% is CFA and remaining 20% of the cost is beneficiary contribution. For Solar Water Pumping system, the capital subsidy is ranges from Rs.27,630 per Hp to Rs.57,600 per Hp depending upon category and capacity".

5.7 When asked the details regarding solar pumps to be established for individual farmers with forty per cent Central Financial Assistance, the Ministry stated:

> "The Ministry is providing a subsidy of 40% of the benchmark cost of the systems to individuals for installation of solar water pumping systems (up to 10HP). Ministry is implementing Solar Pumping Programme through NABARD and Regional Rural Banks (RRBs), Commercial Banks and other banks. The Ministry provides funds to NABARD for this purpose and NABARD passes the subsidy to RRBs and scheduled commercial banks/ Cooperation banks. RRBs and Scheduled commercial Banks/Cooperation banks will extend loan at normal interest rates or special interest rates up to the balance cost of the systems as per their own provisions".

5.8 When the Committee desire to know the cost of a solar pump along with the details of the implementing agencies in each of the state, the Ministry furnished the cost of the Solar pump along with the details of the implementing agencies as follow:

			Rs/HP	
Sno.	SPV System	Capacity	Through States (@30%)	Benchmark cost
1	DC Pumps	Up to 2 HP	Rs. 43200	144000
		>2HP to 5HP	Rs. 40500	135000
2	AC Pumps	Up to 2 HP	Rs. 37800	126000
		>2HP to 5HP	Rs. 32400	108000
		>5 HP to 10 HP*	Rs. 32400	108000

5.9 Details of Solar Pump implementing agencies are given at *Annexure-IV*

5.10 On a query regarding the life span and upkeep arrangements for running the solar pumps, the Ministry stated:

> "Complete 'Solar Water Pumping Systems' for irrigation and drinking water installed under MNRE programme are necessarily warranted for minimum 5 years as per the guidelines. Moreover, the solar panel, which is the costliest part of the system, is warranted for 25 years. After 5 years, the beneficiary may enter in to annual maintenance contract with the supplier / SURYAMITRAs. As per MNRE guidelines, all the PV Systems under MNRE programme have to comply with stringent 'MINIMAL TECHNICAL REQUIREMENTS / STANDARDS'. This ensures that the components used in the systems are durable and long life".

5.11 On being queried about the steps taken to popularize Solar Pumps, the Ministry stated:

> MNRE is providing 30 % subsidy to promote solar pumps through the state's nodal agencies.
>
> States are encouraged to club the scheme with other Govt. schemes to provide additional support to the beneficiary.
>
> MNRE has also initiated programme through 'NABARD' with 40% subsidy coupled with loan from banks (on commercial rate of interest) to promote the scheme.
>
> MNRE has empanelled Channel partners to promote installation of solar pumps through 'NABARD' scheme.
>
> MNRE has extended the subsidy scheme up-to 5 hp Solar Pumps. Moreover, a famer can even go up-to 10 hp Solar Pumps if required as per site/ field condition (with subsidy limited to that of a 5 hp Solar Pump)

5.12 When the Committee are anxious to know about the features of the solar water pumping system and its usefulness to farmers, the Ministry provided the salient features as follows:

> "Minimum water output" from a Solar PV Water Pumping System at different "Total Dynamic Heads" should be as specified in the 'PERFORMANCE SPECIFICATIONS AND REQUIREMENTS' issued by MNRE.
> This ensures that the farmer gets the optimal water discharge from the machine.
> All parts of the pump and the motor of the submersible pumps should be made of stainless steel (The manufacturers of pumps has to self-certify that, the pump and all external parts of motor used in submersible pump which are in contact with water, are of stainless steel).
> It ensures that the construction of the pump is made using parts which have a much higher durability and do not need replacement or corrode for a longer period.
> The PV modules should be mounted on metallic structures of adequate strength and appropriate design, which can withstand load of modules and high wind velocities **up to 150 km per hour**. The support structure used in the pumping system should be hot dip galvanized iron with **minimum 80 micron thickness**.
> This ensures a longer life for the support structure.
> To enhance the performance of SPV water pumping systems, manual or passive or auto tracking system must be used.
> This increases the total water discharge from the Solar Pump up-to 30% in a day.
> Maximum Power Point Tracker (MPPT) should be included.
> To optimally use the Solar panel and maximize the water discharge.
> The controller must have IP 54 protection or must be housed in a cabinet having at least IP 54 protection.
> To ensure longer life of the controller.
> Adequate protections should be incorporated against dry operation of motor pump set, lightning, hails and storms.
> To ensure trouble free operation of the system.
> Full protection against open circuit, accidental short circuit and reverse polarity
> To ensure trouble free operation of the system.

5.13 When asked as to what extent solar water pumping has reduced the dependence of farmers over conventional electricity, the Ministry stated:

> "The farmers using the solar pumps need not to depend on the conventional electricity, since they can use the Solar Pump for their irrigation needs. However, since the capacity of the Solar Pumps (and water discharge) are limited, farmers with higher requirements have to still depend on conventional electricity (though partially".

5.14 According to the Ministry, over one million households are already meeting their lighting energy needs through solar energy. Thousands of home lighting systems have been set up in far flung remote areas particularly in Jammu& Kashmir and north eastern region states. In last 5 years , banks provided loans for 2,50,000 solar home lighting systems in states including Haryana, Karnataka, Rajasthan, Uttar Pradesh and Maharashtra. Dissemination of these systems was funded through a mix of debt and incentives with households contributing upto 20% and 40 % subsidy from the government with loan being provided by National Bank for Agriculture and Rural Development (NABARD) to the primary lending institutions.

5.15 On being enquired about the concept of providing Modern Energy Services for lighting and Cooking purposes, at subsistence level, the Ministry stated:

> **"**Ministry is promoting Mini/Micro Grid under Off-grid Decentralized Solar PV Programme where Renewable Energy Service Providers(RESCOs) work as a minigrid operator & provide Renewable Energy Services to Rural Households through Distribution Network. Further, Ministry is also implementing family type Bios Gas programme, Gasifier Programme, Improved Cook-stove Programme for providing clean cooking and domestic / street light at grass-root level".

5.16 It has also been stated that Solar Street lighting system is also very useful application for public lighting purpose. Till now 4,00,000 Street Lights have been installed throughout the country. State wise SPV systems installed in the country is as under **:**

State/UT	Solar Photovoltaic Systems			Power Plants Stand Alone (KWp)
	Lanterns Nos.	Home Lights Nos.	Street Lights Nos.	
Andhra Pradesh	51360	22972	7812	3632.595
Arunachal Pradesh	14433	18945	1071	600.1
Assam	1121	6926	318	1605
Bihar	50117	7403	955	1021.6
Chhattisgarh	3311	7754	2042	23132.72
Delhi	4807	0	301	1269
Goa	1093	393	707	32.72
Gujarat	31603	9253	2004	13576.6
Haryana	93853	56727	22018	2321.25
Himachal Pradesh	33909	22592	34658	1375.5
Jammu & Kashmir	51224	65319	5806	7561.85
Jharkhand	23374	9450	620	3539.9

Karnataka	7334	49644	2694	4676.41
Kerala	54367	40412	1735	3894.39
Madhya Pradesh	9444	4016	9378	3654
Maharashtra	68683	3497	10293	3857.7
Manipur	4787	3900	1728	1241
Meghalaya	24875	7844	1273	884.5
Mizoram	9589	6801	1831	1185
Nagaland	6766	1045	4471	1292
Odisha	9882	5274	5834	567.515
Punjab	17495	8626	10758	1950
Rajasthan	4716	144564	6852	10350
Sikkim	23300	15059	504	850
Tamil Nadu	16818	137810	36802	12414.6
Telangana	0	0	0	4344
Tripura	64282	32723	1199	422
Uttar Pradesh	62015	235909	185091	9801.46
Uttarakhand	93927	91595	21632	1534.03
West Bengal	17662	145332	8726	1730
Andaman & Nicobar	6296	468	390	167
Chandigarh	1675	275	898	730
Lakshadweep	5289	0	1725	2190
Puducherry	1637	25	417	121
Others	125797	24047	9150	23885
NABARD	0	108000	0	0
Total	996841	1294600	401693	151410.44

5.17 To improve the standards of living and quality of life of all sections of population through improved, efficient and clean lighting and availability of power for day-to-day use, the Ministry of New and Renewable Energy has come out with a scheme named as Atal Jyoti Yojana (AJAY)**,** a sub-scheme under Off- Grid and decentralised Solar Application to provide Solar Street Lighting Systems in rural, semi urban and urban areas with inadequate coverage of the grid power. The scheme will involve Honourable MP's from LokSabha in the first phase of the scheme. Their understanding of needs and aspirations of the local people and their guidance in implementation will be very useful. They will also be requested to part fund the scheme through MPLADS.

5.18 Regarding implementation and financing of the Scheme under Atal Jyoti Yojana, the Ministry stated :

"The Scheme will be implemented in the states where the household electrification is less than 50% as per 2011 Census. Five states namely Assam, Bihar, Jharkhand, Odisha and Uttar Pradesh fall in the category. 75% of the cost of the street lights will be met through MNRE budget and remaining 25% can come from Member of Parliament Local Area Development Scheme (MPLADS) fund Panchayat funds or Municipalities and other Urban Local Bodies (ULBs) Funds.

5.19 The Ministry has further stated that Energy Efficiency Services Ltd, a public sector undertaking under Ministry of Power will implement the scheme. The project shall be implemented between the date of notification of the scheme and 31st March 2018.

5.20 When asked about the coverage under Atal Jyoti Yojana, its physical target and budgetary allocation, the Ministry stated:

"Atal Jyoti Yoaja (AJYAY) has been recently been approved. The Scheme will be implemented in Rural, Suburban, Urban areas of the five states (namely Uttar Pradesh, Odisha, Jharkhand, Bihar, Assam) having less than 50% electrified households. The Villages to be covered under the scheme will be selected by the Hon`ble MPs. Presently 169 constituencies of Uttar Pradesh, Odisha, Jharkhand, Bihar, Assam will be covered under the scheme".

5.21 Under Off grid and decentralized Solar PV application scheme, Ministry is providing support of 30% for promotion and installation of Mini /micro Grid system where remaining 70 % comes from System integrator and/or State government. The Central Financial Assistance for Mini/Micro grids is as follows :-

Rs per Wp						
Sno.	SPV System	Capacity	General Category States	NE States, A&N, Lakshadweep Islands	Special Category States	Channel Partners
1.	Micro Grid	Up to 10 kWp	Rs. 105	Rs. 115	Rs. 105	Rs. 100
2.	Mini Grid	>10 to 500 kWp	Rs. 90	Rs. 99	Rs. 90	Rs. 85

5.22 MNRE has also stated that they have drafted a National Mini Grid Policy in consultation with Stakeholder and Published the policy for comments for which more

than 32 organization/ individual has given the comments after which a public Consultation meeting was held under the chairmanship of JS (Solar Mission) and now the draft is in final stage of approval.

5.23 Regarding about Concentrated Solar Technology, the Ministry stated :

> "A significant part of India's low-medium temperature process heat need can be met by concentrating solar heat (CSH) technology systems –alongside process integrating and suitable heat storage. This would reduce global CO_2 emissions, air pollution, and India's growing dependence on expensive and insecure imported oil. The abundant solar radiation, clean character of solar energy, high cost of fossil fuels and negative emission consequences along with large requirements for process heat below 250°C are the key drivers of the strong focus on the development of solar thermal applications in India. The use of solar concentrator to meet the process heat requirement of industrial and commercial establishments is an emerging and exciting market opportunity in India.

5.24 The Ministry has stated that 4 types of concentrating solar technologies are presently in promotion for the purpose of process heat applications. These are i) Fixed focus E-W automatically tracked elliptical dishes ii) Single axis tracked parabolic trough concentrators & Linear Fresnel Reflectors iii) Dual axis fully tracked Paraboloid/ Fresnel Reflector based dishes and iv) Non-Imaging Concentrators.

5.25 For promotion of the solar technologies, the Ministry is providing support upto 30% of the system cost subject to certain benchmarks is available under off-grid scheme of JNNSM. Higher support of 60% is available in special category states. In addition 15% of the MNRE benchmark cost is available under UNDP-GEF CSH project for specific activities related to performance monitoring, preparation of DPR/ PFR and Operation & Maintenance of systems. The systems are being installed through State Nodal Agencies/ accredited private channel partners as per technical specifications laid down by MNRE. A total of about 196 systems have been installed so far in the country with a cumulative figure of over 47907 sq. m. of collector area.

CHAPTER VI

24 x 7 Power For All (PFA)

6.1 The Government of India has taken a joint initiative with respective State Governments for preparation of State specific documents for providing 24 x 7 power supply to all households/homes, industrial & commercial consumers and adequate supply of power to Agricultural consumers as per state policy. 24x7 'Power For All' Documents for 34 States/UTs (except Uttar Pradesh and Tamil Nadu) have been signed. During the current year 2016-17 (Upto September 2016), documents for 16 states / UTs viz. Chandigarh, Delhi, Jammu & Kashmir, Himachal Pradesh, Madhya Pradesh, Daman & Diu, Dadra & Nagar Haveli, Puducherry, Lakshadweep, West Bengal, Andaman & Nicobar Islands, Arunachal Pradesh, Manipur, Mizoram, Nagaland and Tripura have been completed and signed. These documents covers adequacy of generation, transmission capacity (Inter and Intra State) and distribution system. Plan related to energy efficiency and use of renewable energy are also incorporated.

6.2 The plans for each State/UT envisions reduction of AT& C losses by increasing the collection efficiency and effective metering so as to achieve financially viable 24x7 Power Supply. Also emphasizes on the development of transmission and sub transmission network which plays vital role in providing round the clock power supply. Implementation of the plan envisaged in the document is under progress, which is being jointly monitored by the State and the Central Government. Successful implementation of these plans will ensure reliable and affordable power round the clock to all the consumers.

6.3 Further, the Ministry of New and Renewable Energy (MNRE) has proposed 175 GW power capacity from various renewable energy sources by the year 2022. This includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro power. In addition, MNRE will also be promoting decentralized renewable systems for basic energy needs of cooking, household lighting and motive power uses.

6.4 When asked about the achievement of 24x7 Power For All so far and as to whether any review has been done of the scheme, the Ministry stated:

"24x7 Power for All" (PFA) is joint initiative of Govt. of India and State Governments with an objective to connect the unconnected households in phased manner by 2022 and ensure adequate power supply to agriculture consumers and 24 x 7 power supply to other consumers within a fixed time frame. To achieve the objectives of PFA, an assessment of the adequacy of availability of power to the States from various sources, adequacy of Inter State Transmission System (ISTS), Intrastate Transmission System and distribution infrastructure are reviewed in consultation with the States. For preparing PFA document, Ministry of Power has constituted a Central Team under leadership of CEA along with representation from REC, PFC, PGCIL, Ministry of Coal, MNRE, BEE& PTC. Presently PFA document for all the States/UTs except Tamil Nadu and Uttar Pradesh have been signed. Central Government is supplementing the efforts of States / UTs through its schemes viz: Integrated Power Development Scheme (IPDS) and Deen dayal Upadhyaya Gram Jyoti Yojana (DDUGJY).

6.5 On a query about the achievement made with various initiatives i.e. KutirJyoti Scheme and Pradhan Mantri GramodayaYojana and Accelerated Rural Electrification Programme, the Ministry stated:

"Kutir Jyoti, Pradhan Mantri Gramodaya Yojana and Accelerated Rural Electrification Programme have been subsumed in Deendayal Upadhayaya Gram Jyoti Yojana under which free electricity connections to 2.45 crore BPL households have been released as on September, 2016.

Part –II
Observations/Recommendations of the Committee

1. The Committee note that the concept of energy access has not been dealt with in the manner having focus on providing electricity to all the villages/persons irrespective of size and the geographical locations in the country. Access to energy is essential for economic growth and human development. Its absence constraints generation of productivities, income and employment. The proposition of energy access as such envisions the ability to obtain the energy access on demand/desire. It must also be within the economic connection and supply range of the energy network or supplier. For universal access to energy to electricity its prerequisites are that we should have a clear definition of energy access. To meet it in reality, lot of spade work in cohesion may be required which would have innovative institutions, enabling mechanism targeted policies, subsidies and finances within its ambit. Considering the scenario in its entirety and the stakes involved, the Committee recommend that a clear definition of energy access be laid down with the objective of achieving it for the growth of the people and the backward areas of the country. The definition may, inter alia, include availability of energy to one and all in every nook and corner of the country irrespective of the geographical constraints and non-availability of conventional electricity network/carrier.

2. The Committee note that lack of energy access is mainly rural issue. The Committee are also aware that a sizeable population of urban areas are also deprived of the energy access, yet, the problem mainly revolves around rural context where it is phenomenally higher than urban areas. In view of the Committee, the lack of electrical infrastructural network is a significant factor contributing to the state of absence of electricity access of common man in the country. Another important factor adding to the problem is the non-availability of accurate figures regarding unelectrified villages and households of the country. Government mainly relies on the figures supplies by the State Governments and there are huge discrepancies with regard to the electrified/unelectrified villages of the country. The mismatch in figures makes the scheme of electrification of

villages ineffective and defunct. The flagship schemes of the Government like RGGVY and DDUGJY have not yielded the desired results despite the utmost sincerity and efforts of the Government. The intrinsic question comes as to why we are unable to achieve the target. So long as we do not develope a countervailing mechanism to authenticate the number of electrified/unelectrified villages/households, this problem will remain unresolved and we will be shooting in the dark only. An effective mechanism should be developed, which is not an unattainable task to minimize the dependence on the procedure of the acquisition of figures for this purpose. Some unconventional methods will have to be explored to know the accurate and real numbers of unelectrified villages/households. This identification could be done with the help of the new agencies like Urja Mitra and the elected representatives of the people. Therefore, the Committee recommend that for the purpose of the electrification of villages and to ensure energy access to all, the identification of villages should be done at block level through independent agencies/individuals in which the elected representatives can also be involved to endorse the findings of such individuals/agencies. They may also be asked as to how and in what manner energy access can be made a reality in remote and inaccessible areas or where this is yet become a reality. This exercise will help in mapping the unelectrified villages and also fixing the requirement of energy.

3. The Committee note that Electricity For All has been a declared objective of the Union and State Governments since 1970, when the rural electrification was identified as a key component of the minimum needs programmes. A number of schemes like Kutir Jyoti Scheme, Pradan Mantri Gramodaya Yojana, the Accelerated Rural Electrification Programme and the Accelerated Electrification of one lakh villages and one crore households in the year 2004-05, RGGVY and DDUGJY have been initiated. The Committee note that despite a plethora of schemes, we have not been able to achieve the objective of electricity for all or the energy access by the common man in the country. There is no denying the fact that considerable progress has been made but a lot needs to be done to attain the goal of energy access. The Committee feel that to achieve the purpose, the involvement of local people from project conceptualization of commissioning

and sustained operation, maintenance could be the important factors for its success. The energy can be from grid, off-grid solutions including mini grid or standalone systems. Therefore, the Committee recommend that the outcome of each of the schemes initiated so far with regard to Electricity For All may be reviewd and shortcomings/deficiencies identified to fix them, so that ongoing schemes/programmes do not suffer from the same deficiencies which have been responsible for the non/short delivery or performance schemes implemented to provide Electricity For All.

Deen Dayal Upadhaya Gram Jyoti Yojana (DDUGJY)

4. The Committee note that the Deen Dayal Upadhaya Gram Jyoti Yojana (DDUGJY) aims at electrification of the unelectrified villages of the country. Villages are to be electrified through grid connectivity and the term of the scheme has been extended up to 2020. The Committee feel that this flagship scheme of the Government has a potential to fulfil the ambition of energy access in India to a greater extent. The Scheme has a total outlay of Rs.40300 crore with the budgetary support of Rs.33453 crore. Under the scheme, Government has also taken up a joint initiative with the States for preparation of state specific action plan for 24x7 power for all. Besides, rural electrification component projects with outlay of Rs. 32860 crore have also been subsumed in DDUGJY making the total outlay of the scheme to Rs. 75893 crore of which 63.27 will be provided through budgetary support of the Government and balance would be contributed by the States from their own resources/loans from financial institutions/banks. The Committee note that there is no financial crunch as far as the implementation of the scheme is concerned. However, despite availability of funds and other required infrastructure to implement the scheme, the desired progress has not been made to achieve the physical targets. The tenure of the scheme is being extended every time on the non-achievement of the targets. This situation leads us to believe that there may be systemic shortcomings which are hampering the growth and achievement of desired results under the scheme. There is no guarantee that the scheme will not be further extended beyond 2020 and all the targets will be achieved within the extended stipulated timeline. This kind of the approach instills the sence of lethargy in the implementation of the scheme and

prevents us to identify and rectify the systemic inefficiencies. The indefinite procrastination will eat up our resources and multiply the simple problem into manifolds. This attitude cannot be allowed to persist. Therefore, the Committee recommend that since the inception of RGGVY in the year 2005, the scheme should be analysed thread bare and reasons be identified for its failure to achieve the targets. It should also be found why the problem has not been fixed so far. The Committee further recommend that urgent and efficacious measure should be explored to make the implementation of the scheme a success failing which the responsibility for non-achievement of the target under the scheme should also be fixed.

5. The Committee note that during the 10th and 11th Plans, the target under each category of the electrification i.e (i) Unelectrified villages (ii) Intensive electrification of electrified villages and (iii) BPL connections were not met by good margin. Only 2,28,06032 BPL connections could be provided against the target of 2,64,93948. Moreover, there is no clarity with regard to intensive electrification of village and electrification of village. There is always a difference of opinion with regard to the number of electrified villages and the remaining villages for electrification. The Committee has also been apprised that no targets are fixed for intensive electrification of electrified villages. This kind of approach results in duplicity of work as well as in sham exercise in the name of electrification. It also raises the question as to what is the basis for selection of electrified villages for intensive electrification. This is an inconsistent policy leaving much scope for discretion, insincerity and specious approach. The besetting of these factors into any scheme are sufficient to make it unworthy, disoriented and unproductive. The Committee, therefore, recommend that keeping in view the nature of the scheme, the multiplicity of the agencies involved therein and the high stakes that the scheme carries a proper, thoughtful, inclusive, implementable and target-oriented guidelines should be framed to make it successful. There is no point in indulging over repeat exercises like partial electrification and intensive electrification of villages. It is a waste of time and resources and should be avoided at any cost. The Committee further recommend that appropriate guidelines in this regard may be framed or reframed

immediately as the case may be and the Committee be apprised of the action taken in this regard.

6. The Committee note that during the 12th Plan period, total 768 projects under DDUGJY have been sanctioned. These projects include 495 off-grid projects. The project cost for the sanctioned project is Rs.23774 crore of which Rs.167 crores are for off-grid projects. This will cover the electrification of 9125 unelectrified villages of which 113 unelectrified villages will be of off-grid. Intensive electrification of 231852 electrified villages will also be done during the period and release of free electricity connection of 132.56 lakh BPL households will be done of which 19415 such households will be from off-grid. As on 30.09.2016, electrification of 4701 villages has been done including 53 villages from off-grid sources. Intensive electrification of 41554 electrified villages has been done whereas 12.87 lakh BPL households connections have been released. The Committee note that the 12th Plan period is about to end but we are not even half way to the target in any of the category of electrification. This needs serious appraisal on an urgent basis as to why we are lagging behind in electrification under DDUGJY. The Committee are aware that usual excuses will be given for non-performance. This trend is not at all acceptable and there should be some element of accountability for non-achieving the target. When the projects were sanctioned and targets set, the entire process of electrification might have been conceived and laid down. If the possible hurdles hampering the progress and their remedy cannot be foreseen, thereby, resulting in the time and cost overrun, it raises serious questions about the efficacy of the scheme as well as the competence of the agencies involved. The Committee, therefore, recommend that the target under DDUGJY should be fixed in a realistic manner and once they are finalized, there should be no compromise for any reason whatsoever with regard to the achievement of the targets. Adducing reasons and excuses for non-performance will give leeway to the officials/agencies to escape accountability which will not be in the interest of the timely completion of the project and achievement of the targets.

7. The Committee have been apprised about the concept of the intensive electrification of the electrified villages stating that keeping in view the objective of the scheme to provide access to electricity to all households, it is envisaged to create rural electricity infrastructure in un-electrified villages as well as in already electrified villages. Creation of rural electricity infrastructure in already electrified villages for providing access to electricity to remaining un-electrified households and providing free electricity connections to BPL households has been termed as 'Intensive Electrification of Villages' under the scheme. Under Intensive Electrification (IE) mainly lines are erected and capacity of distribution transformer is enhanced. It has also been stated that against the sanctioned 7,28,440 number of electrified villages for intensive electrification, as on 30.09.2016 electrification of 3,81,430 electrified villages has been completed so far. The Committee are concerned to know the prevailing state of affairs under the DDUGJY for intensive electrification of electrified villages which envisages creation of rural electricity infrastructure in un-electrified villages as well as in electrified villages. This is surprising as to whether the electrification already done in a village of whatever quantity is done without electricity infrastructure? Why this repeat exercise in the face of the fact that huge number of villages are still left for electrification. The Committee do understand that the electrification of entire village is essential but it should have been done from the beginning itself instead of indulging in this kind of time and money consuming frivolous exercises. The Committee, therefore, recommend that henceforth, it should be ensured that the factors like intensive electrification of electrified villages should be avoided and all out efforts should be made for the wholesome electrification of the un-electrified villages and also of the partially electrified villages so as to avoid the repeat exercise involving time, money and technical efforts.

Decentralized Distributed Generation (DDG)

8. The Committee note that Decentralized Distributed Generation (DDG) is the available option to provide electricity access to the electrified habitations. It is a cost effective, efficient, self-sufficient, technically less complicated and locally available resource consumption system to provide electricity to the areas where grid connectivity is either not feasible or not cost effective. The renewable

sources of energy such as bio-mass, bio-fuels, bio-gas, mini hydro solar etc., can be characterized as effective source of Decentralized Distributed Generation (DDG). Primarily, it is an off-grid distribution network for local requirements of limited periphery. So far 4604 new projects have been sanctioned under DDG with the project cost of 1470 crore. The target for electrification under the scheme is the electrification of 3586 un-electrified villages and 1,87,286 BPL household connections. As on 31st October, 2016, only 518 projects have been commissioned which is far from satisfactory. The Committee note that there is a huge gap between the target and the achievement, consequently, a large number of habitations in BPL households are yet to be electrified because the projects sanctioned under DDG Scheme are from component of the DDUGJY. This has also led to financial re-orientation as far as this scheme is concerned. The Committee find that poor planning and implementation of DDG result in the end waste of resources as they are of perishable nature. If this is done as expected, not only the resource utilization will be effective but also lead to illuminating of households and villages which are yet to see the electricity. The Committee, therefore, recommend that the projects under DDG should be sanctioned in a manner wherein targets are achievable. The time period for implementation of these projects should also be streamlined keeping in view the seasonal and cyclical availability of resources as well as the low gestation period in the commissioning of the projects.

9. The Committee note that the concept of innovative financing has been introduced to implement the DDG and it has been stated that REC through its field offices helps the states in documentation of the processes. Besides, the financing pattern of DDUGJY scheme provides incentive to the performing state utilities. On achievement of stipulated milestones, the subsidy component is increased to 75 per cent of the project cost. This is done on timely completion of the scheme as per the laid down milestones, reduction in AT&C losses as per finalized trajectory and up front release of admissible revenue subsidy by the State Government based on the metered consumption. The Committee find that standalone system has been introduced under DDG consisting of 200 Wp panel, battery, 5 LEDs, Fan, Mobile charger, 25 watt power socket etc., available to each

household. However, the condition of reduction in AT&C losses has been laid down for release of additional subsidy. It is incomprehensible why this condition has been made applicable and whether it is realistic and feasible in the standalone arrangements. To link release of additional subsidy with this kind of impractical condition amounts to non-granting of subsidy. Similarly, the upfront release of admissible revenue subsidy by the State Government based on improved consumption is also a mirage. The Committee, therefore, strongly recommend that linking DDG, with this kind of preposterous conditions will only discourage the scheme, thereby, denying the already deprived sections of society their rightful claim on electricity.

Remote Village Electrification Programme (RVEP)

10. The Committee note that the Government is implementing remote village electrification programme by providing financial support for lighting using renewable energy sources in those un-electrified remote census villages, hamlets of electrified census villages where grid connectivity is either not feasible or not cost effective and which are not covered under DDUGJY for grid electrification. This scheme is implemented through State Government Power Departments or the Forest Department. A subsidy up to 90 per cent of the cost of installation of various renewable energy devices are provided under the scheme. The Committee note that there has been good progress under the scheme as about 11335 villages and hamlets have been electrified against the target of 13059, up to August, 2016. Work is on in 637 villages, whereas, 1087 villages have been dropped from the sanctioned projects. The Committee understand the difficulties involved in the scheme of remote village electrification yet, they cannot be left unattended. Therefore, the Committee strongly recommend that the villages which are not covered under the DDUGJY and are to be electrified under some other schemes should also be given due attention and priority. Border and remote villages should not feel alienated for want of electricity and hence, a time-bound programme should be chalked out to cover all the villages for electrification under the various schemes of the Government.

Off-Grid/Decentralized Solar Photo Voltaic Programme

11. The Committee note that Off-Grid/Decentralized Solar Photo Voltaic Programme is supported for rural electrification in mini grid mode. Under the programme, various off-grid/grid connected and decentralized photo voltaic systems/applications up to a maximum capacity of 500 KWP per site are supported. It is implemented for rapid up scaling in an inclusive mode thereby, reducing the transaction cost and time. 30 per cent subsidy of benchmark cost for various solar devices is provided and funding under the scheme is done in project mode. Similarly, 40 per cent of the benchmark cost are also provided for small capacity power plants up 1300 WP. Loan from bank is mandatory to avail subsidy under the scheme. The Committee welcome these steps and emphasize that this scheme should be given due popularity and incentive so as to widen its scope in rural and inaccessible areas. This scheme has a potential to mitigate the hardships of people living in remote and inaccessible areas. Over one million households are already meeting their lighting energy needs through solar energy. Solar street lighting is another very useful application for public lighting purpose. Till now, over 4 lakh street lights have been installed throughout the country. The Committee are aware that to improve the standard of living and quality of life of those section of population which are deprived of access to electricity, solar photo voltaic mechanism can be helpful in mitigating their hardship. The Committee, therefore, recommend that solar photo voltaic system should be appropriately developed and remodeled into different devices so that it can become more useful to the people living in remote areas. Street lights, home lights and lantern can be suitably designed to sustain round the clock while reenergizing themselves during the day. The Committee further recommend that it should be made a public movement for the purpose of electricity access in the areas where grid connectivity is not possible.

12. The Committee note that the Government has taken up an ambitious programme for installation of 1 lakh solar water pumping system for irrigation and drinking water. The provision of 30 per cent Central Financial Assistance has been made under the programme. Ministry of Drinking Water and Sanitation has

also been associated for installing 15,330 pumps for providing community drinking water. In addition, 30 thousand solar pumps will also be installed through bank loan with 40 per cent Central Financial Assistance for irrigation purpose to individual farmers. The Committee while welcoming the move of the Government also congratulate them for this initiative in which the contribution from the beneficiary is only of 20 percent. 40 percent of the Central Financial Assistance and for rest of the 40 per cent of the cost, loan at normal rates are made available through banks. In this regard, the Committee would like to emphasize the fact that the cost of the solar pump should be realistic and implementable as the subsidy is based on the cost of water machine. The Committee would also like to draw the attention of the Government about the life and durability of these machines failing which the entire initiative will be negated. The Committee would, therefore, like to recommend that the system of installation of solar water pumps should be made transparent, time bound and efficient. It should also be ensured that the machines installed for the purpose are of high quality and maintenance free to the extent possible. This should be done with utmost care and with indigenous technology involving of the beneficiary.

13. The Committee note that initiatives regarding solar water pumping system for irrigation and drinking water are based as per the requirements of the most needy sections of the society. The Programme is at the nascent stage and need vigorous strengthening. For confidence building of the people into the programme proper technical and administrative measure should be taken so as to popularize it among them. Funding pattern for installing the machine including subsidy component is a well considered move and the Committee applauded the Government for this. However, there is no scope for complacency and we should strive for excellence in the working of the mission. The various components of the mission should be of high standard and competitive in cost. Adequate maintenance infrastructure should also be made available as backup arrangement so that the possible obstacles in the machines are well taken care of. To popularize the programme other measures can also be considered sincerely. The Committee, therefore, strongly recommend that a watch should

also be kept on the water output from these solar photo voltaic water pumping system. If necessary, the performance standard motor also be prescribed in this regard. We should concentrate our efforts to make this programme a success as this will largely reduce the dependence of farmer on the conventional sources of electricity. The Committee , therefore, recommend that this useful move be popularized among the masses and efforts should be made to cater to ever increasing demand of the system. The sustainability of the various components of the mission should also be ensured by introducing the quality checks at the appropriate levels.

14. The Committee note that Government has come out with a scheme Atal Jyoti Yojana which is a sub-scheme under off-grid and decentralized solar application to provide solar street lighting system in rural, semi urban and urban areas with inadequate coverage of grid power. The scheme also involves Members of Parliaments on the basis of their understanding of the needs and aspirations of the local people. The scheme is to be implemented in the States where household electrification is less than 50 per cent as per 2011 census. 75 per cent of the cost of the street light will be made through Budget and remaining 25 per cent can be arranged from MPLADS fund, panchayat funds, municipality or other urban local body's fund. The Committee find this scheme to be in sufficient and also sketchy. The Scheme aims to cover the urban, semi urban rural areas with inadequate coverage under grid power. This will lead to duplicity as there is no justification of inadequate power within the jurisdiction of grid network. The other condition of its implementation of less than 50 per cent household electrification is also not in consonance with the scheme. This is primarily a street lighting scheme and to implement it in areas where there is no household electricity will make it ineffective as people will tend to get electricity into their households from the network of this scheme. That may result in the mass distruction of the scheme and becoming non-productive. The Committee, therefore, recommend that the Attal Jyoti Yojana should be a compact scheme on the lines of other schemes under DDG. There should be wholesome electrification of household as well as streets under the scheme so as to avoid any kind of misuse of the scheme.

24 x 7 Power For All (PFA)

15. The Committee note that the Government has taken a joint initiative with respective State Governments for preparation of State specific documents for providing 24x7 power supply to all household, homes industrial and commercial consumers and adequate supply of power to agriculture consumers. Although, all the States have signed the document, yet, keeping in view the ground reality of the electricity sector a lot need to be done to ensure 24x7 power supply. This sector is marred with contradictions i.e. demand supply mismatch. At times, abundant availability of power, different and varied tariff, uncertainty regarding availability of network and slump/surge in the demand of electricity. These inconsistencies are the hard realities of the sector and they will remain here. The financial condition of the State DISCOMs or other distribution companies is also a serious issue which will impact the mission of 24x7 power supply. High AT&C losses for whatever reasons are also major obstacles. The Government has planned to harness 175 GW of renewable energy from various renewable energy sources by the year 2022. Decentralized renewable system for basic energy needs will also be promoted in the pursuit of the goal of the 24x7. The Committee note that the idea is a lofty proposition but marred with inherent contradictions and bottlenecks of the electricity sector. The Committee, therefore, recommend that all measures should be taken to address issues which are likely to hinder the goal of 24x7 power supply particularly, when the electricity is a concurrent subject and every State utility has its own priorities, specific to requirements of its people. Hence, a comprehensive policy reorientation may be taken into consideration to give some unanimous conclusion and consensus on the mission of 24x7 by all the stakeholders.

NEW DELHI
14 December, 2016
Agrahayana 23,1938 (Saka)

Dr. Virendra Kumar,
Chairperson,
Standing Committee on Energy

Annexure-I

State-wise (year-wise) amount disbursed by REC during X & XI Plan including loan & subsidy
(*vide Para No. 2.8)*

(Rs. in crore)

Sr. No.	Name of State	During 2004-05 & 2005-06	During 2006-07	During 2007-08	During 2008-09	During 2009-10	During 2010-11	During 2011-12	During 2012-13	During 2013-14	During 2014-15	During 2015-16	During 2016-17	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Andhra Pradesh	9.12	63.62	173.58	71.08	97.18	84.81	20.31	7.60	0.00	20.68		7.00	554.98
2	Arunachal Pradesh	2.25	0.00	179.84	92.70	225.27	165.54	40.01	88.50	4.93	60.33	30.98	23.40	913.75
3	Assam	1.80	39.21	64.99	508.28	499.76	698.42	545.27	55.75	20.79	127.17	11.95	16.44	2589.83
4	Bihar	384.70	469.57	747.25	696.50	706.28	571.58	289.72	21.06	938.55	215.54	198.66	430.44	5669.85
5	Chhattisgarh	16.94	36.18	50.93	94.71	333.55	163.67	120.37	43.65	43.45	32.66	82.42	0	1018.53
6	Gujarat	0.23	13.36	17.92	52.38	94.32	76.80	30.62	5.63	8.01	13.04	3.15	0	315.46
7	Haryana	0.73	12.34	24.65	37.10	60.68	21.27	20.97	0.00	-5.05	-16.41	0	0	156.28
8	Himachal Pradesh	0.18	7.48	0.00	79.28	122.46	59.90	21.25	0.00	0.00	0.00	19.39	0	309.94
9	J&K	0.00	19.59	29.81	181.16	363.92	67.32	75.56	57.27	38.67	0.00	0	0	833.3
10	Jharkhand	4.94	285.24	599.22	1065.08	752.36	161.89	116.53	80.63	0.00	10.53	0	0	3076.42
11	Karnataka	72.59	87.36	324.91	68.09	67.61	62.92	48.95	47.32	43.37	28.43	20.36	23.77	895.68
12	Kerala	15.00	5.13	0.00	0.83	10.59	31.89	0.00	55.93	23.69	17.14	0	17.92	178.12
13	Madhya Pradesh	2.02	104.66	157.26	184.80	416.48	288.27	430.99	180.43	129.42	165.77	125.78	24.53	2210.41
14	Maharashtra	0.40	10.02	16.60	134.63	205.64	162.09	55.00	11.48	0.00	0.00	43.27	0	639.13
15	Manipur	0.00	13.53	5.04	39.37	63.17	95.95	80.12	0.00	33.02	42.25	0	0	372.45
16	Meghal	0.00	0.00	19.93	12.20	129.38	86.86	105.05	32.80	20.14	0.00	0	0	406.36

	aya													
17	Mizoram	0.63	0.00	0.00	78.31	81.02	78.28	0.00	0.00	45.41	0.00	0	0	283.65
18	Nagaland	0.27	4.23	5.57	59.30	54.37	61.86	28.14	17.05	8.00	0.00	22.97	0	261.76
19	Orissa	3.50	62.30	177.04	991.65	998.60	605.73	390.35	84.09	2.52	15.68	36.58	0	3368.04
20	Punjab	3.00	0.00	0.00	56.90	0.00	0.00	0.00	0.00	0.00	0.00	0	0	59.9
21	Rajasthan	56.53	87.15	180.57	298.60	151.44	83.18	221.51	29.89	3.18	0.00	0	5.78	1117.83
22	Sikkim	0.00	0.00	0.00	43.63	44.91	43.62	40.73	0.00	18.13	0.00	0	0	191.02
23	Tamilnadu	0.00	0.00	100.77	16.73	119.30	39.12	41.40	5.05	6.42	0.00	30.61	0	359.4
24	Telangana	0.00	30.72	91.34	5.95	60.01	70.04	11.16	7.53	7.94	3.60	15.99	0	304.28
25	Tripura	1.08	0.00	0.72	24.28	52.30	33.96	52.38	11.01	0.00	0.00	0	0	175.73
26	Uttar Pradesh	812.61	1543.78	564.39	86.85	192.94	72.45	95.48	103.64	1183.60	332.33	691.6	70.34	5750.01
27	Uttrakhand	63.04	278.28	133.05	81.29	102.06	9.70	-0.07	18.55	0.00	0.00	0	0	685.9
28	West Bengal	115.42	204.76	81.11	623.35	582.91	505.10	168.01	7.68	57.22	26.74	47.96	36.74	2457
		1566.98	3378.51	3746.49	5685.03	6588.51	4402.22	3049.81	972.54	2631.41	1095.48	1381.76	656.40	35155.14

ANNEXURE-II

Details of Projects Sanctioned in XII Plan under RE component of DDUGJY (as on 30.09.2016)

(Vide Para No. 2.13)

S.No.	Name of State	No. of DPRs sanctioned	Coverage			Achievement			Sanctioned Cost (in Cr.)	Funds Released (including subsidy) Rs. in CRORE
			UE	IEV	BPL	UE	IEV	BPL		
1	Assam	16	1009	10259	541953	685	0	0	1621.07	454.612
2	Bihar	27	2927	21833	5400947	1209	266	13362	5220.65	1798.204
3	Chhattisgarh	4	0	3236	64033	4	0	0	285.60	158.4961
4	Jammu & Kashmir	3	45	352	26233	2	0	0	101.28	0
5	Jharkhand	17	308	17784	471971	62	0	0	1260.92	347.67
6	Karnataka	9	0	9205	130785	0	1736	57408	99.53	26.0842
7	Madhya Pradesh	34	422	25759	863166	145	10126	248948	1430.93	398.139
8	Manipur	6	205	1590	24362	50	0	0	204.73	57.9789
9	Mizoram	8	0	0	0	0	0	0	77.03	21.76
10	Nagaland	11	36	797	39314	1	0	0	92.30	27.6921
11	Orissa	31	3144	41022	1658147	1501	1445	21195	3550.47	842.4135
12	Rajasthan	28	0	25397	443757	199	6409	46615	1453.91	390.3397
13	Tripura	8	26	778	89604	13	232	19555	316.23	92.2841
14	Uttar Pradesh	64	886	68212	3233913	830	6501	131321	7282.81	2045.273
15	West Bengal	7	4	5628	248073	0	41554	1287759	609.60	167.8507
	Total	**273**	**9012**	**231852**	**13236258**	**4701**	**41554**	**1287759**	**23607.06**	**6828.798**

Annexure III

Sanctioned project including Household covered under Decentralised Distributed Generation

(Vide Para No. 3.9)

S.No	State	Implmenting Agency	Sanction in plan	Technology Adopted	No. of projects	No.of Districts	Capacity (KW)	UEVs covered	Villages/ Hamlets covered	No.of Households covered (Incl. BPL)	No. of BPL Households covered	Effective project cost (Rs. in lakhs)	No. of Projects commissioned	Subsidy released (Rs. in lakhs)
1	Andhra Pradesh	APEPDCL	XI	SPV	57	1	365	0	57	2225	2225	1660.58	57	1076.049
		APSPDCL	XII	SPV	11	1	143.5	0	11	1035	1035	469.44	0	
		APEPDCL	XII	SPV	194	2	894	0	194	5592	5592	4448.69	154	1092.483
		APEPDCL	DDUGJY	SPV	165	1	518	0	165	3048	3048	2209.39	0	
	Sub Total Andhra Pradesh				**427**		**1920.5**	**0**	**427**	**11900**	**11900**	**8788.1**	**211**	
2	Assam	APDCL	DDUGJY	SPV	521	14	8949	521	521	45520	21781	26670.84	0	920.061
	Sub Total Assam				**521**		**8949**	**521**	**521**	**45520**	**21781**	**26670.84**	**0**	
3	Arunachal Pradesh	APEDA	DDUGJY	STANDALONE	1176	17		1176	1176	16582	16582	15173	0	
	Sub Total Arunachal Pradesh				**1176**		**0**	**1176**	**1176**	**16582**	**16582**	**15173**	**0**	

4	Bihar	BSHPC	XI	41 projects are Hybrid of Biomass gasifier + SPV & 7 projects are only SPV based	48	2	1558	48	175	16138	10143	3784.64	0	985.428
	Sub Total Bihar				**48**		**1558**	**48**	**175**	**16138**	**10143**	**3784.64**	**0**	
5	Chhattisgarh	CREDA	XI	SPV	9	2	102	8	9	645	645	345	9	
		CREDA	XII	SPV	87	3	523	24	87	3923	3923	2431	80	
		CREDA	DDUGJY	SPV+SHLS	906	16	4723	544	544	53005	53005	27384.96	145	
	Sub Total Chhattisgarh				**1002**		**5348**	**576**	**640**	**57573**	**57573**	**30160.96**	**234**	**7229.32**
6	Jharkhand	DVC	XII	SPV	43	3	518	32	89	2367	1510	2090.91	0	
		JREDA	DDUGJY	SPV, SHLS and Biomass	422	8	7720	433	433	29805	25035	18902	0	
	Sub Total Jharkhand				**465**		**8238**	**465**	**522**	**32172**	**26545**	**20992.91**	**0**	
7	Karnataka	HESCOM (14), GESCOM (1) & CSEC (1)	XII	SPV	16	3	261.5	0	65	1019	970	880.54	0	
		CESC	XII	SPV	25	3	390	6	31	1716	1598	1962	4	476.766
		MESCOM	XII	SPV	42	4	225.5	0	98	1453	1453	868.08	0	
		CESCL	XII	Wind & Solar PV (Hybrid)	10	2	138.2	0	11	828	818	612	0	
		MESCOM, HESCOM	DDUGJY	SPV	32	3		33	33	950	950	475	0	
	Sub Total Karnataka				**125**		**1015.2**	**39**	**238**	**5966**	**5789**	**4797.62**	**4**	
8	Kerala	KSEB	XII	SPV	15	1	131.5	0	15	731	730	531.83	4	111.951

	Sub Total Kerala				**15**		**131.5**	**0**	**15**	**731**	**730**	**531.83**	**4**	
9	Madhya Pradesh	MPUVNL	XI	SPV	25	4	528	25	91	2859	2303	2717.02	23	
			DDUGJY	SPV	154	13	3549	154	242	16417	9603	7787.55	0	
	Sub Total Madhya Pradesh				**179**		**4077**	**179**	**333**	**19276**	**11906**	**10504.57**	**23**	**1057.29**
10	Meghalaya	MeECL	XII	SPV	3	1	154	3	3	751	248	389.4	0	
		MePDCL	DDUGJY	STANDALONE	209	7		209	209	7151	7151	3889	0	
	Sub Total Meghalaya				**212**		**154**	**212**	**212**	**7902**	**7399**	**4278.4**	**0**	
11	Odisha	OREDA	XII	SPV	7	1	65.5	6	7	268	43	197	0	
			DDUGJY	SPV	269	11	3480	269	272	11889	8821	9504.69	0	
	Sub Total Odisha				**276**		**3545.5**	**275**	**279**	**12157**	**8864**	**9701.69**	**0**	
12	Rajasthan	AVVNL	XII	SPV	10	2	140	10	10	503	370	428.11	0	
		AVVNL	XII	SPV	31	1	400.5	31	31	1313	1069	1412	0	
		JVVNL	XII	SPV	1	1	14.5	1	1	61	56	51	0	
	Sub Total Rajasthan				**42**		**555**	**42**	**42**	**1877**	**1495**	**1891.11**	**0**	
13	Telangana	TSNPDCL	XI	SPV	39	2	202	0	39	1275	1275	925.88	34	
	Sub Total Telangana				**39**	**2**	**202**	**0**	**39**	**1275**	**1275**	**925.88**	**34**	**389.15**
14	Uttar Pradesh	UPNEDA	XI	SPV	7	2	79	6	7	500	351	346	7	
		UPNEDA	XI	SPV	14	2	973	12	55	6491	3050	4692	0	
		UPNEDA	XI	SPV	41	1	588	20	41	3758	1420	2988	0	
	Sub Total Uttar Pradesh				**62**		**1640**	**38**	**103**	**10749**	**4821**	**8026**	**7**	1131.867
15	Uttarakhand	UREDA	XI	Small Hydro	2	2	300	2	10	460	293	506.26	1	275.49
		UPCL	DDUGJY	SPV + SHLS	13	1	102	13	13	633	190	330.5	0	
	Sub Total Uttarakhand				**15**		**402**	**15**	**23**	**1093**	**483**	**836.76**	**1**	
Total XI Plan					**242**		**4695**	**121**	**484**	**34351**	**21705**	**17965.38**	**131**	
Total XII Plan					**495**		**3999.7**	**113**	**653**	**21560**	**19415**	**16772**	**242**	
Total DDUGJY					**3867**		**29041**	**3352**	**3608**	**185000**	**146166**	**112326.9**	**145**	
Total XI, XII and DDUGJY					**4604**		**37735.7**	**3586**	**4745**	**240911**	**187286**	**147064.3**	**518**	**14745.855**

Annexure - IV

Implementing Agency of Solar Pump

(Vide Para No.5.9)

S. No.	State Name	State Nodal Agency Name	Address of the Agency
1.	Andhra Pradesh	New & Renewable Energy Development Corporation of Andhra Pradesh (NEDCAP) Ltd.	New & Renewable Energy Development Corporation of Andhra Pradesh (NEDCAP) Ltd. 5-8-207/2, Pisgah Complex Nampally, Hyderabad – 500 001
2.	Arunachal Pradesh	Arunachal Pradesh Energy Development Agency	Arunachal Pradesh Energy Development Agency Urja Bhawan Tadar Tang Marg, Post Box No. 141, Itanagar-791111
3.	Bihar	Bihar Renewable Energy Development Agency	Bihar Renewable Energy Development Agency, 3rd Floor, Sone Bhawan,Birchand Patel Marg, Patna – 800 001. Bihar
4.	Chhattisgarh	Chhattisgarh State Renewable Energy Development Agency (CREDA)	Chhattisgarh State Renewable Energy Development Agency (CREDA), V.I.P. Road (Airport Road),Near Energy Education Park, Raipur, Chhattisgarh -492001
5.	Gujarat	Gujarat Energy Development Agency (GEDA)	Gujarat Energy Development Agency (GEDA) 4th Floor, Block No. 11&12 ,Udyogbhavan, Sector – 11, Gandhinagar – 382 017
6.	Haryana	Haryana Renewal Energy Development Agency (HAREDA)	Haryana Renewal Energy Development Agency (HAREDA),Akshay Urja Bhwan, Institutional Plot No. 1,Sector 17,Panchkula -134109
7.	Jharkhand	Jharkhand Renewable Energy Development Agency	Jharkhand Renewable Energy Development Agency 3rd Floor, SLDC Building, Kusai, Doranda, Ranchi-834002 (Jharkhand)
8.	Karnataka	Karnataka Renewable Energy Development Agency Ltd.	Karnataka Renewable Energy Development Agency Ltd. No. 39, “Shanthigruha” Bharath Scouts & Guides Building, Place Road, Bangalore- 560 001
9.	Kerala	Agency for Non-Conventional Energy and Rural Technology (ANERT)	Agency for Non-Conventional Energy and Rural Technology (ANERT), Vikas Bhavan (P.O.), Thiruvananthapuram- 695 033 (Kerala)
10.	Madhya Pradesh	MP Urja Vikas Nigam Ltd.	MP Urja Vikas Nigam Ltd., Urja Bhawan, Link Road No.2 Shivaji Nagar, Bhopal –462016
11.	Maharashtra	Maharashtra Energy Development Agency (MEDA)	Maharashtra Energy Development Agency (MEDA), S.No. 191/A, Phase1, 2nd Floor,

			MHADA Commercial Complex Opp. Tridal Nagar, Yerawada, Pune – 411 006 Maharashtra
12.	Meghalaya	Meghalaya Non-conventional & Rural Energy Development Agency (MNREDA)	Meghalaya Non-conventional & Rural Energy Development Agency (MNREDA) Near BSF Camp, P.O. Mawpat Shillong – 793 001 Meghalaya
13.	Mizoram	Zoram Energy Development Agency (ZEDA)	Zoram Energy Development Agency (ZEDA), ZEDA Building, Above 132 KV Sb - Station, Zuangtui (P.O), Zemabawk, Aizawl, Mizoram – 796 017
14.	Orissa	Orissa Renewable Energy Development Agency	Orissa Renewable Energy Development Agency S-59, Mancheswar Industrial Estate Bhubaneswar – 751 010 Orissa
15.	Punjab	Punjab Energy Development Agency	Punjab Energy Development Agency Solar Passive Complex, Plot No. 1&2, Sector 33 –D, Chandigarh-160047
16.	Rajasthan	Rajasthan Renewable Energy Corporation Limited	Rajasthan Renewable Energy Corporation Limited,E-166, Yudhister Marg, 'C' Scheme, Jaipur – 302 005 Rajasthan
17.	Tamil Nadu	Tamil Nadu Energy Development Agency (TEDA)	Tamil Nadu Energy Development Agency(TEDA) 5th Floor, Door No. 68 College Road, EVK Sampath Building, Maaligai, Chennai – 600 006
18.	Telangana	Telangana New & Renewable Energy	Telangana New & Renewable Energy Development Corporation Ltd., 5-8-207/2, Pisgah Complex Nampally, Hyderabad – 500 001
19.	Uttar Pradesh	UP New and Renewable Energy Development Agency (UPNEDA)	UP New and Renewable Energy Development Agency (UPNEDA) Vibhuti Khand, Gomti Nagar Lucknow – 226 010

ANNEXURE -V

MINUTES OF THE THIRD SITIING OF THE STANDING COMMITTEE ON ENERGY (2016-17) HELD ON 13th OCTOBER, 2016 IN COMMITTEE ROOM 'D', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1400 Hrs. to 1525 hrs.

PRESENT

LOK SABHA

Dr. Virendera Kumar - Chairperson

1. Shri Sultan Ahmed
2. Shri Om Birla
3. Shri M. Chandrakasi
4. Shri Ashwini Kumar Chaubey
5. Dr. Arun Kumar
6. Smt. Pritam Gopinath Munde
7. Shri Ravindra Kumar Pandey
8. Shri M.B. Rajesh
9. Shri Vinayak Bhaurao Raut
10. Shri Conrad Kongkal Sangma
11. Shri Devendra Singh alias Bhole Singh
12. Shri Bhanu Pratap Singh Verma

RAJYA SABHA

13. Shti T.K.S. Elangovan
14. Shri Oscar Fernandes
15. Shri Prabhakar Kore
16. Shri Shamsher Singh Manhas
17. Shri Javed Ali Khan
18. Dr. Anil Kumar Sahani
19. Smt. Viplove Thakur

SECRETARIAT

1. Shri Vijayakrishnan - Additional Secretary
2. Shri Sukhi Chand Chaudhary - Joint Secretary
3. Shri N.K.Pandey - Director

Witnesses

MINISTRY OF NEW AND RENEWABLE ENERGY

1.	Shri Upendra Tripathy	Secretary
2.	Shri Inder Jit Singh	Additional Secretary
3.	Ms. Versha Joshi	Joint Secretary
4.	Shri J.B. Mohapatra	Joint Secretary & FA
5.	Shri Santosh D. Vaidya	Joint Secretary
6.	Ms. Sutapa Majumdar	Economic Advisor
7.	Shri Dilip Nigam	Scientist – G
8.	Shri V.K. Jain	Scientist – G
9.	Shri G.L. Meena	Scientist – G
10.	Shri B.K. Bhatt	Scientist – G
11.	Dr. A.K. Tripathy	Scientist – G
12.	Dr. Ashvini Kumar	MD (SECI)
13.	Shri K.S. Popli	CMD (IREDA)
14.	Dr. O.S. Sastry	DG (NISE)

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of New and Renewable Energy to the sitting of the Committee and made known to them the provisions of Directions 55(1) and 58 of the Directions by the Speaker. He then apprised that this sitting has been convened to have briefing on the subject 'Energy Access in India: Review of current status and role of Renewable Energy'. The Chairperson highlighted the importance of green energy to the country's economic development and well-being of the people. He then asked the Ministry to enlighten the Committee about the actual status of renewable energy generation in the country, its availability, affordability and accessibility.

3. After introducing themselves to the Committee, the representatives of the Ministry of New and Renewable Energy made power point presentation covering the various initiatives taken to track energy access in India viz. Deen Dayal Upadhayaya Gram Jyoti Yojana (DDUGJY), Decentralized Distributed Generation (DDG) projects,

Remote Village Electrification Programme, Off-Grid / Decentralized Solar PV Programme, 24 x 7 Power For All (PFA) etc.

4. In course of the iscussion, the Committee raised the following important points with the representatives of the MNRE: -

i) Electricity Access through Grid and Off-Grid Renewable Energy;

ii) Growth and targets of Renewable Energy in India;

iii) Status of Remote Village Electrification Programme: achievement vis-à-vis targets;

iv) Importance of Off Grid/Decentralized Solar PV Programme and related Issues;

v) Solar Pumping Programme for Irrigation and Drinking Water;

vi) Biomass Gasification and Biogas Programmes;

vii) Hybridisation of wind and solar energy;

viii) Requirement of Renewable Energy Act; and

ix) Coordination mechanism between Ministry of Power and Ministry of New and Renewable Energy in promotion and development of renewable energy projects.

5. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry responded to the same. The Committee directed the representatives of the Ministry to furnish written replies to the queries which could not be responded to by them.

6. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

ANNEXURE VI

MINUTES OF THE FIFTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2016-17) HELD ON 17th NOVEMBER, 2016 IN COMMITTEE ROOM 'C', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 0930 Hrs. to 1040 Hrs.

PRESENT

LOK SABHA

Dr. Virendra Kumar - Chairperson

2. Shri Om Birla
3. Dr. Arun Kumar
4. Shri Jagdambika Pal
5. Shri Ravindra Kumar Pandey
6. Shri Conrad Kongkal Sangma
7. Shri Devendra Singh alias Bhole Singh
8. Shri Malyadri Sriram
9. Shri Bhanu Pratap Singh Verma

RAJYA SABHA

10. Shri T.K.S. Elangovan
11. Shri Oscar Fernandes
12. Shri La. Ganesan
13. Shri Shamsher Singh Manhas
14. Dr. Anil Kumar Sahani

SECRETARIAT

1. Shri Sukhi Chand Chaudhary - Joint Secretary
2. Shri N.K.Pandey - Director
3. Smt. L.Nemjalhing Haokip - Under Secretary

Witnesses

MINISTRY OF POWER

1.	Shri B.P. Pandey	Spl. Secretary (CMD, REC-Addl. Charge)
2.	Shri Shalini Prasad	Addl. Secretary (P)
3.	Shri A.K. Verma	Joint Secretary
4.	Shri S.D. Dubey	Chariperson, (CEA)

5.	Shri T.K. Barai	Member (CEA)
6.	Shri Rajeev Sharma	CMD, PFC
7.	Shri S.K. Gupta	Director, PFC

MINISTRY OF NEW AND RENEWABLE ENERGY

8.	Ms. Sutapa Majumdar	Economic Advisor
9.	Shri Dilip Nigam	Scientist – G
10.	Shri Sohail Akhtar	Scientist – G
11.	Shri G.L. Meena	Scientist – G
12.	Shri Ramesh Kumar	GM (SECI)
13.	Shri K.S. Popli	CMD (IREDA)

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of Power and the Ministry of New and Renewable Energy to the sitting of the Committee and made known to them the provisions of Directions 55(1) and 58 of the Directions by the Speaker. He then apprised that this sitting has been convened to take evidence on the subject 'Energy Access in India: Review of current status and role of Renewable Energy'. The Chairperson highlighted some of the challenges like the geographical locations, physical conditions, inaccessibility of the targeted areas, the resource crunch and the involved high cost which makes the proposition of energy access to all an uphill task to reach to the desired areas within the ambit of energy access to all. Besides other programmes, the Chairperson asked the Ministry to emphasize upon the performance and review of Remote Village Electrification (RVE) Programme, which aims at electrification of remote and rural areas of the country.

3. After introducing themselves to the Committee, the representatives of the Ministry of Power made power point presentation on Energy Access in India covering Access to Households Electrification, Electrification of unelectrified villages on Mission Mode, Deen Dayal Upadhayay Gram Jyoti Yojana (DDUGJY). Steps towards 100% access to households, Challenges etc.

4. The Committee inter-alia discussed with the representatives of the Ministry of Power and MNRE, the following important points: -

i) Progress and status of Deen Dayal Upadhayay Gram Jyoti Yojana.

ii) Role and responsibility of the Panchayat under Deen Dayal Upadhayay Gram Jyoti Yojana.

iii) Long term plan targeting towards connecting the households to the grid.

iv) Achievement vi-a-vis target under Remote Village Electrification Programme.

v) 24x7 Power For All - ways and means

5. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry responded to the same. The Chairperson directed the representatives of the Ministry to furnish written replies to the queries which could not be responded to by them.

6. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

ANNEXURE VII

MINUTES OF THE SIXTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2016-17) HELD ON 24th NOVEMBER, 2016 IN COMMITTEE ROOM 'C', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1500 Hrs. to 1640 hrs.

PRESENT

LOK SABHA

Dr. Virendra Kumar - Chairperson

21. Shri M. Chandrakasi
22. Shri Ashwini Kumar Chaubey
23. Shri Harish Dwivedi
24. Shri Bhagat Singh Koshyari
25. Shri R.P. Marutharajaa
26. Shri Ravindra Kumar Pandey

RAJYA SABHA

27. Shri T.K.S. Elangovan
28. Shri La. Ganesan
29. Shri S. Muthukaruppan
30. Dr. Prabhakar Kore
31. Smt. Viplove Thakur

SECRETARIAT

1	Shri Sukhi Chand Chaudhary	-	Joint Secretary
2	Shri N.K.Pandey	-	Director
3	Smt. L.Nemjalhing Haokip	-	Under Secretary

Witnesses

MINISTRY OF POWER

Sl. No.	Name	
1.	Shri P.K. Pujari	Secretary
2.	Shri B.P. Pandey	Spl. Secretary (CMD, REC-Addl. Charge)
3.	Ms. Shalini Prasad	Addl. Secretary (P)
4.	Smt. Jyoti Arora	Joint Secretary
5.	A.K. Verma	Joint Secretary
6.	Shri S.D. Dubey	Chairperson
7.	Shri Rajeev Sharma	CMD, PFC Ltd.
8.	Shri S.K. Gupta	Director (Tech.), REC Ltd.

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of Power to the sitting of the Committee and made known to them the provisions of Directions 55(1) and 58 of the Directions by the Speaker. He then apprised that this sitting has been convened to take further evidence on the subject 'Energy Access in India: Review of current status and role of Renewable Energy'. The Chairperson pointed out that the flagship scheme of the Government Deen Dayal Upadhaya Gram Jyoti Yojana (DDUGJY) has the potential to fulfil the ambition of energy access to a larger extent and that the inaccessible areas left out of the ambit of DDUGJY can be provided electricity through localized sources of renewable energies, Decentralized Distributed Generation (DDG) and other innovative methods. He also suggested that the household electrification whether BPL or otherwise, need to be clearly defined and that there should be a proper coordination mechanism among the various agencies involved in the implementation of the scheme.

3. After introducing themselves to the Committee, the representatives of the Ministry of Power made power point presentation on Energy Access.

4. The Committee inter-alia discussed with the representatives of the Ministry of Power, the following important points: -

i) Road map regarding electrification for all unelectrified villages.

ii) Separation of agriculture and non-agriculture feeders.

iii) Roadmap to ensure 24x7 power supply

iv) Objectives under UDAY Scheme

v) Issues related with transmission and distribution networks

vi) Maintenance and monitoring system of installed panels

vii) Assessment of power requirement for various sector viz. Household, Agriculture and Industry.

viii) Achievement vis-a-vis target of 12th Five Year Plan.

5. The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry responded to the same. The Chairperson directed the representatives of the Ministry to furnish written replies to the queries which could not be responded to by them.

6. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

ANNEXURE VIII

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2016-17) HELD ON 09.12.2016 AT 0930 HOURS IN COMMITTEE ROOM NO 'D', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee sat from 0930 hours to 1000 hours.

PRESENT

Dr. Virendra Kumar - Chairperson

LOK SABHA

1. Shri Sultan Ahmed
2. Shri Bhagat Singh Koshyari
3. Shri Arun Kumar
4. Shri Ravindra Kumar Pandey
5. Shri Vinayak Bhaurao Raut
6. Shri Bhanu Pratap Singh Verma

RAJYA SABHA

7. Shri La Ganesan
8. Shri Javed Ali Khan
9. Dr. Pranbhakar Kore
10. Shri Shamsher Singh Manhas
11. Dr. Anil Kumar Sahani

SECRETARIAT

1. Shri Sukhi Chand Chaudhary - Joint Secretary
2. Smt. L. Nemjalhing Haokip - Under Secretary

2. At the outset, the Chairperson welcomed the Members and apprised them of the agenda for the sitting. Thereafter, the Committee took up for consideration the following draft Reports:-

i) 'Energy Access in India – Review of current Status and Role of Renewable Energy'.

ii) Action Taken Report on the recommendations contained in the Twentieth Report (16th Lok Sabha) on 'Power Generation from Municipal Solid Waste'

iii) Action Taken Report on the recommendations contained in the Twelfth Report (16th Lok Sabha) on 'Commercial Losses'

iv) Action Taken Report on the recommendations contained in the Fifteenth Report (16th Lok Sabha) on Demands for Grants of the Ministry of Power for the year 2016-17, clause by clause.

3. After detailed deliberations, the Committee adopted the aforementioned draft Reports without any changes. The Committee uthorized the Chairperson to finalize the Reports and present the same to Lok Sabha/ lay in Rajya Sabha in the current Session.

The Committee then adjourned.