

34

STANDING COMMITTEE ON ENERGY

(2022-23)

SEVENTEENTH LOK SABHA

MINISTRY OF NEW AND RENEWABLE ENERGY

**DEMANDS FOR GRANTS
(2023-24)**

THIRTY-FOURTH REPORT



**LOK SABHA SECRETARIAT
NEW DELHI**

March, 2023/Phalguna, 1944 (Saka)

THIRTY-FOURTH REPORT
STANDING COMMITTEE ON ENERGY
(2022-23)
(SEVENTEENTH LOK SABHA)

MINISTRY OF NEW AND RENEWABLE ENERGY
DEMANDS FOR GRANTS
(2023-24)

Presented to the Lok Sabha on 21st March, 2023

Laid in the Rajya Sabha on 21st March, 2023



LOK SABHA SECRETARIAT
NEW DELHI

March, 2023/Phalguna, 1944 (Saka)

COE NO. 363

Price: Rs.....

©2023 by Lok Sabha Secretariat

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

CONTENTS		
		Page No.
COMPOSITION OF THE COMMITTEE (2022-23)		5
LIST OF ABBREVIATIONS		6
INTRODUCTION		8
PART - I NARRATION ANALYSIS		
I	INTRODUCTORY	9
II	DEMANDS FOR GRANTS (2023-24) OF THE MINISTRY	11
III	REVIEW OF PAST PERFORMANCE OF THE MINISTRY	14
	(A) Budget Allocation and Utilization	
	(B) Physical Targets and Achievements	
IV	PROGRAMMES/SCHEMES OF THE MINISTRY: GRID INTERACTIVE AND OFF-GRID RENEWABLE POWER	17
	(A) Solar Energy	
	(i) Solar Roof-top Programme	
	(ii) Off-Grid/Decentralized Solar Programme	
	(iii) PM KUSUM Scheme	
	(iv) Domestic Solar Manufacturing	
	(B) Bio Energy Programme	
	(C) Wind Energy	
	(D) Small Hydro Power	
	(E) Green Energy Corridor	
	(F) National Green Hydrogen Mission	
V	RENEWABLE ENERGY FOR NORTH-EASTERN STATES AND SCs/STs	37
VI	RESEARCH AND DEVELOPMENT IN RENEWABLE ENERGY SECTOR	40
VII	PSUs/AUTONOMOUS BODIES UNDER THE MINISTRY OF NEW AND RENEWABLE ENERGY	43
	(A) Indian Renewable Energy Development Agency	
	(B) Solar Energy Corporation of India	
	(C) National Institute of Solar Energy	
	(D) National Institute of Wind Energy	
	(E) National Institute of Bio Energy	
PART-II RECOMMENDATIONS/OBSERVATIONS OF THE COMMITTEE		47
ANNEXURES		
I	Detailed statement showing the Budget Estimates for the year 2023-24 <i>vis-à-vis</i> Budget Estimates and Revised Estimates of 2022-23 and Actual Expenditure during 2021-22.	56
II	Minutes of Sitting of the Committee held on 24 th February, 2023.	58
III	Minutes of Sitting of the Committee held on 13 th March, 2023.	62

COMPOSITION OF THE STANDING COMMITTEE ON ENERGY (2022-23)

Shri Jagdambika Pal - Chairperson

2. Shri Gurjeet Singh Aujla
3. Shri Chandra Sekhar Bellana
4. Shri Pradeep Kumar Chaudhary*
5. Dr. A. Chellakumar
6. Shri Harish Dwivedi
7. Shri S. Gnanathiraviam
8. Shri Sanjay Haribhau Jadhav
9. Shri Kishan Kapoor
10. Shri Sunil Kumar Mondal
11. Shri Ashok Mahadeorao Nete
12. Shri Praveen Kumar Nishad
13. Shri Gyaneshwar Patil
14. Shri Jai Prakash
15. Shri Dipsinh Shankarsinh Rathod
16. Shri Uttam Kumar Nalamada Reddy
17. Shri Devendra Singh *alias* Bhole Singh
18. Shri Rajveer Singh (Raju Bhaiya)
19. Shri Shivkumar Chanabasappa Udasi
20. Shri Balashowry Vallabbhaneni
21. Shri P. Velusamy

RAJYA SABHA

22. Shri Gulam Ali#
23. Shri Rajendra Gehlot
24. Shri Narain Dass Gupta
25. Shri Javed Ali Khan
26. Shri Muzibulla Khan
27. Shri Maharaja Sanajaoba Leishemba
28. Shri Krishan Lal Panwar
29. Shri K.R.N. Rajeshkumar
30. Dr. Sudhanshu Trivedi
31. Shri K.T.S. Tulsi

SECRETARIAT

1. Dr. Ram Raj Rai Joint Secretary
2. Shri R.K. Suryanarayanan Director
3. Shri Kulmohan Singh Arora Additional Director
4. Ms. Deepika Committee Officer

* Nominated as Member of the Committee w.e.f. 4th November, 2022.

Nominated as Member of the Committee w.e.f. 16th December, 2022.

LIST OF ABBREVIATIONS	
AJAY	Atal Jyoti Yojana
ALMM	Approved List of Models and Manufacturers
BE	Budget Estimates
BHEL	Bharat Heavy Electricals Limited
CAPEX	Capital Expenditure
CASE	Commission for Additional Sources of Energy
CFA	Central Financial Assistance
CGTMSE	Credit Guarantee Funds Trust for Micro and Small Enterprises
Ckm	Circuit Kilometers
Committee	Standing Committee on Energy (2022-23)
CoP-26	26 th Session of the Conference of Parties held at Glasgow in 2021
CPSU/CPSE	Central Public Sector Undertaking/Enterprise
CRAR	Capital to Risk Weighted Assets Ratio
CSIR	Council of Scientific & Industrial Research
CST	Concentrated Solar Thermal
DBT	Direct Benefit Transfer
DCR	Domestic Content Requirement
DRE	Decentralized Renewable Energy
DISCOM	Distribution Companies
DNES	Department of Non-Conventional Energy Sources
EFC	Expenditure Finance Committee
FDI	Foreign Direct Investment
FiT	Feed in Tariff
FY	Financial Year
FLS	Feeder Level Solarization
GBI	Generation Based Incentive
GBS	Gross Budgetary Support
GCCA	Grants for Creation of Capital Assets
GEC	Green Energy Corridor
GW	Giga-watt
HP	Horse Power
IEBR	Internal and Extra-Budgetary Resource
IPO	Initial Public Offer
IPS	Individual Pump Solarization
IREDA	Indian Renewable Energy Development Agency
IREP	Integrated Rural Energy Programme
ISTS	Inter State Transmission System
KWh	Kilo Watt hour
LPG	Liquefied Natural Gas
MH	Major Head
Ministry	Ministry of New and Renewable Energy
MNRE	Ministry of New and Renewable Energy
MPLADS	Members of Parliament Local Area Development Scheme
MSW	Municipal Solid Waste
MVA	Mega Volt Amperes
MW	Megawatt
MWeq	Megawatt equivalent
NCPRE	National Centre of Photovoltaic Research and Education
NER	North-East Region

NIBE	National Institute of Bio Energy
NISE	National Institute of Solar Energy
NIWE	National Institute of Wind Energy
NNBOMP	New National Biogas and Organic Manure Programme
NPA	Non-Performing Assets
OMC	Oil Marketing Companies
OFS	Offer for Sale
PAT	Profit after tax
PBT	Profit before tax
PERC	Passivated Emitter and Rear Cell
PGCIL	Power Grid Corporation of India Limited
PLI	Productivity Linked Incentive
PM-KUSUM	Pradhan Mantri Kisan Urja SurakshaevamUtthaanMahabhiyan
PSL	Priority Sector Lending
RDD	Rural Development Departments
R&D	Research and Development
RE	Revised Estimates
RESCO	Renewable Energy Service Company
RoW	Right of Way
RTS	Roof-top Solar
SC	Scheduled Caste
SECI	Solar Energy Corporation of India
SHP	Small Hydro Power
SIGHT	Strategic Interventions for Green Hydrogen Transition
SNAs	State Nodal Agencies
SOP	Standard Operating Procedure
SPV	Solar Photo Voltaics
ST	Scheduled Tribe
STU	State Transmission Utility
TSP	Tribal Sub Plan
UTs	Union territories
VGF	Viability Gap Funding
WRST	World Renewable Spiritual Trust

INTRODUCTION

I, the Chairperson, Standing Committee on Energy, having been authorized by the Committee to present the Report on their behalf, present this Thirty-Fourth Report of the Committee on 'Demands for Grants (2023-24) of the Ministry of New and Renewable Energy'.

2. The Committee examined the Demands for Grants under Rule 331E(1)(a) of the Rules of Procedure and Conduct of Business in Lok Sabha.

3. The Committee took evidence of representatives of the Ministry of New and Renewable Energy on 24th February, 2023. The Committee wish to express their thanks to representatives of the Ministry for appearing before the Committee for evidence and furnishing the desired information in connection with the issues relating to the subject.

4. The Report was considered and adopted by the Committee at their sitting held on 13th March, 2023.

5. The Committee place on record their appreciation for the assistance rendered to them by the officers of the Lok Sabha Secretariat attached to the Committee.

6. For the facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in Part-II of the Report.

**New Delhi
March 13, 2023
Phalguna 22, 1944 (Saka)**

**Jagdambika Pal,
Chairperson,
Standing Committee on Energy**

PART - I
NARRATION ANALYSIS

CHAPTER - I
INTRODUCTORY

1.1 The Ministry of New and Renewable Energy (MNRE) is the nodal Ministry of the Government of India for all matters relating to renewable energy resources. Under the Allocation of Business Rules, the Ministry has been assigned the following specific subjects:

- Research and development of biogas and programmes relating to biogas units;
- Commission for Additional Sources of Energy (CASE);
- Solar Energy including Solar Photovoltaic (SPV) devices and their development, production and applications;
- All matters relating to small/mini/micro hydel projects of, and below, 25 MW capacity,
- Programmes relating to improved chulhas and research and development thereof;
- Indian Renewable Energy Development Agency;
- Research and development of other non-conventional/renewable sources of energy and programmes relating thereto;
- Tidal Energy;
- Integrated Rural Energy Programme (IREP);
- Geothermal Energy.

1.2 About the subjects allocated to the Ministry under the Allocation of Business Rules, the Ministry stated the following:

“In pursuance to the 24th Report of the Standing Committee on Energy, MNRE had constituted a Committee chaired by the then Additional Secretary, MNRE, to assess the adequacy of the provisions of the Allocation of Business Rules in light of the present scenario and future outlook of Renewable Energy. The Committee undertook an in-depth review of MNRE’s Allocation of Business. Specific challenges arising from the current provisions were also deliberated and the Committee has accordingly proposed amendments to relevant provisions of the Government of India (Allocation of Business), Rules, 1961.”

1.3 The Government set a target for installation of 175 GW of renewable energy capacity by 31st December 2022. This included 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro power. Further, as contribution of India to climate action, Hon'ble Prime Minister presented Panchamrit at CoP-26 at Glasgow in November, 2021 which included the following:

- India will increase its non-fossil energy capacity to 500 GW by 2030;
- India will meet 50 percent of its energy requirements from renewable energy by 2030;
- India will reduce the total projected carbon emissions by one billion tonnes from now onwards till 2030;
- By 2030, India will reduce the carbon intensity of its economy by less than 45 percent;
- By the year 2070, India will achieve the target of Net Zero.

1.4 Status regarding installation of renewable energy as on 31st January, 2023 and Tentative Non-Fossil Fuel Based Electricity Capacity-2030, as furnished by the Ministry are given below:

Sector	Installed capacity (GW)	Total Installed + Pipeline (GW)	Additional Capacity to be planned by 2030 (GW)	Cumulative Capacity by 2030 (GW)
Solar Power	63.89	147	123	270
Wind Power	41.98	56	61	117
Bio Energy	10.73	11	4	15
Small Hydro	4.94	5	0	5
Sub-Total	121.54	219	188	407
Large Hydro	46.85	59	13	72
Nuclear	6.78	21	0	21
Total	175.17	299	201	500

CHAPTER - II
DEMANDS FOR GRANTS (2023-24) OF THE MINISTRY

2.1 The Ministry of New and Renewable Energy presented Demand No. 71 to the Parliament for financial year 2023-24 on 9th February, 2023. The voted provisions made in the Revenue and the Capital Heads of the demand are as under:

(In Rs. Crore)			
	Revenue	Capital	Total
Charged	---	---	---
Voted	10210.35	11.65	10222.00

2.2 The Ministry informed the Committee that the Department of Expenditure has rationalized the programme heads of the Ministry for Demands for Grants (2022-23) and onwards as per its work allocation. The new heads are as follows:

- Solar Energy
- Bio Energy Programme
- Programme for Wind and other Renewable Energy
- Support Programmes
- National Green Hydrogen Mission
- Storage and Transmission

2.3 A statement showing the details of the Budget Estimates for the financial year 2023-24 *vis-à-vis* Budget Estimates and Revised Estimates of 2022-23 and actual expenditure during 2021-22 is given at **Annexure-I**.

2.4 Regarding the allocations sought for the year 2023-24 and the amount actually sanctioned by the Ministry of Finance, the Ministry furnished as under:

(In Rs. Crore)			
Sl. No.	Name of Umbrella /Scheme	Proposed BE 2023-24	Approved BE 2023-24
1	Solar Energy	7622.85	7452.31
2	Bio Energy Programme	381.85	381.85
3	Programme for Wind and other Renewable Energy	1245.00	1245.00

4	Support Program	256.65	226.65
5	Hydrogen Mission	297.00	297.00
6	Storage and Transmission	500.00	500.00
Total of Central Sector Schemes		10303.35	10102.81
7	Secretariat Economic Services	60.19	60.19
8	Autonomous Bodies (ABs)	54.00	54.00
9	Office Buildings	5.00	5.00
Total of Non-Scheme		119.19	119.19
Grand Total		10422.54	10222.00

2.5 When asked about the hike in Central Plan Outlay for the year 2023-24 as compared to last year, the Ministry stated that:

“During the year 2023-24, BE of Rs. 10222.00 Crores has been allocated to the Ministry, which is an increase of about 45% on the RE of Rs. 7033.00 Crores for the year 2022-23. Additional funds will be utilized for implementation of Solar Schemes, PM-KUSUM scheme, newly approved PLI phase-II and National Green Hydrogen Mission.”

2.6 On being questioned about the sufficiency of the budgetary allocation made for the year 2023-24 in order to achieve the physical targets, the Ministry stated as under:

“The funds allocated for the year 2023-24 will be sufficient to meet the requirements of the Ministry for the year 2023-24. Additional funds if any required will be sought at RE stage.”

2.7 The financial allocations & physical targets for various programmes/ schemes for the financial year 2023-24, as furnished by the Ministry, are as follows:

		B.E. 2023-24 (In Rs. Crore)	Target/Capacity likely to be commissioned during 2023-24
A.	NON-SCHEME COMPONENT		
I	Establishment Expenditure		
	Secretariat Economic Services	60.19	-NA-
	Office Buildings	5.00	-NA-
II	Other Central Expenditure		
	Autonomous Bodies/CPSEs	54.00	-NA-
	Total- Establishment Expenditure	119.19	-NA-
B.	SCHEME COMPONENT		
I	Solar Energy		
	Solar (Grid)	4970.00	14000 MW

	Solar (Off grid)	361.50	Nil
	KUSUM	1996.46	2.4 GW
	Other Renewable Energy Applications	0.00	-
	Interest Payment and Issuance Expenses on Bonds	124.35	-NA-
	Total- Solar Energy	7452.31	-
II	Bio Energy Programme		
	Bio-Power (Grid)	159.00	40 MW
	Bio-Power (Off Grid)	127.85	Briquette pellets manufacturing plants - 100 TPH Non bagasse cogeneration power plants - 25 MW Waste to Energy - 60 MW
	Biogas	95.00	46000 number of Biogas Plants
	Total- Bio-Energy Programme	381.85	-
III	Programme for Wind and other Renewable Energy		
	Wind Power (Grid)	1214.00	5393 MW
	Hydro Power (Grid)	30.00	100 MW
	Hydro Power (Off grid)	1.00	Nil
	Total- Programme for Wind and other RE	1245.00	-
IV	Support Programme		
	Monitoring & Evaluation	0.05	-NA-
	I&PA	6.00	-NA-
	HRD	47.00	7500 No. of Trainees
	International Relation	103.60	-NA-
	R&D	70.00	-NA-
	Total- Support Programme	226.65	-
V	Hydrogen Mission		
	National Green Hydrogen Mission	297.00	-NA-
	Total- Hydrogen Mission	297.00	-
VI	Storage and Transmission		
	Green Energy Corridor	500.00	9700 ckm of transmission lines and 22600 MVA of substations (Cumulative Target)
	Total- Storage and Transmission	500.00	-
	Grand Total	10222.00	-

CHAPTER - III
REVIEW OF PAST PERFORMANCE OF THE MINISTRY

(A) BUDGET ALLOCATION AND UTILIZATION

3.1 A statement showing year-wise allocation and actual expenditure of the Ministry including Gross Budgetary Support (GBS) and Internal and Extra Budgetary Resources (IEBR) is given below:

(In Rs. Crore)									
	2020-21			2021-22			2022-23		
	BE	RE	Actual Exp.	BE	RE	Actual Exp.	BE	RE	Actual Exp. (upto 31 st Jan 2023)
GBS	5753.00	3591.00	3096.73	5753.00	7681.80	6792.83	6900.68	7033.00	3897.09
IEBR	13726.74	10089.38	9505.56	13726.74	10089.38	9505.56	28154.66	25871.00	12537.64
Total	19479.74	13680.38	12602.29	19479.74	17771.18	16298.39	35055.34	32904.00	16434.73

3.2 When asked about the reasons for variations in BE/RE and actual expenditure during the last three years, the Ministry stated that:

"2020-21: During the year 2020-21, against an BE of Rs. 5753 crore and RE of Rs. 3591 crore, actual expenditure was Rs. 3096.73 crore which was 86.24 % of RE. The Shortfall was mainly due to COVID outbreak and also because the Department of Economic Affairs issued guidelines to restrict the monthly expenditure to 5% of the Budget Outlay during each month upto December, 2020.

2021-22: During the year 2021-22, against an RE of Rs. 7681.80 crore, an expenditure of Rs. 6792.83 crore was incurred which was 88.43 % of RE. Utilization of funds was low because of two consecutive waves of COVID and also Non-receipt of adequate proposals from N.E. states.

2022-23: As on 31.01.2023, expenditure of Rs. 3897.09 crores has been incurred against RE of Rs. 7033.00 crores for 2022-23. The expenditure is 55.41 % of RE. The utilization of funds has been low due to-

- Revised Procedure for flow of funds for the central sector scheme was implemented by Department of Expenditure, Ministry of Finance w.e.f. 1st April, 2022. The procedure involved categorization of schemes, nomination of Central Nodal Agencies and opening of Central Nodal Account in scheduled Commercial Banks. It took about 3 to 4 months in completion of necessary action for putting in place revised procedure for flow of fund.
- Non receipt of adequate number of proposals from N. E. States makes achievements of GBS target much difficult."

3.3 Quarter-wise utilization of budgetary allocations during the previous years, as submitted by the Ministry, is given below:

(In Rs. Crore)							
FY	BE	RE	Actual Exp.	Quarter			
				1 st	2 nd	3 rd	4 th
2019-20	5254.83	3891.74	3562.11	875.74	1861.40	304.29	520.68
2020-21	5753.00	3591.00	3096.73	854.90	855.62	692.59	693.62
2021-22	5753.00	7681.00	6792.83	418.02	1439.70	1212.33	3722.78
2022-23	6900.68	7033.00	3897.09 (as on 31.01.2023)	110.09	1786.50	1596.20	404.30 (as on 31.01.2023)

3.4 On being asked whether the quarterly expenditure during these years was as per the plan and norms, the Ministry stated that:

"Quarterly expenditure is broadly in line with the Ministry of Finance norms. A periodical monitoring mechanism is already in place to ensure that phasing of expenditure is as per norms prescribed by the Ministry of Finance."

3.5 In response to a question about the amount of budgetary allocation that was surrendered due to non-utilization during the last three years, the Ministry furnished the following:

(In Rs. Crore)			
Major Head	2019-20	2020-21	2021-22
3451- Secretariat Economic Services	3.79	2.061	9.96
2810- New and Renewable Energy	1222.05	2091.449	413.24
2552 - North Eastern Areas	172.00	342.24	432.20
4810- Capital Outlay on New and Renewable Energy	-	-	34.02

(B) PHYSICAL TARGETS AND ACHIEVEMENTS

3.6 In response to a query about the physical achievements *vis-à-vis* targets during the previous years, the Ministry furnished the following:

S. No	Programme/ System	2019-20		2020-21		2021-22		2022-23	
		Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach. (upto Dec. 2022)
GRID POWER (Capacities in MW)									
1	Wind Power	3000	2117.78	3000	1503.30	3260.80	1110.53	1750	1572.20
2	Small Hydro	100	90.00	100	103.65	120.00	63.75	100	86.75

3	Bio Mass	250	240.55	250	5.00	170.00	60.00	30	4.20
4	Waste to Power#	12	28.45	40	43.30	55.00	82.16	60	45.68
5	Solar Power*	8900	6510.06	9500	5628.78	16040	12760.51	16000	9305.97
OTHER RENEWABLE ENERGY SYSTEMS									
6	Family Type Biogas Plants (No. in lakh)	0.76	0.30	0.60	0.20	\$		22500	200

Includes Waste to Energy Offgrid/Distributed Component.

*Includes Solar Offgrid/Distributed Component.

\$ The programme was not implemented during 2021-22 as EFC had recommended the continuation of the National Bioenergy Programme, for the period FY2021-22 to FY 2025-26, only to meet the already committed liabilities.

CHAPTER - IV
PROGRAMMES/SCHEMES OF THE MINISTRY:
GRID INTERACTIVE AND OFF-GRID RENEWABLE POWER

4.1 When asked about the details of financial utilization vis-à-vis allocation during the previous years under Grid-interactive and Off-Grid Renewable Power, the Ministry furnished the following:

(In Rs. Crore)			
Grid Interactive Renewable Power			
Year	BE	RE	Expenditure (% of RE)
2019-20	4272.15	3089.64	2811.07 (90.98%)
2020-21	4350.00	2689.48	2468.10 (91.77%)
2021-22	4324.48	4121.96	3499.17 (84.89%)
Off-Grid Renewable Power			
2019-20	688	550.36	494.12 (89.78%)
2020-21	1184.20	557.93	322.61 (57.82%)
2021-22	1180.50	812.44	593.59 (73.06%)

(A) SOLAR ENERGY

4.2 As per the Ministry, the estimated solar power potential in the Country is 748.99 GW. Against the overall target of 100 GW, the installed capacity is 63.30 GW as on 31.12.2022.

4.3 The Ministry stated that the Government has allowed 100% FDI in renewable energy sector through automatic route and most of the investment in solar energy comes from private sector and some CPSUs like NTPC Ltd., NHPC Ltd., SJVN Ltd etc. Budgetary allocation and actual expenditure for Solar Energy during the previous years, as furnished by the Ministry are given below:

(in Rs. Crore)			
Year	BE	RE	Actual Expenditure
2017-18	2259.00	1003.12	1001.33
2018-19	2045.25	2157.24	1903.76
2019-20	2479.90	1789.49	1529.28
2020-21	3517.60	1776.24	991.59
2021-22	3603.43	3372.50	2481.77
2022-23 (upto 31.01.2023)	5081.45	4856.11	2709.70

4.4 When asked about the physical achievements *vis-à-vis* targets with respect to Solar Energy, the Ministry furnished as under:

Financial Year	Targets	Capacity added during the year (MW)	Cumulative Capacity (MW)
2018-19	11200	6529.20	28180.66
2019-20	8900	6447.13	34627.79
2020-21	9500	5457.54	40085.33
2021-22	16040	12760.51	53996.50
2022-23 (upto 31.01.2023)	16000	9897.31	63893.83

(A)(i) SOLAR ROOF-TOP PROGRAMME

4.5 On being asked about the progress made under solar roof-top programme against the overall target of 40 GW, the Ministry stated that:

“Under the ongoing phase II of the rooftop solar programme, an aggregate capacity of \approx 3.41 GW has been sanctioned to various distribution utilities out of which over 1.65 GW has been reported as installed. Overall, over 7.4 GW of Rooftop Solar projects have been reported as installed in the country (with or without CFA).”

4.6 When asked about the physical achievements *vis-à-vis* targets with respect to Solar Roof-top Programme, the Ministry furnished as under:

FY	Target: Net Capacity allocated to DISCOMs (MW)	Capacity installed (MW)	CFA released (In Rs. Crore)
2019-20	689.20	135	12.56
2020-21	1027.06	473	92.77
2021-22	1334.30	678	1187.56
2022-23 (upto 31.01.2023)	357.95	404	883.10

4.7 In response to a query about the reasons for slow progress of solar rooftop programme, the Ministry stated the following:

“Major issues in implementation of rooftop solar include:

- (i) Different regulations by State Regulators,
- (ii) Imposition of various charges on certain category of consumers willing to install RTS,
- (iii) No prescribed SoP by Regulators for processing of applications by DISCOMs,
- (iv) No penalty imposed by Regulators on DISCOMs for not following the regulations or delaying the application approval process, etc.”

4.8 Explaining about the main problem in implementation of Solar Roof-top Programme, the representative of the Ministry deposed during the evidence that:

“Problem is arising that C&I consumer at the DISCOM level is high paying consumer. They were not ready to let them go.”

4.9 About the National Portal developed for Solar Roof-tops, the Ministry furnished the following:

“To make the process simple, Ministry has now developed a National Portal wherein any residential consumer from any part of the country can apply for rooftop solar without waiting for respective DISCOMs to finalize tender. The consumer has the choice to select any vendor registered with DISCOMs and choose quality and efficiency of solar equipment. The rate of rooftop solar plant is to be decided mutually by vendor and the consumer. The subsidy is fixed. DISCOMs role will be limited to issuing of technical feasibility approval, installation of net-meter and inspection of the system. After installation and inspection of the system, subsidy is released directly in the bank account of the consumer. All the process starting from registration of application till the release of subsidy can be tracked online in the portal and for every step the consumer will get message. To protect the interest of consumers, the vendors have to register themselves with DISCOMs and the registration process for vendor has been made simple in which the vendor has to give a declaration in the prescribed format and submit nominal bank guarantee of Rs. 2.5 lakh.

There will be an agreement between the consumer and the vendor that have conditions like maintenance of the system by the vendor for at least 5 years. Draft agreement has been provided on the portal for benefit of consumers.

The National Portal has information for the consumers such as rooftop solar calculator, standards and specifications of a rooftop solar plant. List of registered vendor in their area, list of solar panel manufacturers (ALMM), related rules and regulations issued by various authorities, financing available from banks, information on installation and maintenance of rooftop solar plant, frequently asked questions, steps to be followed under Simplified Procedure, consumer grievance, contact details, etc. The National Portal has been developed as an e-market place where consumer, vendors, banks providing loans, etc. interact. It also acts as educative tool for consumers on rooftop solar.”

4.10 Progress made through the National Portal as on 1st February, 2023, as furnished by the Ministry is given below:

Application Received	38413 Applications (211 MW)
Applications approved by DISCOMs	14961 Applications (65.228 MW)
Solar Roof-tops Installed	1674 (7.56 MW)
CFA Released	635 worth 2.836 Crore (2.836 MW)

4.11 On being asked about rejection rate of applications received through National Portal, the Ministry furnished the following:

“As per status available on National Portal as on 27.02.2023, total number of applications received are 43171, of which 18437 applications have been approved by DISCOMs, 3031 applications have been rejected on technical ground by DISCOMs and approval is pending for 21703 applications. Considering the total of approved and rejected applications i.e. 21468 applications, the rejection rate is around 14%.”

(A)(ii) OFF-GRID/DECENTRALIZED SOLAR PROGRAMME

4.12 Given below are the physical achievements *vis-à-vis* targets with respect to solar off-grid applications as furnished by the Ministry:

S. No	Applications	Target 2019-20 Cumulative	Ach. 2019-20 Cumulative	Target 2020-21 Cumulative	Ach. 2020-21 Cumulative	Target 2021-22 Cumulative	Ach. 2021-22 Cumulative	Target 2022-23 Cumulative	Ach. 2022-23 Cumulative (Upto 31.01.2023)
1	SPV Systems (MW)	4.2 MW	0.2 MW	4.2 MW	2.05 MW	4.2 MW	2.5 MW	4.2 MW	2.5 MW
2	Solar Street Lights (Nos.)	1.75 lakh	0.03 lakh	1.75 lakh	0.69 lakh	1.75 lakh	1.46 lakh	1.75 lakh	1.46 lakh
3	Solar Home Lights	Financial support has been discontinued for solar home lights							
4	Study lamps (Nos.)	11.15 lakh	0.41 lakh	11.15 lakh	5.24 lakh	11.15 lakh	9.71 lakh	11.15 lakh	9.71 lakh

4.13 About the present status of solar off-grid applications, the Ministry stated as under:

“Off-grid and Decentralized Solar PV Applications Programme Phase III which supported the installation of solar street lights, off-grid solar power plants (in public service institutions) and distribution of solar study lamps to schooling children has been closed for new sanctions on 31.03.2021. Till the closure of the programme, 1.46 lakh

solar street lights and a cumulative SPV capacity of 2.49 MW have been installed and 9.71 lakh solar study lamps have been distributed.

Atal Jyoti Yojana Phase II programme supported the installation of solar street lights in which 75% fund contribution is from MNRE and the balance 25% fund is from MPLADS. However, Government decided to suspend the MPLAD Funds for two years i.e. 2020-21 and 2021-22 effective from 01.04.2020 due to the COVID-19 pandemic. Accordingly, this scheme was closed for new sanction on 31.03.2020 and the sanction of 1.50 lakh solar street lights was received from District Administration. Till the closure of the programme, 1.37 lakh solar street lights have been installed.”

4.14 About further continuation of the Solar off-grid Programme, the Ministry furnished the following:

“Solar Off-grid Programme has been proposed for continuation as an Off-grid Solar PV/Thermal and Decentralized Renewable Energy (DRE) livelihood applications programme which is under consideration with the Department of Expenditure (DoE), M/Finance with following interventions.

- Installation of solar streetlights
- Installation of standalone SPV power plants
- Distribution of solar study lamps to school-going students
- Installation of solar water heaters
- Deployment of CST (Concentrated Solar Thermal) applications
- Deployment of DRE livelihood applications.”

(A)(iii) PM KUSUM SCHEME

4.15 PM KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan) Scheme was launched by the Government in March, 2019 to provide financial support to the farmers for installation of standalone solar pumps and solarization of existing grid-connected agriculture pumps, and also to provide the farmers an opportunity to become solar entrepreneurs by installing solar power plants on their barren/fallow agriculture land. The Scheme aims to add a solar capacity of 30.80 GW with total central financial outlay of Rs. 34,422 crore including service charges of 2% on eligible CFA to implementing agencies. The timeline for implementation of the Scheme has been extended till 31.03.2026. The Scheme consists of the following three components:

Component A	10,000 MW of Grid Connected Solar Power Plants.
Component B	Installation of 20 lakh standalone Solar Powered Agriculture Pumps.
Component C	Solarisation of 15 Lakh Grid-connected Agriculture Pumps. Under Component-C, apart from solarizing individual agriculture pumps, solarisation of complete agriculture feeder is also allowed for which there is no mandatory requirement of state/farmer's share.

4.16 When asked about actual expenditure vis-à-vis allocation for PM-KUSUM scheme, the Ministry furnished the following:

(In Rs. Crore)			
Year	BE	RE	Actual Expenditure
FY 2019-20*	-	-	151.26
FY 2020-21	1000	210	156.43
FY 2021-22	997.30	690	406.04
FY 2022-23 (Upto 20.02.2023)	1715.90	1325	624.50

* Separate head was not available for PM-KUSUM. Funds released from Solar Off-grid head.

4.17 Given below are the physical achievements *vis-à-vis* targets with respect to PM-KUSUM Scheme as furnished by the Ministry:

S. No.	KUSUM Scheme	Target 2019-20 Cumulative	Ach. 2019-20 Cumulative	Target 2020-21 Cumulative	Ach. 2020-21 Cumulative	Target 2021-22 Cumulative	Ach. 2021-22 Cumulative	Target 2022-23 Cumulative	Ach. 2022-23 Cumulative (upto 31.01.2023)
1	Comp. A	1000 MW	0	5000 MW	0	5000 MW	36 MW	5000 MW	88.45 MW
2	Comp. B	1.71 lakh nos.	0	3.75 lakh nos.	30674 nos.	3.75 lakh nos.	93488 nos.	9.53 lakh nos.	180429 nos.
3	Comp. C	0.82 lakh nos.	0	5.2 lakh nos.	64 nos.	9.25 lakh nos.	1026 nos.	24 lakh nos.	1174 nos.

4.18 On being asked about the reasons for slow progress under KUSUM Scheme, the Ministry stated as under:

“Component-A: Due to imposition of BCD on imported panels and increase in GST from 5% to 12% and also because of supply chain constraint due to COVID-19 and Russia-Ukraine war, prices of the solar panels have increased leading to increase in project cost from around Rs. 3.5 Crore in 2019-20 to about Rs. 5 Crore per MW at present. Therefore, tariff announced by State Regulatory Commissions in FY 2019-20 and FY 2020-21 have become insufficient for the projects to be viable. Except HPERC other States Regulators are yet to revise the tariff for Component-A.

Difficulties faced by farmers in accessing affordable financing were a major hurdle in implementation of the allotted projects. Although the Credit Guarantee Funds Trust for Micro and Small Enterprises (CGTMSE) provides credit guarantee up to Rs. 2 Crore, the probable loan sizes are in range of Rs. 5 Crore. MNRE has requested the MSME Ministry for increasing the limit under CGTMSE to Rs. 5 Crore.

MNRE has been making consistent efforts to alleviate the financing issues. In response to these efforts, RBI has included all three components of PM-KUSUM under Priority Sector Lending (PSL) Guidelines. Ministry of Agriculture & Farmers Welfare has been requested by MNRE to include Component-A of PM-KUSUM under Agriculture Infrastructure Fund (AIF). However, the decision on the same is still awaited.

Component-B: Under Component-B, the state share of at least 30% is mandatory and with central subsidy of 30%, the balance has to be contributed by the beneficiary farmers. It was observed that there is low demand from the states under this component and Ministry has allocated the entire demand received from the states till 2022-23. Therefore, there is no demand supply gap. However, it has been observed that after allocation as per demand from the states, the unavailability/curtailment of State share has affected installation of solar pumps on ground. In the States of Karnataka, Tamil Nadu, Madhya Pradesh and Odisha the State contribution of at least 30% was not provided for the sanctioned capacity and hence the allotments given to states were reduced. There are some states including Bihar, West Bengal, Sikkim, etc., who are yet to raise demand for solar pumps. The state implementing agencies are responsible for implementation of the scheme on ground. So far as supply of solar pumps is concerned, the country has sufficient manufacturing capacity of solar pumps to achieve the PM-KUSUM Scheme targets, and this was confirmed during a meeting with solar pump manufacturers.

Component-C: Under Component-C, initially only Individual Pump Solarization (IPS) was introduced with over 82 thousand pumps sanctioned in FY 2019-20. However, except for the State of Rajasthan, no other State could finalize the tenders. Main issue under this component is getting 40% share from farmers, who are currently getting subsidised or free power and State share of 30%, which is already providing high subsidy to the agriculture sector. Further, Discoms have also not been able to provide attractive buy-back prices for surplus solar power to be fed by farmers to the grid. These issues, besides the pandemic and cash crunch with the farmers have led to slow progress under this component.

Considering the difficulties being faced by DISCOMs in getting farmers share, another variant as Feeder Level Solarisation (FLS) was

introduced on 04.12.2020 for solarisation of existing grid connected pumps. Here the state or farmer contribution is not required, 30% subsidy on the cost of solar power plant would be provided as CFA and these plants can be installed in RESCO. The State can also choose to invest under CAPEX mode. After announcement of feeder level solarisation, demand of solarization of over 50 lakh pumps have been received against the target of 15 lakh pumps through FLS for FY 2020-21. After inter-se transfer from Component-B and Individual Pump Solarization under Component-C, over 24 lakh were sanctioned by MNRE recently with completion timeline of 24 months for feeder level solarization under Component-C. These projects are at various stages of implementation in different States.”

4.19 Further explaining about the reasons for slow implementation of PM-KUSUM Scheme, the Secretary of the Ministry deposed as under:

“Under component A, there is no subsidy from the Government of India. It is purely based on commercial viability. At the time of planning, it was thought that there should be a component where the farmer invests taking into consideration the economic viability. Here, main problem has arisen that the cost of the modules has increased affecting the economic viability. The rate of interest on loan from banks is slightly high.....it is for rich farmers. A solar plant of 1 Megawatt capacity requires investment of around Rs. 4 to 4.5 crores and if someone is installing 2 MW Solar plant, he requires about Rs. 8 to 8.5 crores. Unlike for agricultural loans where banks provide upto 90% loan, that does not contain collateral, they are asking for 30% margin from farmers in this.”

(A)(iv) DOMESTIC SOLAR MANUFACTURING

4.20 Regarding present status of domestic solar manufacturing in the Country, the Secretary of the Ministry deposed as under:

“Currently, there is manufacturing capacity of about 22 GW of Solar PV module capacity and about 3 GW cell capacity in the Country. It is not of PLI as the PLI came later.”

4.21 Regarding Production Linked Incentive (PLI) Scheme for High Efficiency Solar PV Modules, the Ministry furnished the following:

“The Government of India is implementing the Production Linked Incentive (PLI) Scheme for National Programme on High Efficiency Solar PV Modules, for achieving manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV modules with outlay of Rs.

24,000 crore. Under this Scheme, the Government of India will give Production Linked Incentive (PLI) to the selected solar PV module manufacturers for five years post commissioning, on manufacture and sale of High Efficiency Solar PV modules. The Scheme is being implemented in two tranches as follows:

Tranche-I:

- Outlay of Rs. 4,500 crores.
- Letters of Award have been issued to three successful bidders on 11.11.2021/02.12.2021 for setting up 8,737 MW of fully integrated solar PV module manufacturing units, which involve setting up of manufacturing units for polysilicon, ingots-wafers, cells and modules.
- The aforesaid 8,737 MW manufacturing capacity is scheduled for commissioning within three years from the date of issuance of Letters of Award, i.e. by around end of year 2024.

Tranche-II:

- Outlay of Rs. 19,500 crores
- Tender for selection of solar PV manufacturers has been issued by Solar Energy Corporation of India Limited (SECI) on 18.11.2022; Last date of bid submission is 28.02.2023.
- It is expected that the letters of award will be issued to the successful bidders by around March-April of 2023.
- About 65 GW of fully/partially integrated solar PV module manufacturing is expected to be set up by around end of FY 2025-26.
- Time allowed for commissioning of solar PV manufacturing units under P+W+C+M, W+C+M and C+M categories will be 36 months, 24 months and 18 months respectively from the date of issuance of letter of award.”

(B) BIO ENERGY PROGRAMME

4.22 As per the Ministry, the cumulative Biomass and Bagasse Potential in the Country is 42.27 GW. The installed capacity is 10.21 GW as on 31.01.2023.

4.23 In response to a query about the budgetary allocation *vis-à-vis* utilization during the previous years under Bio Power Programme, the Ministry furnished the following:

(in Rs Crore)				
Year	BE	RE	Utilization (Biomass Power Projects)	Utilization (Waste to Energy)
	including both Biomass Power and Waste to Energy			
For Grid connected Projects				
2020-21	75	14.15	6.22	0

2021-22	120	56.85	3.45	50
2022-23 (as on 31.01.2023)	50	52.46	0	50
For Off Grid Projects				
2020-21	53	14.23	8.68	7.49
2021-22	70	36.48	11.02	24.75
2022-23 (as on 31.01.2023)	20	12.00	3.15	5.01

4.24 When asked about the reasons for non-utilization of funds in the previous years, the Ministry stated that:

"As per scheme guideline, eligible CFA is disbursed only after commissioning (COD) and successful performance of the plant for a period of 3 months. There have been instances of delay in commissioning, non-achievement of plant performance and delay in inspection resulting in lower utilization of fund."

4.25 On being asked about the physical achievements *vis-à-vis* targets under Bio Power Programme during the previous years, the Ministry furnished the following:

Both grid connected and off-grid		
Year	Target (MW)	Achievement (MW)
2018-19	250	429.70
2019-20	250	240.55
2020-21	250	5.00
2021-22	170	60
2022-23 (upto 31.01.2023)	30	4.2

4.26 Details regarding physical achievements *vis-à-vis* targets under Waste to Energy Programme, as furnished by the Ministry, are given below:

Both grid connected and off-grid		
(in MWeq)		
Year	Target	Achievement
2019-20	12	28.40
2020-21	40	43.30
2021-22	55	82.20
2022-23 (as on 31.01.2023)	60	46.29

4.27 When asked about the budgetary allocation and actual expenditure under New National Biogas and Organic Manure Programme (NNBOMP) during the previous years, the Ministry furnished the following:

(In Rs. Crore)			
FY	BE	RE	Actual Expenditure
2019-20	100	51	34.68
2020-21	60	46.50	31.75
2021-22	95	25	7.28
2022-23 (as on 31.01.2023)	30	20	5.41

4.28 In response to a question about the physical achievements *vis-à-vis* targets under NNBOMP during the previous years, the Ministry furnished as given below:

(in numbers)							
FY 2019-20		FY 2020-21		FY 2021-22		FY 2022-23 (Upto 31 st January, 2023)	
Physical Target	Achievement	Physical Target	Achievement	Physical Target	Achievement	Physical Target	Achievement
76000	29827	60000	26280	Nil	Nil	22500	644

4.29 On being asked about the reasons for continuous non-achievement of targets, the Ministry stated that:

- i) “The increase in costs of construction of biogas plant mainly due to increase in prices of cement, sand, bricks and steel and balance of equipment and accessories which are the major contributors in total cost of a biogas plant, have resulted in lower installations of household biogas plant. The upfront threshold limit of investment for biogas plants by the potential beneficiaries/households has thus been reduced drastically. The subsidy support also came down below 30% of the total cost of plant installation.
- ii) In order to see the impact of increased cost of installation and consider the same, the State Government Departments/SNAs etc. have been asked to have re-estimate of the unit costs of various size biogas plants as approved under the NNBOMP so as to assess the required level of support.
- iii) Though a biogas plant also helps in giving organic enriched bio-manure but the beneficiaries compare it with only cooking fuel. When it comes to cooking, LPG is an increasing challenge on account of its easy availability and very less upfront cost to be borne by the beneficiary as compared to a biogas plant and also comparatively more comfort in

operation & maintenance. The extensive campaigning for the domestic LPG by rich Oil Marketing Companies (OMCs) and their wider dealer networks is also a positive side for LPG, which is not there for Biogas Plants.

iv) Financial help in first registration of LPG connection in some States also distanced the potential biogas plant beneficiaries from opting biogas plants.

v) Some of the States, though have good potential but lacked in priority for the National Biogas Programme.

vi) Impact of Ujjwala Scheme.

vii) Back-ended subsidy/CFA support & problem faced in DBT mode of Scheme implementation.

viii) Most of the newly designated State Programme Implementing Agencies mainly the State Rural Development Departments could not initiate the implementation during 2019-20 and 2020-21 and Ministry has taken up the matter with the States/UTs.

ix) The Biogas scheme was not continued from 01.04.2021 to 01.11.2022.”

4.30 About the newly launched National Bio-Energy Programme, the Ministry stated the following:

“The National Bio Energy Programme has been approved for implementation upto FY 2025-26. It will be implemented in two phases with total budget outlay of Rs. 1715 crore. The Programme comprises of the following sub-scheme:

a) Programme on Energy from Urban, Industrial and Agricultural Wastes/Residues (referred as Waste to Energy Programme) – to support BioCNG, Large BioGas Projects and Biomass Gasifiers.

b) Scheme to support Manufacturing of Briquettes and Pallets and Promotion of Biomass (non-bagasse) based co-generation in Industries (referred as Biomass Programme) – to support non-bagasse based power plants and pallet/briquettes manufacturing plants.

c) Biogas Programme to support small and medium biogas plants.”

(C) WIND ENERGY

4.31 The Ministry stated that the estimated wind power potential in the Country is 695.50 GW at 120 meter and 302.25 GW at 100 meter above ground level. Against the overall target of 60 GW, the cumulative installed capacity of wind power is 41.93 GW as on 31.12.2022.

4.32 In response to a query about the fund utilization *vis-à-vis* allocation during the last three years, the Ministry furnished the following and stated that these are liabilities of the Wind GBI Scheme which was closed in 2017:

(In Rs. Crore)			
Year	BE	RE	Funds utilized
2020-21	1299.35	1059.35	1059.35
2021-22	1100	1100	1100
2022-23	1050	1413	806.393 (as on 31.01.2023, the remaining funds are likely to be utilized by March 2023)

4.33 About the budgetary allocations for wind energy sector, the Ministry furnished the following:

“It may be noted that there is no linkage between capacity commissioned and budgetary allocation. A budget of Rs 1214 crore has been allocated for 2023-24 under GBI scheme which will be utilized for clearing past liabilities. Funds are being utilized for meeting liabilities under Wind Generation Based Incentive Scheme which was operational till March, 2017. We have sufficient funds for the financial year in this regard. The new wind power projects are being set up by private developers based on techno-economic viability of the project. Government is not providing any direct central financial assistance for installing new wind power projects.”

4.34 Regarding physical targets and achievements in wind power sector during the previous years, the Ministry furnished the following:

Year	Target (MW)	Achievement (MW)
2019-20	3000	2117.78
2020-21	3000	1503.30
2021-22	3260.80	1110.53
2022-23	1750	1572.20 (till 31.12.2022)

4.35 When asked to explain the reasons for non-achievement of targets, the Ministry stated that:

“The capacity additions till 2017 (i.e. 32.27 GW) were through Feed in Tariff (FiT) mechanism. Subsequently, the tariff regime shifted from Feed-in-Tariff (FiT) to bidding route, which disrupted the installation of projects. Further, recently the projects have been delayed due to COVID-19 pandemic during the last two financial years (i.e. 2020-21 and 2021-22).”

4.36 Regarding domestic manufacturing in Wind Energy Sector, the representative of the Ministry deposed as under:

“We have 14 different manufacturers with 35 different models. All the top manufacturers in the world are present in India. That is the advantage the wind sector has. The other advantage is that this sector is already indigenised to the level of 80 per cent. The Ministry is also targeting that we handhold the industry to go further beyond 80 per cent but there are critical components which still require some time.”

(D) SMALL HYDRO POWER

4.37 The Ministry stated that the total identified potential of small hydro power capacity in the Country is 21.13 GW from 7133 identified sites. Against the overall target of 5 GW, installed small hydro power capacity is 4.93 GW as on 31.12.2022.

4.38 Details regarding utilization of funds *vis-à-vis* allocation during the previous years for small hydro power, as furnished by the Ministry, are given below:

Year	(In Rs. Crore)		
	BE	RE	Achievement
2019-20	190.90	94.14	77.28
2020-21	102.00	49.50	40.78
2021-22	92.00	66.00	28.01
2022-23 (till 31.12.2022)	52.00	21.00	6.68

4.39 On being asked about the physical targets and achievements with respect to small hydro power during the previous years, the Ministry furnished the following:

Year	Target (MW)	Achievement (MW)
2019-20	100	90.00
2020-21	100	103.64
2021-22	100	63.25
2022-23 (till 31.12.2022)	100	86.75

4.40 In reply to a question about reasons for non-utilization of allocated budget and shortfall in achievement of targets, the Ministry stated that:

“During 2019-20 and 2021-22, the achievement was short by 10 MW and 36.75 MW respectively. Reasons for the non-achievement of target are the difficult locations of SHP projects, short working season in hilly areas and natural calamities such as flash floods. Further, due to the nation-wide lockdown imposed for the outbreak of Covid-19, supply of material and manpower got affected which resulted in non-achievement of targets in the FY 2021-22.

There is no existing SHP scheme to provide CFA for new SHP projects since September, 2017. Only old liabilities, created for projects sanctioned in earlier SHP Schemes, are being cleared from the budget allocation.”

4.41 About efforts made by the Ministry for continuation of the SHP Scheme, the Ministry furnished the following:

- “• Since, the lapse of the last SHP Scheme on 31.03.2017 (extended upto 30.09.2017), this Ministry has made a continuous effort to formulate a new Scheme for the development of Small Hydro.
- A proposal for the continuation of SHP scheme for the period 2017-18 to 2019-20 was developed which was appraised and recommended by the EFC in its meeting held on 14th December 2017.
- Subsequently, a Note for the approval of CCEA was prepared and circulated for inter-ministerial consultation. Various suggestions were received and hence needed comments from the State Governments. The whole process of consultation took time and since the duration of the proposed scheme was to end in March 2020, a revised proposal for the period 2017-18 to 2024-25 was developed and circulated for inter-ministerial consultation on 24.02.2020.
- Comments received from various Ministries was incorporated in the EFC note but before the fresh EFC Memorandum could be submitted to Ministry of Finance, COVID pandemic struck and Ministry of Finance (Department of Expenditure) issued order not to submit any fresh proposals.
- A revised EFC Note was prepared which has been recommended by the EFC on 04.05.2022 and the draft CCEA Note is under preparation.”

(E) GREEN ENERGY CORRIDOR (GEC)

4.42 About the status of Green Energy Corridor, the Ministry stated as under:

“The Inter-State Transmission System (ISTS) Green Energy Corridor (GEC) Phase-I consisted of total length of 3201 ckm transmission lines and 17000 MVA substations. The project has been implemented by Ministry of Power through Power Grid Corporation of India Ltd and was completed in March 2020. The Intra-State Transmission System (InSTS) component of GEC has two phases:

InSTS GEC Phase-I: The phase-I is being implemented by the State Transmission Utilities (STUs) of 8 States (Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu). As of 31.12.2022, a total of 8759 circuit kilometres (ckm) of transmission lines have been constructed out of total target of 9767 ckm, and a total of 19868 Mega Volt-Amperes (MVA) substations have been charged out of total target of 22689 MVA. Upon requests of the state implementing agencies, the commissioning timeline for projects under the scheme has been extended till March 2023. All projects have been completed in Rajasthan, Tamil Nadu and Madhya Pradesh. The remaining five states (Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka and Maharashtra) have requested for further extension up to June 2023.

InSTS GEC Phase-II: The Phase-II is being implemented by the STUs of 7 States (Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh). The InSTS GEC-II scheme is for addition of 10,753 ckm of transmission lines and 27,546 MVA of substations. The STUs are currently in process of tendering the projects under the scheme. The scheme is scheduled to be completed by FY 2025-26.”

4.43 The financial allocations vis-à-vis utilization during the last three years for GEC, as furnished by the Ministry, are given below:

	(In Rs. Crore)			
Financial Year	2019-20	2020-21	2021-22	2022-23
Budget Estimates	500	300	300	300
Revised Estimated	52.61	160	150	250
Fund Disbursed	52.61	159.53	134.67	137.50 (upto 31.01.2023)

4.44 When asked about the reasons for non-utilization of allocated funds, the Ministry stated that:

“Under In STS GEC-I, the grant is disbursed in two installments: a) 70% as advance on award of work and b) remaining 30% after three

months of commissioning of project. The reasons for non-utilization of allocated funds vis-à-vis B.E. is as follows:

- i) Some projects were retendered due to low bid turnout, hence delay in award of work (Maharashtra, Himachal Pradesh and Madhya Pradesh).
- ii) Some projects had to be cancelled as the planned renewable energy generation projects did not come up (Rajasthan). Accordingly, alternate projects were planned and sanctioned. These projects are under implementation.
- iii) Some projects were cancelled due to no bid turnout (Maharashtra and Himachal Pradesh).
- iv) Some projects were cancelled by the State (Andhra Pradesh) due to their revisions.
- v) The States have submitted proposals for release of 30% balance grant for only few of the projects which have been commissioned during last two years. The proposals for release of 30% balance grant for most of the projects are yet to be received."

4.45 The physical targets and achievements under Intra-State portion of GEC Programme, as furnished by the Ministry, are as follows:

Financial Year	2019-20	2020-21	2021-22	2022-23 (till 31.12.2022)
Transmission lines target - cumulative (ckm)	6000	8000	9000	9767
Transmission lines constructed - cumulative (ckm)	6400	7965	8583	8759
Substations capacity target - cumulative (MVA)	6800	15000	20000	22689
Substations charged - cumulative (MVA)	6812	12638	18326	19868

4.46 In response to a query about the reasons for delay in completion of Green Energy Corridor, the Ministry stated as under:

"The InSTS GEC-I scheme has been delayed due to various reasons such as Right of Way (RoW) issues, delay in issuing tenders because of delay in substation land acquisition, delay in award of works due to low bid turnout in various projects which resulted in retendering several times, court cases, forest clearances, etc."

4.47 About budget announcement regarding green energy transmission line from Ladakh to Haryana, the Secretary of the Ministry deposed as under:

“This is the specific project for Ladakh where we are setting up renewable energy projects of 13 GW capacity. It will have 9 GW solar, and 4 GW wind, and 12 GW are battery storage. To evacuate that power, we are setting up a transmission system because in that area no transmission system is available. EFC has already recommended it. The cost of the project is Rs. 20773 crore, with a CFA of 40 per cent. This will be completed in five years. In this project, the transmission line will be set up from Ladakh to Kaithal in Haryana, and from Kaithal it will be distributed to other areas of the Country. This is a major project. Now, we will be going to the Cabinet for its approval.”

(F) NATIONAL GREEN HYDROGEN MISSION

4.48 For financial year 2023-24, an amount of Rs. 297 crore has been allocated for National Green Hydrogen Mission.

4.49 About the National Green Hydrogen Mission, the Ministry furnished as follows:

“The Cabinet has approved the National Green Hydrogen Mission, with an outlay of Rs. 19,744 crore, in its meeting held on 4th January 2023. The Mission aims to make India a Global Hub for production, utilization and export of Green Hydrogen and its derivatives. The Mission will help in India becoming energy independent. The key highlights of the Mission are as follows:

i) Demand Creation

- Mission will facilitate export opportunities through supportive policies and strategic partnerships, and support domestic demand creation through suitable targets and demand aggregation.

ii) Strategic Interventions for Green Hydrogen Transition (SIGHT)

- In the initial stage, two distinct financial incentive mechanisms proposed with an outlay of Rs. 17,490 crore up to 2029-30:
- Incentive for manufacturing of electrolyzers;
- Incentive for production of green hydrogen.

iii) Pilot Projects: for steel, mobility, shipping, decentralized energy applications, hydrogen production from biomass, hydrogen storage, etc.

iv) Green Hydrogen Hubs: The Mission will identify and develop regions capable of supporting large scale production and/or utilization of Hydrogen as Green Hydrogen Hubs.

v) Regulations and Standards: The Mission will coordinate the various efforts for regulations and standards development in line with the industry requirements for emerging technologies.

vi) Research and Development: A public-private partnership framework for R&D (Strategic Hydrogen Innovation Partnership – SHIP) will be facilitated under the Mission.

vii) Mission Outlay: The initial outlay for the Mission will be Rs. 19,744 crore, including an outlay of Rs. 17,490 crore for the SIGHT programme, Rs. 1,466 crore for pilot projects, Rs. 400 crore for R&D, and Rs. 388 crore towards other Mission components. MNRE will formulate schemes guidelines for implementation of the respective components.”

4.50 Expected deliverables under National Green Hydrogen Mission by 2030, as furnished by the Ministry are given below:

- “Atleast 5MMT GH₂ annual production;
- 60-100 GW Electrolyser Capacity;
- 125 GW Renewable Energy required for GH₂ Generation and Associated Transmission Network;
- Rs. 1 lakh crore import savings;
- Aversion of 50 MMT CO₂ Annual Emission;
- 6 Lakh Jobs;
- Rs. 8 Lakh crore investment.”

4.51 About the cost of Green Hydrogen, the Secretary of the Ministry deposed as under:

“The current cost of production of green hydrogen is about Rs. 280-300. One of the companies in India has said that they are trying to achieve two dollars for this. It is there in Jorhat, Assam. There is a small pilot which has been done. Under the Mission, we have provided for an incentive for green hydrogen production because we will fund a part of that cost for green hydrogen production.”

4.52 On being asked about the prospective buyers of Green Hydrogen at this high cost, the Secretary of the Ministry deposed as follows:

“One of the major objectives of this Mission, and our target, is that it is going to be export oriented largely. So, a majority of what we will produce is likely to be exported. But we also want domestic consumption because we feel that there has to be a domestic ecosystem.”

4.53 About the production capacity of Electrolysers, the Secretary of the Ministry deposed as under:

“Production capacity in India is very low at the moment. In fact, only one company has come up and second is planning to come up. Currently, they have the installed capacity of about 500 MW. We want 60-100 GW. So, we need to do a lot on the technology front. We need to get more electrolysers manufactured. One of the ways in which we are planning to do through the Mission is giving an incentive for electrolyser manufacturing. A part of Rs. 17,500 crore mentioned here is for electrolyser manufacturing and balance is for green hydrogen production. We want electrolyser production to start in the country.”

4.54 On being asked about the water requirement for National Green Hydrogen Mission, the representative of the Ministry deposed as under:

“It is estimated that about 10 Litres of water is required in order to make one Kilogram of Hydrogen.”

4.55 On being asked about the Research and Development under National Green Hydrogen Mission, the Secretary of the Ministry deposed as under:

“Under the Mission, we have an advisory group which will be chaired by the Principal Scientific Advisor to the Government. It will have experts, academicians and industry representatives. The advisory group will work on an R&D roadmap. Based on the recommendations of the advisory group, we will make schemes for getting that R&D done.”

CHAPTER - V
RENEWABLE ENERGY FOR NORTH-EASTERN STATES AND SCs/STs

5.1 When asked about the programmes being implemented by the Ministry in North-Eastern States, the Ministry stated that schemes like PM-KUSUM Scheme, Solar Park Scheme, Solar rooftop Programme and National Bioenergy Programme are open for implementation in the NE Region. Further, there is no Scheme to provide financial support to new Small Hydro Power projects.

5.2 In response to a query about financial expenditure *vis-à-vis* allocation during the previous years for the North-Eastern States, the Ministry furnished the following:

(in Rs Crore)			
Year	B.E.	R.E.	Expenditure
2018-19	504.53	504.53	122.41
2019-20	513.00	375.00	128.0850
2020-21	565.00	335.00	104.04
2021-22	565.00	499.00	65.18
2022-23	679.00	670.00	13 (upto February, 2023)

5.3 When asked about the physical achievements during the previous years under Solar Park Scheme in the North-Eastern States, the Ministry furnished the following:

Solar Park Scheme			
Sl. No.	State	Name of Solar Park	Capacity (in MW)
1	Arunachal Pradesh	Lohit Solar Park	20
2	Assam	Solar Park in Assam	100
3	Manipur	Bukpi Solar Park	20
4	Meghalaya	Suchen & Thamar Solar Park	20
5	Mizoram	Vankal Solar Park	20
6	Nagaland	Solar Park in Nagaland	23

However, due to various reasons like higher discovered tariff, land availability, slow pace of implementation etc., all the parks except one park in Mizoram were cancelled. The Vankal Solar Park in Mizoram (20 MW) is being developed by Power & Electricity Department, Government of Mizoram. The CFA of Rs. 186 Lakhs is already released for the development of this park and the remaining CFA of around 224 Lakhs will be released on completion of the park. The Park is likely to be completed by 31-03-2023.

5.4 Details regarding physical achievements under PM-KUSUM Scheme during the previous years in the North-Eastern States, as furnished by the Ministry are given below:

PM-KUSUM Scheme								
S No	State	Component-A (MW)		Component-B (Nos)		Component-C (Nos)		
		Sanctioned	Installed	Sanctioned	Installed	Sanctioned (IPS)	Sanctioned (FLS)	Installed
1	Arunachal Pradesh	2	0	200	0	0	0	0
2	Assam	10	0	5000	0	1000	0	0
3	Manipur	0	0	150	28	0	0	0
4	Meghalaya	5	0	535	35	0	10000	0
5	Mizoram	0	0	2700	0	0	0	0
6	Nagaland	5	0	165	0	0	0	0
7	Tripura	5	0	6021	1174	2600	0	0
Total		27	0	14771	1237	3600	10000	0

5.5 Details regarding physical achievements under Off-Grid Programme including AJAY during the previous years in the North-Eastern States, as furnished by the Ministry are given below:

Application	2019-20	2020-21	2021-22	2022-23 (30.06.2022)
Solar Street lights	3254	44438	52366	968
Solar Study Lamps	192062	436583	328576	0
Solar Power Plants	220	699	20	0

5.6 Details regarding physical achievements under Biogas Programme during the previous years in the North-Eastern States, as furnished by the Ministry are given below:

State/ Union Territories	2019-20		2020-21		2021-22		2022-23	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement (as on 31.01.2023)
Arunachal Pradesh (APEDA)	200	18	200	12	0	0	50	0
Assam (FDA)	5000	60	3400	3207	0	0	1200	0
Manipur	200	0	200	0	0	0	50	0
Meghalaya	500	497	300	0	0	0	50	0
Mizoram	400	18	200	0	0	0	50	0
Nagaland	300	0	200	0	0	0	50	0
Tripura	500	22	600	56	0	0	100	0
Sikkim	300	0	300	0	0	0	50	0

The targets for the year 2021-22 could not be issued, as the biogas scheme was not continued for allocation of new targets during the FY 2021-22.

5.7 Details regarding physical achievements under Small Hydro Programme during the previous years in the North-Eastern States, as furnished by the Ministry are given below:

2019-20	2020-21	2021-22	2022-23 (Upto 31st Jan 2023)
0.00	0.00	0.00	15.00

5.8 When the Committee wanted to know the reasons for low utilization of fund allocated for North-Eastern States, the Ministry stated that:

- “Reasons for under-utilisation of funds allocated for NER are as follows:
- Due to low solar insolation and wind power density, the output of such projects is less and cost is relatively high due to remoteness, etc. This results in higher tariff and it becomes unviable for DISCOMs to purchase. Even scheme with subsidy and VGF specially designed for these regions find few takers as it is cheaper for utilities to purchase cheaper power from other states than to produce in their own state.
 - Both wind & solar power projects are land intensive requiring large flat tracts of shadow free contiguous land with accessibility which is difficult to find in north eastern region.
 - Non-receipt of adequate number of proposals from state governments for setting up of grid connected solar & wind power projects in these regions make achievements of GBS targets much difficult.”

5.9 Given below are the details regarding financial expenditure *vis-à-vis* allocation under SC and ST Components, as furnished by the Ministry:

Financial Year	SC component			ST component		
	BE	RE	Actual Exp.	BE	RE	Actual Exp.
2018-19	217.00	217.00	122.00	217.00	217.00	188.18
2019-20	426.00	311.00	284.88	441.00	322.00	279.92
2020-21	469.00	278.00	206.21	486.00	288.00	204.99
2021-22	469.00	414.00	245.37	486.00	429.00	239.65
2022-23 (upto Jan 2023)	564.00	556.00	155.99	584.00	576.00	148.61

CHAPTER - VI
RESEARCH AND DEVELOPMENT IN RENEWABLE ENERGY SECTOR

6.1 The budgetary allocation and actual expenditure incurred on research, design and development in renewable energy sector, as furnished by the Ministry are given below:

(in Rs. Crore)			
Year	Budget Estimate	Revised Estimate	Expenditure
2019-20	60.00	15.00	15.00
2020-21	20.00	49.00	36.59
2021-22	75.00	27.00	27.00
2022-23	35.00	45.00	10.06
(upto 31 st January 2023)			

6.2 When the Committee wanted to know the reasons for low utilization of funds during the previous years, the Ministry stated that:

"R&D projects are generally with duration of three to four years and the associated efforts are continuous in nature. The Funds are released after compilation of various milestones achieved and proper evaluation of the ongoing projects. The scheme was under review and was continued on 9th December 2021 and no new project could be sanctioned during this period. This caused under-utilization of fund."

6.3 Further explaining about the low utilization of funds for research and development, the CMD, IREDA deposed as under:

"This year, there was a budget of Rs. 35 crores which has been revised to Rs. 45 crores at RE stage. So far an amount of Rs. 10.06 crores has been spent. Some R&D proposals are under approval stage. We have sufficient proposals available. Some decision is being taken thereon. It is expected that the whole amount would be spent this year."

6.4 In response to a query about the major programmes/research undertaken and major achievements during the last three years, the Ministry stated as under:

"Major programmes were supported in the area of Solar Photovoltaic, Solar Thermal, Hydrogen, Fuel cells and Wind-Solar hybrid systems under the R&D programme. The major achievements are given below:

- i) In Solar, BHEL has developed a high efficiency PERC solar cell with an efficiency of 22% on 6 in x 6 in wafer. A high efficiency crystalline silicon solar cell of 19.4% efficiency on 6 in x 6 inch and a cell efficiency of 26 % on small area silicon perovskite tandem was also achieved under the National Centre of Photovoltaic Research and Educations (NCPRE) project at IIT, Bombay.
- ii) Various Startups like SolarMarq LLP for making test equipment of Solar Modules & Voltrez Tech Pvt. Ltd for making ultra-safe Li ion batteries also developed under the National Centre of Photovoltaic Research and Educations (NCPRE) project at IIT, Bombay.
- iii) A Pilot Project for Hydrogen Production (80 Kg/day) and Mobility Demonstration (5 Buses) in Leh is initiated by NTPC Ltd. Under Green Hydrogen Mobility Projects.
- iv) In Bioenergy area, a Biomass Gasification through Plasma Pyrolysis Technology for Chemicals Production is under process by IIT Roorkee. Densification and co-firing of agro-waste for power generation through gasification is going on at SSS-NIBE Kapoorthala.
- v) Support for developing solar cells using other materials was provided to R&D/academic institutions. IIT Bombay has developed Perovskite solar cell with 22.8 % efficiency and in another phase in the area of Flexible Perovskite Solar Cells and Intermediate Module with an target of Laminated Roll to Roll devices with >18% efficiency with T80>10000 hrs. is under process.
- vi) Support for developing solar thermal system and component was provided for technology development and demonstration for utilizing solar energy for thermal and power generation applications. 1Mwe Solar Thermal Power Plant with 16 hours thermal storage has been set up at Mount Abu by World Renewable Spiritual Trust (WRST), Mumbai which is running successfully.
- vii) IISc Bangalore has developed a supercritical CO₂ Turbomachinery along with high efficiency receiver for solar thermal power plants which would be the next step for close loop CO₂ cycle waterless solar thermal power plant.
- viii) CSIR-Central Salt & Marine Chemicals Research Institute, Bhavnagar, Gujarat and NIT Agartala has developed a 5 Kg solar dryer installed at NIT-Agartala for drying of natural rubber sheets as demonstration unit which is useful in North East region for quicker rubber drying using solar energy.
- ix) A center of excellence at National Institute of Solar Energy (NISE) has developed and demonstrated Green Hydrogen production, storage and its application for transportation.”

6.5 On being asked about the Universities and Institutions with which the Ministry collaborated for R&D during last three years, the Ministry furnished the following:

“At present 17 number of Research and Development projects are under implementation for the last three years. The major research institutions/universities which collaborated in these projects include IIT Bombay, IIT Roorkee, IISc Bangalore, NISE, NIWE, NIBE, CSIR Labs like NPL, ARCI Chennai and PSUs like BHEL & NTPC.”

6.6 The thrust areas that have been identified for R&D support in the renewable energy sector during the year 2023-24, as furnished by the Ministry are given below:

“Support will be provided for development, demonstration, testing, standardization, and validation of technologies/systems/components with emphasis on application oriented R&D, improving efficiency, reliability and cost effectiveness for indigenous development and manufacture. Participation of industry will be encouraged.

- In solar thermal, the thrust areas include development of solar thermal technology for power generation and industrial process/heat, storage systems, hybridization, etc.
- In Solar Photovoltaic (SPV), thrust is on improving Si PV efficiency, reducing the cost, developing solar cells by using alternative materials, production of Si material from sand, improving modules quality and reliability, development of standard designs for support structure for SPV systems, materials and fabrication technology for solar cells and modules, inverters, power conditioning units, grid integration, etc. In addition, focus would be on storage solutions.
- The thrust areas in biogas include development of efficient and cost effective designs of biogas plants, standardization of multiple designs of biogas plants, standardization of biogas slurry based bio-fertilizer, bio-manure up-gradation, development of biogas purification systems, development of efficient biogas engine for power generation.
- In wind, the thrust areas include wind turbine system design, integration, off-shore technology and wind solar hybrid systems.
- In Small Hydropower (SHP), thrust areas include development of ultra-low head turbines (below 3m), generators, monitoring systems, pumped storage systems, etc.”

CHAPTER - VII
PSUs/AUTONOMOUS BODIES UNDER THE MINISTRY OF NEW AND RENEWABLE ENERGY

7.1 To support the Ministry, there are five institutions i.e. two Public Sector Undertakings - Indian Renewable Energy Development Agency (IREDA) and Solar Energy Corporation of India (SECI) and three autonomous bodies- National Institute of Solar Energy (NISE), National Institute of Wind Energy (NIWE) and National Institute of Bio Energy (NIBE).

7.2 Details regarding budgetary allocation for the year 2023-24 for PSUs/Institutions under MNRE, as furnished by the Ministry, are given below:

S. No.	Institution	Objective/Focus Areas	BE 2023-24 (In Rs Crore)
1	Indian Renewable Energy Development Agency (IREDA)	It is a Non-Banking Financial Institution. It provides term-loans for renewable energy projects	-
2	Solar Energy Corporation of India (SECI)	It is section 3 company under the Companies Act. It functions as the implementing and executing arm for the National Solar Mission.	-
3	National Institute of Solar Energy (NISE)	It serves as the technical focal point for solar energy research & development.	20.00
4	National institute of Wind Energy (NIWE)	It serves as the technical focal point for wind power research & development.	24.50
5	National Institute of Bio Energy (NIBE)	It focuses on research & development in Bio Energy	9.50

(A) INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY (IREDA)

7.3 The financial performance of IREDA during the previous years, as furnished by the Ministry, is as follows:

(In Rs. Crore)				
Parameters	2019-20	2020-21	2021-22	2022-23 (As on 31.12.2022)
Loan Sanctions	12,696.11	11,001.30	23,921.06	20,789.79

Loan Disbursements	8,785.31	8,828.35	16,070.82	10,348.12
Total Income	2,372.38	2,657.74	2,874.16	2,446.73
Profit Before Tax	241.11	569.52	833.84	850.87
Profit After Tax	214.55	346.41	633.53	611.01
NPA % (Gross)	10.08%	8.77%	5.21%	4.24%
NPA % (Net)	7.18%	5.61%	3.12%	2.03%
Loan Write off/Hair Cut	-	-	13.02	-
Net Worth	2,521.32	2,995.19	5,268.11	5,591.00
Loan Book	23,547.84	27,853.92	33,930.61	37,887.69
CRAR (%)	14.34%	17.12%	21.22%	20.95%
MOU Ratings	Fair	Excellent	Excellent	--

7.4 When asked about the credit plan of IREDA to utilize the capital infusion of Rs. 1500 crore, the Ministry stated as under:

a) Lend ₹12,000 crore (approx.) to the Renewable Energy Sector, thus facilitate the debt requirement for additional capacity of approx. 3,500 – 4,000 MW.

b) With the enhanced net-worth, IREDA was able to do additional renewable energy financing, thus contributing towards achieving capacity addition targets of the Government.

c) Capital-to-Risk Weighted Assets Ratio (CRAR) improved from 17.12% as on 31.03.2021 to 21.22% as on 31.03.2022 to facilitate its lending and borrowing operations.

d) Further, IREDA plans to come out with Initial Public Offer (IPO) to meet its further requirement of capital for the purpose of targets set in its 5-year Business Plan. DIPAM also proposes to do Offer for Sale (OFS) along with IPO.”

(B) SOLAR ENERGY CORPORATION OF INDIA (SECI)

7.5 In response to a question about the credit plan of SECI to utilize the capital infusion of Rs. 1000 crore, the Ministry stated as follows:

“The equity infusion in SECI is for:

a) Financing its own projects, the projects envisaged to be funded through equity infusion would be set up in a phased manner. About 3300 MW installed capacity of renewable energy projects is planned to be set up by SECI by FY 2025-26.

b) To strengthen the Net worth of SECI to mobilize additional resources at cheaper rates to meet the Payment obligations arising out of long term PPA signed. SECI is the PPA counter-party for the projects that are set up through tenders which requires SECI to have a strong balance sheet with sufficient net-worth to meet the payment obligations

arising out of long term PPA signed. A higher net-worth will lead to better credit rating, thereby improving credibility of SECI's PPAs for sectoral investors. Strong balance sheet will also enable SECI to make timely payments to developers in case of delays by Discoms, through internal resources or by raising short-term loans, thereby boosting investor confidence."

(C) NATIONAL INSTITUTE OF SOLAR ENERGY (NISE)

7.6 The Ministry furnished the following details regarding financial allocation vis-à-vis utilization by NISE during the previous years:

(In Rs. Crore)			
Financial Year	BE	RE	Expenditure
2019-20	15.00	13.00	16.47
2020-21	5.00	13.00	13.73
2021-22	19.50	15.95	13.78
2022-23	16.00	16.00	9.25 (as on 16.02.2023)

7.7 The Ministry stated that no significant non-utilization/over-utilization of funds has been made by NISE and during FY 2019-20 an amount of Rs 4.66 crore was available as carry forward.

(D) NATIONAL INSTITUTE OF WIND ENERGY (NIWE)

7.8 On being asked about financial allocation vis-à-vis utilization by NIWE during the previous years, the Ministry furnished the following:

(In Rs. Crore)			
Year	BE	RE	Funds utilized
2020-21	1.50	13.50	13.50
2021-22	20.84	20.00	20.00
2022-23	22.00	22.00	14.18 (as on 31.01.2023. The remaining funds are likely to utilized by March 2023)

(E) NATIONAL INSTITUTE OF BIO ENERGY (NIBE)

7.9 Details regarding financial allocation vis-à-vis utilization by NIBE during the previous years, as furnished by the Ministry are as follows:

Year	BE	RE	Utilization	Remarks
	(In Rs. Crore)			
2019-20	3.00	0.70	0.66	Rs. 4.00 lakhs in GIA capital could not be utilized as the same was released at the fag end of the year. However, the actual expenditure was Rs 169.14 lakhs under General and Salary Head. Thus, the excess amount of Rs 103.14 was utilized over and above the grants. The Bank interest was Rs 1.50 lakhs and the excess expenditure of Rs 101.64 lakhs was adjusted from the interest of Corpus Fund (which was Rs 185.47 lakhs during FY 2018-19) after the approval of Governing Council.
2020-21	1.50	4.85	4.70	The actual expenditure was Rs 473.06 lakhs. No amount was carried forward grant of previous year. The balance excess of Rs 34.83 lakhs, including Rs 34.22 lakhs as interest, was surrendered to the Govt.
2021-22	8.33	4.96	4.96	The actual expenditure was Rs 547.14 lakhs. No amount was Carried forward grant of previous year. The excess funds were utilized from internal sources. The interest of Rs 34.46 lakhs was surrendered to the Govt.
2022-23	7.00	7.00	3.20 (as on 31.01.2023)	The actual expenditure Rs 573.83 lakhs. The excess funds were utilized from internal sources.

PART - II
OBSERVATIONS/RECOMMENDATIONS OF THE COMMITTEE

WORK ALLOCATION OF THE MINISTRY

1. The Committee note that under Government of India (Allocation of Business) Rules, 1961, the Ministry of New and Renewable Energy has been allocated subjects like Biogas, Commission for Additional Sources of Energy (CASE), Solar Energy, Small Hydro, Programme relating to improved Chulhas, Integrated Rural Energy Programme (IREP), Tidal Energy, Geothermal Energy, etc. The Committee observe that there is no mention of Wind Energy, Biomass Power, Waste to Energy, Green Hydrogen, Solar Energy Corporation of India Limited, National Institute of Wind Energy, National Institute of Solar Energy, National Institute of Bio Energy, etc. in the subjects allocated to the Ministry. Further, the subjects like Commission for Additional Sources of Energy, Integrated Rural Energy Programme, etc. are no longer applicable. Moreover, Large Hydro Power which has been categorized as Renewable Energy by the Government since 2019, is still under the jurisdiction of the Ministry of Power. Thus, there is a need to incorporate the emerging areas/subjects in the mandate of the Ministry to make it more relevant and contemporary.

The Ministry has furnished that there is no linkage between renewable capacity commissioned and budgetary allocation as most of the investment in solar energy comes from private sector and some CPSUs like NTPC Ltd., NHPC Ltd., SJVN Ltd., etc. Currently, the Ministry does not have any scheme/programme for Wind Energy, Small Hydro Power and Off-Grid & Decentralized Renewable Energy and allocated funds under these heads are utilized for clearing past liabilities only. The Committee expect the Ministry to play a more dynamic and proactive role for holistic development of the Renewable Energy Sector in

tandem with other concerned Ministries/Departments/Organizations instead of being a mere fund disbursement agency.

BUDGET ALLOCATION AND UTILIZATION

2. The Committee note that the Ministry had projected the budgetary requirement of Rs. 10422.54 crore for the financial year 2023-24 and Rs. 10222 crore has actually been allocated with an increase of about 45% against Revised Estimates of the last year. The Committee observe that about 72% budget of the Ministry is allocated for only two components i.e. Solar Power (Grid and Off-Grid) and KUSUM Scheme. About 11% of the budget has been allocated for Bio-Energy Programme, National Green Hydrogen Mission and Green Energy Corridor. About 14% of the budget has been allocated for interest payment and clearing past liabilities related to wind and small hydro projects. The remaining about 3% of the Budget has been allocated for Establishment Expenditure, Autonomous Bodies and Support Programme including Research and Development. Although for 2023-24, the Ministry has been allocated more or less what it demanded with a negligible cut of only about 2% which is highest ever budgetary allocation for the Ministry till date. Since the Budgetary Estimates of the Ministry for 2023-24 has been considerably enhanced as compared to the previous years, the Committee recommend that the Ministry should increase its fund absorption capacity and focus on exhaustive utilization of the budgetary allocation.

PHYSICAL TARGETS AND ACHIEVEMENTS

3. The Committee note that a total renewable energy capacity of 120.90 GW has been installed in the Country as on 31st December, 2022 which is about 69% of the overall target of 175 GW. Keeping in view the fact that renewable energy installed capacity has increased by more

than 236% since 2014; this is indeed a commendable achievement. However, it should also be mentioned that whatever shortfall has occurred in achievement of the target that is because of low installation of Solar Roof-tops and Wind Energy Projects. Keeping in view India's commitment to increase our non-fossil fuel based energy capacity to 500 GW by the year 2030, the Committee expect the Ministry to ramp up its pace for timely achievement of targets. The Ministry should also monitor implementation of the projects and ensure adherence to prescribed timeline for their commissioning so that renewable energy projects do not get unduly delayed.

SOLAR ROOF-TOP PROGRAMME

4. The Committee note that against the overall target of 40 GW, only 7.40 GW of rooftop solar projects have been installed in the Country. This Committee have been flagging the issues responsible for deficient performance under Solar Roof-top Programme like non-availability of information at the grass root level, lack of awareness about this scheme amongst the masses, apathy of Discoms, time consuming and complicated procedures for setting it up, delays in disbursement of subsidy, inconsistent policy framework at the State level, absence of non-recourse financing, etc. The Ministry has submitted before this Committee that in order to make the process simple, a National Portal has been developed wherein any residential consumer from any part of the Country can apply for installation of Solar Roof-top and all the processes starting from registration of application till the release of subsidy can be tracked online. The Committee observe that as on 27.02.2023, 43171 number of applications are received on National Portal, of which 18437 applications have been approved by DISCOMs, 3031 applications have been rejected on technical grounds and approval is pending for 21703 applications. The Committee feel that even with the

National Portal, Discoms are still the focal point for this programme and their role can not be wished away as the subsidy is released only after technical feasibility approval, installation of net-meter and inspection of the system by the Discoms. The Committee, therefore recommend that:

- i) A strict timeline should be imposed for approvals/rejection of applications, installation of net-meter, inspection of the system, etc. by the Discoms. Reasons should mandatorily be provided by the Discoms in case of rejection of Application on the National Portal.**
- ii) Discoms may be incentivized so that their apprehensions regarding losing their high paying consumers because of installation of Solar Roof-tops are addressed and they positively participate in the Programme.**

PM-KUSUM SCHEME

5. The Committee note that PM-KUSUM Scheme was launched in March, 2019 to provide financial support to the farmers for installation of standalone solar pumps, solarization of existing grid-connected agriculture pumps and also to provide the farmers an opportunity to become solar entrepreneurs by installing solar power plants on their barren/fallow agriculture land. The Committee observe that targets under different components of the Scheme could not be achieved. The Ministry has stated that the reasons for slow progress under the scheme are increase in prices of solar panels due to imposition of Basic Custom Duty (BCD) and increase in Goods and Services Tax (GST) from 5% to 12%; low demand from the States, non-availability of farmers' share of funds, etc. It has also been furnished that under Component-A, for a solar plant of 1 MW, investment of Rs. 4-4.5 crore is required as there is no subsidy and these projects are purely based on commercial viability.

Since the timeline for implementation of the Scheme has been extended till 31.03.2026, the Committee recommend that:

- i) In order to achieve the target under Component-A, the Ministry needs to make some positive interventions in the form of subsidy, etc.**
- ii) The Ministry should coordinate and hold consultations with the State Governments in order to make them prioritize the Scheme in the interest of the farmers particularly small and marginal farmers.**
- iii) It should also be ensured that there is no demand-supply gap in making available the required number of solar pumps for the farmers.**

SMALL HYDRO POWER

6. The Committee note that small hydro power programme was discontinued *w.e.f.* 31st March, 2017 and since then, the budget allocations have been used to clear old liabilities only. The Ministry has submitted before the Committee that it has been trying to come up with a new programme for small hydro power since 2017 but the same could not materialize for one or the other reasons. The Committee have been apprised that Note for the Cabinet Committee on Economic Affairs (CCEA) regarding Small Hydro Programme is under preparation. The Committee, therefore recommend that the Ministry should critically review its performance under the previous small hydro power programme and ensure that the factors which hindered the implementation of the programme are properly addressed in the new scheme.

GREEN ENERGY CORRIDOR (GEC)

7. The Committee note that the Intra-State GEC project was started in 2015 with total target of 9767 ckm transmission lines and 22689 MVA sub-stations. Phase-I of Intra-State GEC which is being implemented by the State Transmission Utilities (STUs) of 8 States has been delayed and given multiple extensions. The Committee observe that a total of 8759 ckm of transmission lines have been constructed and a total of 19868 MVA substations have been charged as on 31st December, 2022. The Ministry has submitted that all the projects have been completed in Rajasthan, Tamil Nadu and Madhya Pradesh and the remaining five states *viz.* Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka and Maharashtra have requested for further extension up to June 2023. Since 8 years have lapsed since the start of the Project, the Committee hope that this will be the last extension and this Project will finally be completed by June, 2023. It has also been submitted that Phase-II of Intra-State GEC is being implemented by State Transmission Utilities of 7 States (Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh) for addition of 10753 ckm of transmission lines and 27546 MVA of substations and it is scheduled to be completed by FY 2025-26. In order to ensure that Phase-II of Intra-State GEC does not get delayed like the Phase-I, the Committee recommend that the Ministry should take into account the reasons for delayed implementation of Phase-I and proactively persuade the concerned States from the start in order to ensure timely completion of Phase-II of Intra-State Green Energy Corridor.

NATIONAL GREEN HYDROGEN MISSION

8. The Committee note the National Green Hydrogen Mission has been approved with an outlay of Rs. 19744 crore and an amount of Rs. 297 crore has been allocated for this Mission for financial year 2023-24.

The Mission aims to make India a global hub for production, utilization and export of Green Hydrogen and its derivatives. It will help India in becoming energy independent and in decarbonisation of major sectors of the economy thereby eventually facilitating the Country to meet the target of Net-Zero by 2070. The Committee appreciate the fact that this Mission is expected to help bring in over Rs. 8 lakh crore in investments, import savings of Rs. 1 lakh crore, creation of 6 lakh jobs, annual aversion of 50 MMT CO₂ emission, etc. The Committee have been apprised that current cost of production of green hydrogen is quite high, so the challenge is that the proposed green hydrogen hubs should be located at a place which is renewable energy rich, water resource rich, close to demand centres in order for them to be economically viable. While applauding the Government for taking a plunge into an area which is quite nascent the world over, the Committee recommend that the Ministry should focus on appropriate advance planning for development of electrolyser manufacturing capacity along with indigenisation of higher value components in the Country and research & development in the Sector. Further, solution needs to be found to cater to the additional demand of water for this Mission.

RENEWABLE ENERGY FOR NORTH EASTERN STATES

9. During the financial years 2019-20, 2020-21, 2021-22 and 2022-23, against the Revised Estimates of Rs. 375 crore, Rs. 335 crore, Rs. 499 crore and Rs. 670 crore for North-East Region, expenditure of Rs. 128.09 crore, Rs. 104.04 crore, Rs. 65.18 crore and Rs. 13 crore (upto February 2023) respectively have been incurred. It has been submitted that the shortfall in utilization of allocated funds was due to low solar insolation, low wind power density, high tariff, non-receipt of adequate proposals from the North-East States, etc. The Committee observe that under Solar Park Scheme, 6 Solar Parks were supposed to be developed in 6 States

namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram and Nagaland. However due to various reasons, all the parks except one park in Mizoram have been cancelled. It is observed that the North-Eastern States are interested in off-grid and decentralized schemes of the Ministry and the Region has substantial potential for small hydro power; however, presently, there is no scheme/programme of the Ministry for solar off-Grid and small hydro power. The Committee have been apprised that the Bio Energy Programme has been launched for implementation upto 2025-26. Hoping that the Ministry will receive proposals from North-East States under Bio Energy Programme, it is expected to give due priority to the requirements of these States under Bio Energy Programme and launch the new Schemes/Programmes for Off-grid & Decentralized Solar PV Applications and Small Hydro Power at the earliest.

RESEARCH AND DEVELOPMENT IN RENEWABLE ENERGY SECTOR

10. The Committee note that in 2019-20, BE of Rs. 60 crore was reduced to Rs. 15 crore at RE stage; in 2020-21, BE of Rs. 20 crore was increased to Rs. 49 crore; in 2021-22, BE of Rs 75 crore was reduced to Rs. 27 crore and in 2022-23, BE of Rs. 35 crore was increased to Rs. 45 crore. It is found that during the years when allocation was increased at the time of RE i.e. 2020-21 and 2022-23, the Ministry could not fully spend the allocated amount. The Ministry has submitted that 17 number of Research and Development Projects are under implementation for the last three years and the major research institutions/universities which collaborated in these projects include IIT Bombay, IIT Roorkee, IISc Bangalore, NISE, NIWE, NIBE, CSIR-National Physical Laboratory, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) and PSUs like BHEL & NTPC Limited. The Committee desire that the Ministry should collaborate with and provide

funds to more universities and specialized research institutions in order to support them for research in renewable energy. Moreover, the Ministry should focus on devising a workable solution for management and recycling of solar waste, particularly PV Cells that is going to grow exponentially in the near future. In general, the Committee recommend a holistic recycling policy for both Solar Cells and Wind Turbines, which would help in sustainable development of the Renewable Energy Sector.

NATIONAL INSTITUTE OF BIO ENERGY

11. The National Institute of Bio Energy is a specialized institution under administrative control of the Ministry of New and Renewable Energy. Since high level of Pollution is a recurring problem in the Country especially in North India, the Committee feel that National Institute specifically established for research in the field of Bio Energy and situated in Punjab is naturally expected to do research on the subject and come out with a solution, as it will also promote circular economy in the agricultural waste. The Committee, therefore recommend that the National Institute of Bio Energy should focus on developing a practical and sustainable solution for the problem of pollution arising out of stubble burning. If required, the Ministry may provide requisite funds to the Institute for this purpose from its R&D Head.

**New Delhi
March 13, 2023
Phalgun 22, 1944 (Saka)**

**Jagdambika Pal
Chairperson,
Standing Committee on Energy**

ANNEXURE-I

Detailed statement showing the Budget Estimates for the year 2023-24 vis-à-vis the Budget Estimates and Revised Estimates of 2022-23 and Actual Expenditure during 2021-22									
(Rs. In crores)									
Ministry of New and Renewable Energy		Actuals		BE		RE		BE	
Demand No. 71		2021-22		2022-23		2022-23		2023-24	
		Revenue	Capital	Revenue	Capital	Revenue	Capital	Revenue	Capital
A.	CENTRE'S EXPENDITURE								
I	Establishment Expenditure								
3451	Secretariat Economic Services	34.34	-	56.01	-	54.01	-	53.54	6.65
4810	Office Buildings	-	75.98	-	11.74	-	13.74	-	5.00
TOTAL- Establishment Expenditure		34.34	75.98	56.01	11.74	54.01	13.74	53.54	11.65
II	Central Sector Schemes								
2	Schemes of MNRE								
2.05	Solar Energy								
2810	Solar Power (Grid)	2042.22	-	3304.03	-	3469.61	-	4970.00	-
2810	Solar Power (Off-grid)	160.24	-	61.50	-	61.50	-	361.50	-
2810	Kisan Urja Suraksha evam Utthaan Mahabhiyan (KUSUM)	406.04	-	1715.90	-	1325.00	-	1996.46	-
2810	Other Renewable Energy Applications (OREA)	0.06	-	0.10	-	0.10	-	0.00	-
2810	Interest Payment and issuance Expenses on Bonds	124.35	-	124.36	-	124.35	-	124.35	-
Total - Solar Energy		2732.91	-	5205.89	0.00	4980.56	-	7452.31	-
2.06	Bio Energy Programme								
2810	Bio Power (Grid)	53.45	-	50.00	-	52.46	-	159.00	-
2810	Bio Power (Off-grid)	36.44	-	20.00	-	12.00	-	127.85	-
2810	Biogas Programme (Off-grid)	7.28	-	30.00	-	20.00	-	95.00	-
Total - Bio Energy Programme		97.17	-	100.00	0.00	84.46	-	381.85	-
2.07	Programme for Wind and other RE								
2810	Wind Power (Grid)	1100.00	-	1050.00	-	1413.00	-	1214.00	-
2810	Hydro Power (Grid)	27.73	-	50.00	-	20.00	-	30.00	-
2810	Hydro Power (Off-grid)	0.28	-	2.00	-	1.00	-	1.00	-
Total - Programme for Wind and other RE		1128.01	-	1102.00	0.00	1434.00	-	1245.00	-
2.08	Support Programme								
2810	Monitoring & Evaluation	0.00	-	0.10	-	0.01	-	0.05	-
2810	Information and Public Advertising (I&PA)	0.57	-	6.00	-	3.00	-	6.00	-
2810	Human Resources Development and Training	20.01	-	30.93	-	20.01	-	47.00	-
2810	International Relations	3.20	-	8.00	-	3.20	-	3.60	-
2810	ISA Cooperation	-	-	-	-	100.00	-	100.00	-
2810	Research and Development	26.92	-	35.00	-	45.00	-	70.00	-
Total - Support Programme		50.70	-	80.03	0.00	71.22	-	226.65	-
2.09	Hydrogen Mission								
2810	National Green Hydrogen Mission	0.00	-	0.01	-	297.00	-	297.00	-
Total - Hydrogen Mission		0.00	-	0.01	0.00	297.00	-	297.00	-
2.10	Storage and Transmission								
2810	Green Energy Corridor	134.67	-	300.00	-	250.00	-	500.00	-
Total - Storage and Transmission		134.67	-	300.00	0.00	250.00	-	500.00	-
Total - Central Sector Schemes		-	-	6787.93	0.00	6920.25	-	10102.81	-

III	Other Central Expenditure								
3	Autonomous Bodies								
2810	National Institute of Wind Energy	20.00	-	22.00	-	22.00	-	24.50	-
2810	National Institute of Bio Energy	4.96	-	7.00	-	7.00	-	9.50	-
2810	National Institute of Solar Energy	13.66	-	16.00	-	16.00	-	20.00	-
Total - Autonomous Bodies		38.62	-	45.00	0.00	45.00	-	54.00	-
Investment in CPSEs									
4810	Indian Renewable Energy Development Agency (IREDA)	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00
4810	Solar Energy Corporation of India (SECI)	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00
Total - Investment in CPSEs		0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		4216.42	2575.98	6888.94	11.74	7019.26	13.74	10210.35	11.65

STANDING COMMITTEE ON ENERGY

MINUTES OF SEVENTEENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2022-23) HELD ON 24th FEBRUARY, 2023, IN MAIN COMMITTEE ROOM, PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1430 hrs to 1715 hrs

LOK SABHA

Shri Jagdambika Pal - Chairperson

- 2 Shri Pradeep Kumar Chaudhary
- 3 Shri Kishan Kapoor
- 4 Shri Sunil Kumar Mondal
- 5 Shri Jai Prakash
- 6 Shri Dipsinh Shankarsinh Rathod
- 7 Shri Rajveer Singh (Raju Bhaiya)
- 8 Shri Shivkumar Chanabasappa Udasi
- 9 Shri Balashowry Vallabbhaneni

RAJYA SABHA

- 10 Shri Gulam Ali
- 11 Shri Rajendra Gehlot
- 12 Shri Javed Ali Khan
- 13 Shri Muzibulla Khan
- 14 Shri Krishan Lal Panwar
- 15 Dr. Sudhanshu Trivedi
- 16 Shri K. T. S. Tulsi

SECRETARIAT

1. Dr. Ram Raj Rai Joint Secretary
2. Shri R.K. Suryanarayanan Director
3. Shri Kulmohan Singh Arora Additional Director

WITNESSES

MINISTRY OF NEW AND RENEWABLE ENERGY

1	Shri Bhupinder Singh Bhalla	Secretary
2	Shri Padam Lal Negi	Joint Secretary & Financial Adviser
3	Shri Ajay Yadav	Joint Secretary
4	Shri Dinesh Dayanand Jagdale	Joint Secretary
5	Shri J. Rajesh Kumar	Economic Adviser
6	Shri Arvind Kumar	Chief Controller of Accounts

PUBLIC SECTOR UNDERTAKINGS/AUTONOMOUS BODIES

7	Shri Pradip Kumar Das	CMD, IREDA
8	Ms. Suman Sharma	MD, SECI
9	Shri Lalit Bohra	Joint Secretary & DG, NISE
10	Dr. Rajesh Katyal	DG, NIWE
11	Dr. G. Sridhar	DG, NIBE

2. At the outset, the Hon'ble Chairperson welcomed the Members of the Committee and representatives of the Ministry of New and Renewable Energy, Indian Renewable Energy Development Agency (IREDA), Solar Energy Corporation of India Limited (SECI), National Institute of Solar Energy (NISE), National Institute of Wind Energy (NIWE), National Institute of Bio Energy (NIBE) to the sitting and informed that the sitting had been called for evidence in connection with examination of Demands for Grants (2023-24) of the Ministry. The Chairperson also apprised them about the provisions of Directions 55(1) and 58 of the Directions by the Hon'ble Speaker.

3. During the discussion, a power-point presentation was made on the subject which, *inter-alia*, covered Major Targets; Overview of Renewable Energy Projects; Progress over the Years; Structural and Programme Interventions; Tentative Non-Fossil Fuel based Electricity Capacity – 2030; PM-KUSUM Scheme; Roof-top Solar Programme Phase-II; Simplified Procedure for Installation of RTS in Residential Sector; Solar Manufacturing – PLI Scheme for High Efficiency Solar PV Modules; Solar Parks; Green Energy Corridor – Intra State Transmission System; National Green Hydrogen Mission; Wind Energy; National Bio Energy Programme; Renewable Energy Research and Technology Development Programme; Expenditure of the

Ministry during last three years; Umbrella wise RE 2022-23 and BE 2023-24; Initiatives Pending Approval – Green Energy Corridor Phase-II Inter-State Transmission System for 13 GW Renewable Energy in Ladakh, Off-Grid Solar PV/Thermal & DRE Livelihood Applications Programme and Off-shore Wind Programme; etc.

4. The Committee, *inter-alia*, deliberated upon the following points with representatives of the Ministry of New and Renewable Energy, IREDA, SECI, NISE, NIWE and NIBE:

- i) Need to merge the Ministry of New and Renewable Energy with the Ministry of Power;
- ii) Reasons for mismatch in the demand, allocation and actual utilization of funds;
- iii) Need to augment Ministry's administrative capacity for better absorption of funds with visible results on the ground;
- iv) Issues related to slow progress of PM-KUSUM Scheme;
- v) Issues related to weak performance in Solar Roof-top Programme;
- vi) Performance of the National Portal developed for Solar Roof-top;
- vii) Implementation Status of Solar Park Scheme;
- viii) Need for a scheme/programme for Wind Energy and Small Hydro Power;
- ix) Reasons for non-utilization of funds allocated for Research and Development in Renewable Energy Sector;
- x) Need to increase utilization of funds allocated for North-Eastern Region;
- xi) Issues related to National Green Hydrogen Mission and associated challenges;
- xii) Issues related to Productivity Linked Incentive (PLI) Scheme for manufacturing of 'High Efficiency Solar PV Modules';
- xiii) Need for timely completion of Intra-State Green Energy Corridor;
- xiv) Issues related to Bio-Energy Programme and reasons for poor performance under earlier Biomass Programme specifically in North-Eastern States and Union Territories;
- xv) Issues related to low allocation of funds for National Institutes of Solar, Wind and Bio Energy respectively;
- xvi) Issues related to capital infusion in Indian Renewable Energy Development Agency and Solar Energy Corporation of India Limited.

5. The Members also sought clarifications on various other issues relating to the subject and representatives of the Ministry and concerned Organizations responded to the same. The Committee directed the representatives to furnish written replies to those queries which could not be fully responded to by 28th February, 2023.

The Committee then adjourned.

STANDING COMMITTEE ON ENERGY

MINUTES OF EIGHTEENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (2022-23) HELD ON 13th MARCH, 2023 IN COMMITTEE ROOM 'D', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee sat from 1015 hours to 1100 hours

LOK SABHA

- 1 Shri Gurjeet Singh Aujla
- 2 Shri Pradeep Kumar Chaudhary
- 3 Dr. A. Chellakumar
- 4 Shri S. Gnanathiraviam
- 5 Shri Kishan Kapoor
- 6 Shri Sunil Kumar Mondal
- 7 Shri Ashok Mahadeorao Nete
- 8 Shri Shivkumar Chanabasappa Udasi (*in the Chair*)
- 9 Shri Balashowry Vallabbhaneni

RAJYA SABHA

- 10 Shri Gulam Ali
- 11 Shri Rajendra Gehlot
- 12 Shri Narain Dass Gupta
- 13 Shri Muzibulla Khan
- 14 Shri Maharaja Sanajaoba Leishemba
- 15 Shri K.R.N. Rajeshkumar
- 16 Dr. Sudhanshu Trivedi

SECRETARIAT

1. Dr. Ram Raj Rai Joint Secretary
2. Shri R.K. Suryanarayanan Director
3. Shri Kulmohan Singh Arora Additional Director

2. Since the Hon'ble Chairperson could not attend the Sitting, Shri Shivkumar Chanabasappa Udasi, a Member of the Committee chaired the sitting in accordance with Rule 258(3) of the Rules of Procedure and Conduct of Business in Lok Sabha.

3. At the outset, the acting Chairperson welcomed the Members and apprised them about the agenda of the sitting. The Committee then took up for consideration and adoption the following draft Reports:

- (i) Report on 'Action-taken by the Government on recommendations contained in the 24th Report (17th Lok Sabha) of the Committee on Demands for Grants (2022-23) of the Ministry of New and Renewable Energy'.
- (ii) Report on 'Demands for Grants (2023-24) of the Ministry of New and Renewable Energy'.
- (iii) Report on 'Demands for Grants (2023-24) of the Ministry of Power'.

4. After discussing the contents of the Reports in detail, the Committee adopted the draft Report on 'Action-taken by the Government on recommendations contained in 24th Report (17th Lok Sabha) of the Committee on Demands for Grants (2022-23) of the Ministry of New and Renewable Energy' and draft Report on 'Demands for Grants (2023-24) of the Ministry of Power' without any amendment/modification. The draft Report on 'Demands for Grants (2023-24) of the Ministry of New and Renewable Energy' was adopted with minor modifications/amendments. The Committee also authorized the Chairperson to finalize the above-mentioned Reports and present the same to both Houses of the Parliament.

The Committee then adjourned.
