05 STANDING COMMITTEE ON ENERGY

(2019-20)

SEVENTEENTH LOK SABHA

MINISTRY OF NEW AND RENEWABLE ENERGY

[Action Taken on the recommendations contained in the Thirty-ninth Report (16th Lok Sabha) on Demands for Grants of the Ministry of New and Renewable Energy for the year 2018-19]

FIFTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

March, 2020/ Phalguna, 1941 (Saka)

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STANDING COMMITTEE ON ENERGY
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Presented to Lok Sabha on 12.03.2020

Laid in Rajya Sabha on 12.03.2020

LOK SABHA SECRETARIAT
NEW DELHI

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CONTENTS

COMPOSITION OF THE STANDING COMMITTEE ON ENERGY (2019-20)

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2.	@Shri N.K.Pandey	Director
3	Smt. L. Nemjalhing Haokip	Deputy Secretary

INTRODUCTION

I, the Chairperson, Standing Committee on Energy having been authorized by the Committee to present the Report on their behalf, present this Fifth Report on the action taken by the Government on the recommendations contained in Thirty-ninth Report of the Standing Committee on Energy on Demands for Grant (2018-19) of the Ministry of New and Renewable Energy.

2. The Thirty-ninth Report was presented to the Lok Sabha on 13th March, 2018 and was laid in Rajya Sabha on the same day. Replies of the Government to all the recommendations contained in the Report were received on 18th February , 2019.

3. The Report was considered and adopted by the Committee at their sitting held on 27th February, 2020.

4. An Analysis on the Action Taken by the Government on the recommendations contained in the Thirty-ninth Report of the Committee is given at Appendix-II.

5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in the body of the Report.

NEW DELHI
06 March, 2020
Phalguna 16, 1941 (Saka)

Rajiv Ranjan Singh *alias* Lalan Singh,
Chairperson,
Standing Committee on Energy

CHAPTER –I

This Report of the Standing Committee on Energy deals with the action taken by the Government on the Recommendations/Observations contained in the Thirty-Ninth Report (Sixteenth Lok Sabha) on Demands for Grants of the Ministry of New and Renewable Energy for the year 2018-19.

2. The Thirty-Ninth Report was presented to Lok Sabha on 13th March, 2018 and was laid on the Table of Rajya Sabha on the same day. The Report contained 25 Recommendations/Observations.

3. Action Taken Notes in respect of all the Recommendations/Observations contained in the Report have been received from the Government. These have been categorized as follows:

(i) Recommendations/Observations which have been accepted by the Government:
Serial Nos.1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21, 22,23,24,25

Total - 25
Chapter-II

(ii) Recommendation/Observation which the Committee do not desire to pursue in view of the Government's replies:
Nil Total - 00
Chapter-III

(iii) Recommendations/Observations in respect of which the replies of the Government have not been accepted by the Committee and which require reiteration:
Nil Total– 00
Chapter-IV

(iv) Recommendation/Observation in respect of which the final replies of the Government are still awaited:
Nil Total - 00
Chapter-V

4. The Committee in principle accepted all the replies furnished by the Government. However, they will deal with action taken by the Government on some of their Recommendations that require merit comments.

5. The Committee also desire that Action Taken Notes on the Observations/ Comments contained in Chapter-I of the Report may be furnished to the Committee within three months of the presentation of this Report.

(Recommendation No. 2)

6. The Committee were concerned that the Ministry has continuously failed to achieve its yearly targets. For the year 2016-17, against the Grid connected Renewable Power target of 16,600 MW, the Ministry could achieved only 11,303.70 MW. Similarly, for the year 2017-18, against the Grid connected Renewable Power target of 14,555 MW, the Ministry had achieved 5602.65 MW till December, 2017. The Committee were highly skeptical about the achievement of physical targets in the year 2017-18.

The Committee had felt that year-on-year non-achievement of the physical targets would derailed the entire Mission of achieving 175 GW by 2022. Such performance reflects poorly on the seriousness and commitment of the Ministry to achieve the given targets. The Committee were not satisfied with the performance of the Ministry and had recommended that:

i) The Ministry should identify weak areas on the basis of its performance during the previous years and take corrective measures without any further delay.

ii) The Ministry should also work towards proper and continuous monitoring of the implementing agencies.

7. The Ministry of New and Renewable Energy, in its Action Taken Reply, has stated as under:

"The suggestion of the Committee has been duly noted. The Government is optimistic in achieving the 175 GW target by the year 2022. During the year 2018-19, an achievement of 4185.71 MW has been reported taking the cumulative achievement to 74786.39MW as on December, 2018.Atotal of more than 38 GWrenewable energy capacity has been added in last four and half years.In addition, as on 31.12.2018,21.04 GW of projects were under implementation and 32.47 GW of projects had been tendered taking the total capacity commissioned/under implementation / bidding to 128 GW out of targetof 175 GW.Further, the Ministry has drawn action plan for achieving 175 GW target by 2022 by declaring trajectory for bidding of solar and wind power in 2018-19 and 2019-20. The Ministry is promoting deployment of renewable energy in the country through various fiscal and promotional incentives, such as, capital subsidy, accelerate depreciation waiver of Inter State Transmission System (ISTS) charges and losses, Viability Gap Funding (VGF) and permitting Foreign Direct Investment up to 100 per cent under the automatic route. Also, to ensure cheaper generation of renewable energy, projects are awarded through transparent bidding process i.e. through e-reverse auction. Government has also issued standard bidding guidelines to enable the distribution licensees to procure power at competitive rates in cost effective manner. States/UTs have been requested to come up with renewable energy bids on their own".

8. The Committee note that the Ministry are optimistic in achieving the 175 GW renewable energy target by the year 2022. They have also informed the Committee that as on December, 2018, projects of total capacity of 128 GW have been commissioned/ under implementation / bidding against the target of 175 GW. The Committee note that the Ministry have drawn action plan for achieving 175 GW target by 2022 by declaring trajectory for bidding of solar and wind power and also promoting deployment of renewable energy through various fiscal and promotional incentives, etc. They have also encouraged the States/UTs to come up with renewable energy bids on their own. The Committee appreciate the various steps taken by the Ministry in the target to achieve 175 GW renewable power by 2022. As the Mission is an ambitious target of the Government, the Committee would like to re-emphasize their recommendation that the Ministry should focus towards proper and continuous monitoring of the implementing agencies and ensure achievement of the target of 175 GW renewable power by the year 2022.

(Recommendation No.10)

9. The Committee had noted that against the target of achieving 100 GW of Solar Energy by 2022, a capacity of 18,454.97 MW had been installed in the country (as on January 31, 2018). The Committee had felt that the Ministry have a huge task before them to install remaining 81,545 MW of Solar Energy Capacity in just four years so as to meet the stipulated target of 1,00,000 MW Solar Energy Capacity by 2022, with an average of more than 20,000 MW per year. The Committee had observed that for the year 2017-18, against the target of 10,000 MW of Grid-connected Solar Power, the Ministry could achieved only 6166.15 MW (as on January 31, 2018) with utilization of Rs. 951.93 crore i.e. the achievement is about 40 % short of the target. For the year 2018-19, a physical target of 11,000 MW for Grid-connected Solar Power was planned with an allocation of Rs. 2045.25 crore. The Committee had found that the Ministry has continuously been missing on its yearly Solar Energy Capacity Addition targets. Against this backdrop, the Committee felt that the target of 100 GW will be very hard to achieve and had therefore recommended that:

i) The Ministry should work hard so as to achieve the target of 11,000 MW set for the year 2018-19.
ii) The Ministry should play a proactive role in monitoring the progress of various Solar Energy Projects.
iii) The Ministry should also ensure that Solar Energy Projects are not affected due to lack of adequate financial resources.
iv) The Ministry should make sustained efforts to find solutions for the constraints being faced in the commissioning of Solar Projects in consultation with other agencies concerned in a time bound manner.

10. The Ministry of New and Renewable Energy, in its Action Taken Reply, has stated as under:

"(i) Ministry holds regular review meetings with SECI, NTPC, different State Governments, Central Transmission Utility(CTU), State Transmission Utility(STU), various solar park developers and solar power developers to resolve the issues and making all out

efforts to achieve the target of 11,000 MW set for the year 2018-19.

(ii) Ministry is proactively involved with various stakeholders and monitoring the progress of various Solar Energy Projects in the country so as to achieve the target of NSM.

(iii) Availability of Budgetary financial resources is not a major issue as most of the investment is met by the private solar power developers. Ministry is facilitating development solar projects through various policies and schemes like solar park scheme, VGF scheme etc. Ministry is also facilitating in arranging fund through Word bank, ADB, KfW, and EU etc.

(iv) As mentioned above, Ministry is regularly meeting with various stakeholders to address the constraints being faced in the commissioning of solar projects in a time bound manner.

11. The Committee are informed that the Ministry have been holding regular review meetings with SECI, NTPC, different State Governments, Central Transmission Utility(CTU), State Transmission Utility (STU), various solar park developers and solar power developers to resolve the issues and making all out efforts to achieve the target of 11,000 MW set for the year 2018-19. They have however, not updated the achievement against the target in the year 2018-19. The Ministry have also stated that they are proactively involved with various stakeholders and monitoring the progress of various Solar Energy Projects in the country so as to achieve the target of National Solar Mission and that availability of Budgetary financial resources is not a major issue as most of the investment is met by the private solar power developers and that the Ministry is facilitating development solar projects through various policies and schemes like solar park scheme, VGF scheme etc. The Committee also note that the Ministry is facilitating in arranging fund through World bank, ADB, KfW, and EU etc.

The Committee appreciate the Ministry for its efforts. But at the same time they are apprehensive about the target achievement with respect to the Solar Energy viz. 100 GW by 2022 and feel that if the Ministry continue to miss to achieve its yearly solar target, there are high chances that the target of 100 GW of Solar Energy by 2022 cannot be achieved. Nevertheless, as the Ministry have been putting all out efforts to achieve the target, the Committee trust the Ministry in their endeavors, but would like to re-emphasize that in order to achieve the target of 100GW solar power by 2022, the Ministry should work on a mission mode so as to achieve the yearly target set for the year and should play a proactive role in monitoring the progress of various solar energy projects.

(Recommendation No.12)

12. The Committee had noted that there are 1,47,527 units of Solar Pumps installed in

the country (as on December 31, 2017) and there is a proposal to install 1.5 lakhs Solar Pumps during the period 2017-20. They were also informed that a new initiative 'KUSUM' has been announced in Budget 2018-19 to empower farmers by giving them grid connected Solar Pumps. According to this scheme, the farmers can supply the access power to the grid and earn an additional income. The Scheme includes installation of 10,000 MW of Decentralized Ground Mounted Grid Connected Solar Power Plants of intermediate capacity of 0.5–2 MW, installation of 17.50 lakh standalone Solar Powered Agriculture Pumps of capacity upto 7.5 HP, Solarisation of 10 Lakh Grid-connected Powered Agriculture Pumps with support of upto 5 HP capacity and Solarisation of 50,000 Grid-connected tube-wells/lift irrigation and drinking water projects of upto 50 HP capacity. The Committee had appreciated the Government for its efforts to empower farmers, but were concerned that already financially constrained DISCOMs may not be able to pay the farmers for the access power supplied to the grid. The Committee were of the opinion that non-payment of dues by the DISCOMs will further alienate the farmers and will definitely have serious repercussions for the Government. The Committee had therefore, recommended that:

i) The Ministry should formulate some mechanism to ensure payment from DISCOMs to farmers and would like to know about the details of any such mechanism as early as possible.

ii) The Ministry should also ensure quality, sustainability and maintenance of installed Solar Pumps.

13. In its Action Taken Replies, the Ministry of New and Renewable Energy has stated as under :

"Under the proposed KUSUM Scheme, in order to ensure payment to farmers the payment of lease rent would be paid directly by the Discom out of the proceeds to the project developer for renewable power generation. In case of farmer/group of farmers themselves being project developer the payment for renewable power supplied to Discom would be ensured through suitable payment security instruments like letter of credit, escrow arrangements, etc. Further, the payment of performance based incentives to Discoms would be released after ensuring timely payment to farmers by Discoms.

Regarding quality, sustainability and maintenance of solar pumps, in the guidelines of the proposed KUSUM scheme, mandatory real time monitoring of the solar pump, at least five year comprehensive maintenance, provision 24X7 help line and service centre, etc., would be included".

14. The Committee are happy to note that under the proposed KUSUM Scheme, the Ministry have initiated steps to ensure payment from DISCOM to farmers as recommended by them. Regarding quality, sustainability and maintenance of solar pumps, the Ministry has stated that they would be including mandatory real time monitoring of the solar pump, at least five year comprehensive maintenance, provision of 24X7 help line and service centre, etc, in the guidelines of the proposed KUSUM scheme. The Committee take note of the initiatives taken by the Ministry and would like to be apprised them the guidelines of the proposed KUSUM Scheme.

(Recommendation No 17)

15 The Committee were informed that Renewable Energy for Rural Applications

includes the National Bio-Gas and Manure Management Programme (NBMMP) and Bio-Gas based Power Generation (0ff-Grid) Programme. The Committee has observed that from the year 2014-15 to 2017-18, allocation for this Sector had been considerably reduced and the Ministry has consistently failed to achieve its financial and physical targets. During the year 2017-18, against the Financial Allocation (RE) of Rs. 94 crore, only Rs. 44.58 crore (47.42%) was utilized and against the physical target of 65,180 Bio-Gas Plants, the Ministry was able to set up only 22,000 such plants (~34%). The Committee had felt that the performance of the Ministry is discouraging in this sector. The Committee were also informed that the non-achievement of Bio-Gas target was due to drought conditions during the years 2014-15 and 2015-16, high upfront cost of biogas plants, reduced subsidy support, lack of priority at state level, impact of Ujjawala Scheme, low publicity of the programme by the implementing agencies, etc.

The Committee had noted that for the year 2018-19, a budgetary allocation of Rs. 135 crore was made for Bio-Gas under Off-Grid Renewable Power with physical target of 1 lakh Bio-Gas Plants. It has been submitted that the Budgetary allocation of 2018-19 in respect of Off-Grid/Distributed and Decentralized Renewable Power includes Biogas as Biogas has been merged under Off-Grid/Distributed and Decentralized Renewable Power.The Committee were of the view that apart from electricity generation, Bio-Gas Plants help millions of rural folk by meeting their cooking and other energy requirements. The Committee, had therefore, recommended that:

i) The Ministry should focus on the feasibility, affordability and availability of the new technologies for the rural areas so as to provide for enhanced economic activities at village level ultimately improving the standard of living in remote areas of the country.

ii) The Ministry should strive hard to achieve their physical targets so as to provide clean energy solutions to the rural poor specially women and children through reduced consumption of fuel wood.

16. The Ministry of New and Renewable Energy in its reply has stated as under :

"During the year 2017-18, against the financial allocation (RE) of Rs.93.50 crore, Rs. 67.70 crore (72.40 %) have been utilized for setting up of family type household biogas plants under the National Biogas and Manure Management Programme (NBMMP) and Biogas based Power Generation (Off-Grid) Programme (BPGP) including thermal energy applications.

Under the NBMMP, against a physical target of setting up 65180 biogas plants during the year 2017-18, more than 41322 biogas plants (63%) have been installed. The Ministry would continuously promote affordable, feasible and innovative low cost biogas technologies for rural areas. In order to achieve the envisaged target of 1 lakh biogas plants and setting up a total installed minimum biogas generation capacity of 3 lakh cubic metre per day during 2018-19, the implementation strategies have been revised to scale up the installations of Biogas Plants.

Further, the Ministry is implementing off-grid/distributed and decentralized renewable energy program for solar and biogas with an objective of meeting lighting, motive power and alternate clean cooking fuel needs of the semi-urban and rural areas of the country".

17. The Committee note that in order to achieve the envisaged target of 1 lakh biogas plants and setting up a total installed minimum biogas generation capacity of 3 lakh cubic metre per day during 2018- 19, the Ministry revised the implementation strategies to scale up the installations of Biogas Plants. Although the number of biogas plants installed are not make known to the Committee, they are optimistic that the Ministry met the target set for the year 2018-19. While the

Committee acknowledge the Ministry's seriousness by revising the implementation strategy in order to scale up the installation of Biogas Plants, they would also like to re-emphasize their recommendation to focus on the feasibility, affordability and availability of the new technologies for the rural areas so as to provide for enhanced economic activities at village level ultimately improving the standard of living in remote areas.

CHAPTER II
OBSERVATIONS/ RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

Status of implementation of the recommendations of the Committee contained in the Thirty-Ninth Report, under Direction 73A of the 'Directions by the Speaker'

(Recommendation No. 1)

Budget Allocation and Utilization

The Committee observe that the Gross Budgetary Support has been decreased at RE stage for the last two years i.e. 2016-17 and 2017-18. However, the Committee appreciate the Ministry for its efforts to mobilize extra funds through IEBR. The Committee also observe that for the last two years, the Ministry has not been able to fully utilize the allocated amount. It is found that the Ministry could utilize only 63%, 65% and 70% of the total fund allocation during the years 2015-16, 2016-17 and 2017-18 (upto December, 2017) respectively.

The Committee feel that given the ambitious targets to be achieved by the Ministry, such low utilization of allocated funds is beyond comprehension and is indicative of poor financial planning by the Ministry leading to sub-optimal fund utilization. Therefore, the Committee recommend that:

i) The Ministry should focus on proper and exhaustive utilization of allocated funds so as to achieve the given targets and take corrective steps against reasons responsible for low utilization of funds.

ii) The Committee would also like to be apprised of remedial measures adopted in this regard.

Reply of the Government

Reply: (i) and (ii) The suggestion of the Committee have been Noted. During the year 2017-18 against a Revised Estimate (RE) of Rs.4080 Crore actual Expenditure was Rs.3768.73 Crore. The utilization of fund was 92.37% of R.E.The utilization of funds aredependent upon submission of project proposals and achievement/compliance of related physical and financial achievements. There is some shortfall on account of non-receipt of project proposals complete in all respect as per scheme guidelines. During the year 2018-19 (as on 30.12.2018) against a B.E and R.E of Rs. 5146.63 on expenditure of Rs. 3529.71 crore has been incurred which is 68.58% of B.E and R.E.

The Ministry is optimistic that the budget of the Ministry will be utilized to the maximum for the year 2018-19. The pace of expenditure is being regularly monitored by Minister and Secretary. Stakeholders/Implementing Agencies have been advised to send the proposals complete in all respects so as to ensure smooth fund flow for the projects under execution. Status of Utilization Certificate (UC) is also being regularly reviewed with program divisions, Central and State level agencies and other organizations for facilitation of fund release.

[Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 2)

Physical Targets and Achievements

The Committee are concerned to note that the Ministry has continuously failed to achieve its yearly targets. For the year 2016-17, against the Grid connected Renewable Power target of 16,600 MW, the Ministry could achieve only 11,303.70 MW. Similarly, for the year 2017-18, against the Grid connected Renewable Power target of 14,555 MW, the Ministry has achieved 5602.65 MW till December, 2017 i.e. 8952.35 MW is still left to be achieved in just three months. The Committee are highly skeptical about the achievement of physical targets for the year 2017-18.

The Committee feel that year-on-year non-achievement of the physical targets will

derail the entire Mission of achieving 175 GW by 2022. Such performance reflects poorly on the seriousness and commitment of the Ministry to achieve the given targets. The Committee are highly dissatisfied with the performance of the Ministry. The committee, therefore, recommend that:

i) The Ministry should identify weak areas on the basis of its performance during the previous years and take corrective measures without any further delay.

ii) The Ministry should also work towards proper and continuous monitoring of the implementing agencies.

Reply of the Government

Reply:The suggestion of the Committee has been duly noted. The Government is optimistic in achieving the 175 GW target by the year 2022. During the year 2018-19, an achievement of 4185.71 MW has been reported taking the cumulative achievement to 74786.39MW as on December, 2018.Atotal of more than 38 GWrenewable energy capacity has been added in last four and half years.In addition, as on 31.12.2018,21.04 GW of projects were under implementation and 32.47 GW of projects had been tendered taking the total capacity commissioned/ under implementation / bidding to 128 GW out of targetof 175 GW.Further, the Ministry has drawn action plan for achieving 175 GW target by 2022 by declaring trajectory for bidding of solar and wind power in 2018-19 and 2019-20. The Ministry is promoting deployment of renewable energy in the country through various fiscal and promotional incentives, such as, capital subsidy, accelerate depreciation waiver of Inter State Transmission System (ISTS) charges and losses, Viability Gap Funding (VGF) and permitting Foreign Direct Investment up to 100 per cent under the automatic route. Also, to ensure cheaper generation of renewable energy, projects are awarded through transparent bidding process i.e. through e-reverse auction. Government has also issued standard bidding guidelines to enable the distribution licensees to procure power at competitive rates in cost effective manner. States/UTs have been requested to come up with renewable energy bids on theirown.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

Comments of the Committee

(Please see Para No. 8 of Chapter – I of the Report)

(Recommendation No 3)

Financial Support from National Clean Energy Fund (NCEF)

The Committee note that from the financial year 2011-12 to 2016-17, an amount of Rs. 17,086.24 crore was allocated to MNRE from NCEF and for the year 2017-18, an amount of Rs. 5341.70 crore was given from NCEF. But, the Committee are informed that from the year 2018-19, there will be no fund allocation from NCEF as the same would be utilized to compensate the States for the potential losses on account of GST implementation. The Committee also note that 52 Renewable Energy Projects with a total Viability Gap Funding (VGF) of Rs. 34,503.79 crore have been recommended for NCEF support.

Keeping in view the discontinuation of support from NCEF, the Committee recommend that:

i) The Ministry should make concerted efforts to mobilize additional funds through Government of India serviced/Masala Bonds, Multilateral Financial Organizations, etc.

ii) The Committee would also like to know about the status of 52 Renewable Energy Projects that had been recommended for NCEF support.

Reply of the Government

Reply (I and II): The suggestion of the Committee has been dullynoted. The Budget Estimate (BE) and Revised Estimate(RE) of MNRE for the year 2018-19 had been fixed at Rs. 5146.63 Crore. Hence, there is no cut on the B.E of 2018-19. BE for the year 2019-20 has been tentatively fixed at Rs. 5254.83 Crore. However, the details of efforts made to mobilize additional funds are summarized below:

During the FY 17-18, Indian Renewable Energy Development Agency (IREDA) had established the Medium Term Note (MTN) programme of USD 300 Million listed on both London Stock Exchange and Singapore Stock Exchange to raise funds from the Off-Shore Market. Under said programme IREDA had successfully raised ₹1950 Crore (equivalent to USD 300 Million) in the form of rupee denominated Green Masala Bonds for a tenure of 5 years and at a coupon rate of 7.1250 percent , yield of 7.23 per cent. The proceeds of Masala bond were fully utilized for financing of Renewable Energy projects by IREDA.

IREDA's Masala Bonds were the first, which were listed at International Security Market, London. The issue was in accordance with 'Green Bond framework' formulated by IREDA. The green certification has been provided by Climate Bond Initiative, London.

For the FY 18-19, the Board of IREDA has approved the plan to update the MTN programme further by USD 1000 Million to a total of USD 1,300 Million to raise Green Masala Bond/ Green Offshore bonds from the international market over a period of 3-5 years. The proceeds will be used for financing of Renewable Energy projects by IREDA.

Multilateral / bilateral funding

IREDA has been raising resources through various lines of credit and the fund is utilized in financing of Renewable Energy and Energy Efficiency projects by IREDA. The status is as under:

- During the FY 2017-18 IREDA raised resources aggregating to ₹203.10 Crore through various Lines of Credit from overseas sources, viz. World Bank (IBRD) and ADB-II.
- Signed Line of Credit (LoC) of EUR 150 Million from European Investment Bank as EIB on Non-Sovereign Basis.
- Signed Line of Credit (LoC) of USD 100 Million from World Bank, which also include 23 Million-CTF Loan for a period of 40 years and USD 2 Million-CTF grant on Sovereign basis.
- The proposed Drawl from multilateral/Bilateral Agency for FY 2018-19 and 2019-20 is under, which shall be utilized for financing of RE projects by IREDA :

(₹ Crore)

Lender	2018-19	2019-20
AFD-II	168.89	144.65
KfW-V	694.95	66.12
KfW-VI		8.44
JICA-II	63.9	438.35
EIB-II		337.77
ADB-II	411.44	36.27
World Bank	41.85	108.83
Total	1381.03	1140.43

The details of projects sanctioned under NCEF funding for Renewable Energyare given in Annexure-I.

Ministry of New & Renewable Energy

OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 4)

Effect of GST on Renewable Energy Sector

The Committee note that the Renewable Energy devices and spare parts for their manufacture have been kept in 5% GST slab. However, the Committee are informed that a lot of confusion is prevailing and considerable difficulties are being experienced in the actual implementation of GST on Renewable Energy Sector. It was expected that the GST for all equipments utilized in Solar Projects would be 5 %. But, the Committee were apprised that there will be different GST rates for various components of the Solar Projects. The Committee find that GST rates for the Renewable Energy Sector differ from 5 % on Solar Modules to 18 % on Inverters to 28 % on Batteries.

There are apprehensions that applicable rate of GST on Solar Power Generating Systemwhich is not a “Good” bought and sold in the market, would actually be 18% under "work-contract" rather than intended 5%. Similarly, in case of solar power developer himself being an EPC contractor, he will not get the benefit of 5% GST on Solar Power generating System as his final product is "Electricity" which is exempted from GST. There is also an issue of refund of input tax credit leading to higher working capital requirement.

The Committee are of the opinion that this prevailing confusion regarding applicability of GST rate and uncertainty over refund of input tax credit are not healthy for the Renewable Energy Sector. Such a situation will lead to increase in generation cost and pose a threat to the viability of the ongoing projects, ultimately hampering the target achievement. The Committee want the Ministry to take up this matter on urgent basis. The Committee, therefore, recommend that the Ministry should raise these issues regarding applicable rate of GST and refund of input tax credit with the Ministry of Finance for necessary clarifications and modifications without any further delay.

Reply of the Government

Reply:Ministry of New & Renewable Energy has been consistently pursuing with Ministry of Finance regarding resolution of issues pertaining to GST for renewable energy sector, especially for solar power generating systems. To resolve the disputes regarding the applicable rate of GST,based on the recommendations of the GST Council in its 31st meeting held on 22nd December, 2018, Ministry of Finance vide its Notification No. 25/2018-Integrated Tax (Rate) dated 31.12.2018, has clarified that if the goods specified in the entry pertaining to “Solar Power Generating System” are supplied, by a supplier, along with supplies of other goods and services, one of which being a taxable service (as specified in relevant provisions), the value of supply of goods for the purposes of the entry pertaining to “Solar Power Generating System”, shall be deemed as seventy per cent of the gross consideration charged for all such supplies, and the remaining thirty per cent of the gross consideration charged shall be deemed as value of the said taxable service.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 5)

Green Energy Corridor

The Committee note that under Green Energy Corridor Project, there is a target of establishment of Grid sub-stations of different voltage levels with aggregate transmission capacity of approx. 19000 MVA (Mega Volt Ampere) and installation of over 8500 ckt-kms (Circuit kilometres) of transmission lines in the states of Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu with funding mechanism consisting of 40% NCEF Grant, 40% KfW loan (EUR 500 Million) and the remaining 20 percent as State contribution. It has been submitted that the project would be completed by March 2020. The Committee also note that as on December 31, 2017, works related to installation of transmission towers and its stringing for aggregate

1100 ckt-kms have been completed (commissioning is pending).

It can be deduced from the data provided, that to meet the given target, 7400 ckt-kmsof transmission lines have to be installed in just two years i.e. upto March 2020. The Committee know that for 2017-18, the Ministry was provided Rs. 500 crore (BE) for Green Energy Corridor with a physical target of 350 ckt-kms. But, the data related to physical and financial achievements under Green Energy Corridor Projects for 2017-18, has not been furnished.

The Committee observe that for 2018-19, an allocation of Rs. 600 crore (BE) has been made for Green Energy Corridor with a physical target of 3000 ckt-kms (cumulative). It means that 1900 ckt-kms of transmission lines have to be installed during 2018-19. The Committee feel that there is mismatch between the fund allocated and physical targets set, as for 2017-18, Rs. 500 crore were provided for installation of 350 ckt-kms of transmission lines and for 2018-19, Rs. 600 crore have been allocated for installation of 1900 ckt-kms of transmission lines (target for 2018-19 is more than five times the target for 2017-18 while corresponding budgetary increase is only one-fifth of previous year). It shows the unrealistic assessment of financial requirement and corresponding physical targets by the Ministry. The Committee feel that there should be some cohesion and correlation between physical and financial targets for achievement of Green Energy Corridor. Further, the cumulative target of achieving 3000 ckt-kms of transmission lines by March 2019, leaves 5500 ckt-kms of transmission lines to be installed during 2019-20, so as to get installed stipulated 8500 ckt-kms of Green Energy Corridor by March 2020. The Committee are highly apprehensive about the target achievement with respect to the Green Energy Corridor as the target seems unattainable during the remaining period. The Committee, therefore, recommend that the Ministry should work on mission mode to get ready the Green Energy Corridor within the stipulated time if they are serious about the Project.

Reply of the Government

Reply: For the ease of implementation, the Green Energy Corridor has been divided into total 85 packages by the State Governments. In the initial years, the State Transmission Utilities have issued and awarded tenders for these lines and substations. Therefore, there is a less installation in the starting years and target increases exponentially during the completion period.Further, as per the scheme guidelines, the Government of India share is given to the States in two instalments: a) 70% Advance on the award of contract, b) Balance 30% after commissioning. The fund disbursal does not depend 'proportionately' upon the completion of transmission lines in terms of ckm.It is not that money spent in a particular year is correlated to actual length ofckm laid down in that year. The projects get implemented over a period of time and so it is expected that earlier sanctioned projects would come to completion in the coming year(s), enabling a higher proportionate completion of the physical targets.As a result of competitive bidding, savings in costs have been accrued. This is being used to increase the target of transmission lines to 9000ckm by 2020-21. The bidding of the infrastructure is cumulative process with the year wise cumulative completion plan is as follows:

2017-18	*1200*
2018-19	*3000*
2019-20	*6000*
2020-21	*9000*

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 6)

Demands for Grants of the Ministry for 2018-19

The Committee note that an amount of Rs. 5472.84 crore was allocated to the Ministry for 2017-18 which was reduced to Rs. 4080 crore at the RE stage. The Committee feel that a

reduction of Rs. 1392.84 crore at the RE stage is not in sync with the humongous targets assigned to the Ministry. Further, an allocation of Rs. 5843.96 crore was sought by the Ministry for 2018-19, but, Rs. 5146.63 crore have actually been sanctioned i.e. Rs. 697.33 crore less than the required amount. The Committee are informed that some additional funds will be required which will be assessed and sought at the RE stage.Keeping in view the allocation of less than required amount and the high targets assigned to the Ministry, the Committee recommend that additional funds should be provided to the Ministry at RE stage.

Reply to the Government

Reply: Against the demand of Rs. 5843.96 Crore for 2018-19 a B.E of Rs. 5146.63 Crore has been allocated to the Ministry for 2018-19. At R.E (2018-19) stage the Ministry had requested an additional amount of Rs.731.54 Crore. However, the R.E has also been kept at Rs. 5146.63 Crore equal to B.E for the year 2018-19. Hence, no cut has been imposed. The B.E for the year 2019-20 has been kept at 5254.83 Crore in the Budget placed in the Lok Sabha on 1st February, 2019.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 7)

The Committee note that for 2018-19, the physical targets assigned to the Ministry include 15,620 MW of Grid Interactive Renewable Power, 3000 ckm (cumulative) of Green Energy Corridor, 500 number of Water Mills, 1 Lakh Bio-Gas Plants, etc., with an allocation of Rs. 3762.50 crore for Grid Interactive Renewable Power and Rs. 1036.50 crore for Off-Grid/Distributed/Decentralized Renewable Power.The Committee hope that the Ministry will achieve the targets set for the year 2018-19, unlike the previous years. The Committee, therefore, recommend that the Ministry should analyse its past performance and make all out efforts to achieve the envisaged targets. The Committee may be apprised of the analysis done and lessons learnt from the previous years' performance of the Ministry.

Reply to the Government

Reply:The Ministry is quite optimistic of achieving all its targets during the year2018-19.The progress of achievement is being regularly reviewed at the highest level.The present program wise statusof achievement of targets for the year 2018-19 are given in Annexure-II.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 8)

Wind Energy

The Committee note that the Wind Power Potential in the country at 100 meter above ground level, as assessed by the National Institute of Wind Energy, is 302 GW. Against this, a total capacity of 32848.46 MW has reportedly been installed as on December 31, 2017. The Committee congratulate the Ministry for its performance in the Wind Energy Sector during the years 2015-16 and 2016-17, wherein against the targets of 2400 MW and 4000 MW, Wind Energy capacity of 3423 MW and 5502 MW, respectively, have been achieved. However, the Ministry has not been able to keep up the momentum as its performance in 2017-18 is not up to the mark, i.e. against a target of 4000 MW, only 597.91 MW capacity has been installed (as on January 31, 2018). It means the achievement is even less than 15% of the target. The budget allocated for each of the three years i.e. 2015-16, 2016-17 and 2017-18, has reportedly been fully utilized.

The Committee are informed that, for the year 2018-19, a physical target of 4000

MW has been set with a budgetary allocation of Rs. 750 crore which also includes past liability regarding Generation Based Incentive Scheme. The Committee observe that in 2017-18, the Ministry has managed to achieve only 15 % of the target with full utilization of Budgetary allocation of Rs. 400 crore, so the Committee feel that more funds should be made available for this Sector. Keeping in view the proposed cumulative bid of about 10,000 MW of Wind Power during 2018-19, the Committee recommend that:

i) The Ministry should seriously pursue for more fund allocation so as to ensure that implementation of the Wind Energy Projects does not suffer for want of funds.

ii) The Ministry should make concerted efforts to achieve the physical target of 4000 MW wind energy capacity for the year 2018-19 in a time bound manner.

iii) The Ministry should look into the reasons responsible for non-achievement of the physical target in 2017-18 and take corrective measures for the same. The Committee may be apprised of the reasons and corrective measures taken in this regard.

Reply of the Government

Reply: The budgetary allocation of Rs. 750 Crores was made for the liabilities regarding generation based incentives for wind energy for the year 2018-19, out of which, an amount of Rs. 742.59 Crores has already been disbursed. Presently, the financial incentives, such as CFA or subsidy, are not being given for the wind energy projects, viability of the projects based on market discovered tariff. The fiscal and other incentives such as concessional custom duty, preferential rate of GST, ISTS charge waive off, technical support from National Institute of Wind Energy, etc., are available for wind energy sector.

(ii) The Ministry through SECI has awarded 7239.90 MW capacity of wind power projects and additionally, the projects of 1500 MW capacity have been auctioned through bids from states. These projects are at different stage of implementations and ministry is reviewing their status regularly, in order to ensure the timely commission of the projects and to achieve the physical target of 4000 MW wind energy capacity for the year 2018-19. Further, the states have been apprised to install small wind energy projects, i.e. less than 25 MW, through Feed-in-Tariff (FIT) mechanism.

(iii) : The generation based incentive scheme for wind energy projects ended on 31.03.2017 and subsequently the market of wind energy sector moved from Feed-in-Tariff (FIT) regime to tariff based competitive bidding for setting up of wind power projects. This disrupted the pace of capacity additions of wind energy projects. In order to provide sufficient capacity to the developers, regular bids for wind energy projects are being issued. As on 31.12.2018, the LOI and RFS have been issued for around 9900MW and 500 MW capacities, respectively. The status of bids and implementation of projects is being monitored regularly.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 9)

The Committee note that there are 21 manufactures in Wind Energy Sector who manufacture Single turbine models of upto a capacity of 3 MW and the current annual production capacity of domestic wind turbine industry is around 10,000 MW. The Committee congratulate the Ministry for the fact that indigenization of wind turbine manufacturing has reached up-to 70% and cost of Indian wind turbines is among lowest in the world.

The Committee are informed that the Ministry has been trying to exploit the Off-Shore Wind Resources with a plan to install 5-10 GW of capacity by 2022. The Committee also note with satisfaction that a scheme for installation of Wind-Solar Hybrid Projects is being formulated and first the Wind-Solar Hybrid Park of 160 MW will come up in Andhra Pradesh. The Committee are of the opinion that Wind and Solar are complementary and

hybridizing these two technologies would help in minimizing the variability apart from optimally utilizing the infrastructure, including land and transmission system.

The Committee feel that these new initiatives will diversify the Ministry's resources and work as a cushion against any shortfall in already planned capacity so as to achieve 175 GW of installed Renewable Energy Capacity in time. The Committee, therefore, recommend that:

i) The Ministry should take forward the lead achieved in Wind Energy Manufacturing and strive for maximum indigenization of Wind Turbines Manufacturing.

ii) The Ministry should expeditiously complete the Off-Shore Wind Power Assessment Studies and Surveys related to techno-commercial feasibility and grid infrastructure requirement for Off-Shore Wind Projects.

iii) The Ministry should finalize the Wind–Solar Hybrid Policy as early as possible.

Reply of the Government

Reply (I,II and III) :Ministry has carried out an assessment study to find the extent of local manufacturing in the wind energy sector based on the duty exemption certificates issued to wind turbine and its component manufacturers. It is estimated the current extent of local manufacturing nearly 80%. Ministry is striving to raise this up to 95 % for which preliminary consultation with wind turbine manufacturers has already been done and further consultation with all turbine manufacturers and component/parts/raw material manufacturers engaged in wind sector is planned.

ii):In order to assess the techno commercial feasibility of offshore wind projects, Ministry has already installed/commissioned 1(one) Light Detection and Ranging (LiDAR- a remote sensing device for measurement of wind speed) off the coast of Gujarat in November, 2017 and the data is being collected and analysed. Further, two more LiDARs each, off the coast of Gujrat and 3(three) more LIDARs off the coast of Tamil Nadu, for off shore wind resource assessment along with Geophysical, geotechnical and oceanographic studies in selected zones in Gulf of Khambhat (Gujarat) and Gulf Mannar (Tamil Nadu) have been planned to facilitate installations/commissioning of 1.0 GW off shore wind energy projects each off the coast of Gujarat and Tamil Nadu. Required Budgetary support for the above purpose has been provided to NIWE(National Institute of Wind Energy), Chennai.

iii): The Wind-Solar Hybrid Policy has already been issued by the Ministry on 14.05.2018.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 10)

Solar Energy

The Committee note that according to the planned year wise trajectory of the Ministry to achieve 100 GW of Solar Energy by 2022, there should have been 32,000 MW of installed Solar Capacity by 2017-18, against which, a capacity of 18,454.97 MW has been installed in the country (as on January 31, 2018). The Committee feel that the Ministry have a huge task before them to install remaining 81,545 MW of Solar Energy Capacity in just four years so as to meet the stipulated target of 1,00,000 MW Solar Energy Capacity by 2022, with an average of more than 20,000 MW per year. The Committee are informed that the Ministry has finalized a year-wise trajectory for bidding of Solar Power Projects with planned tenders of 30,000 MW each in 2018-19 and 2019-20.

The Committee observe that for the year 2017-18, against the target of 10,000 MW of Grid-connected Solar Power, the Ministry has been able to achieve only 6166.15 MW (as on January 31, 2018) with utilization of Rs. 951.93 crore i.e. the achievement is about 40 % short of the target. For the year 2018-19, a physical target of 11,000 MW for Grid-connected Solar Power has been planned with an allocation of Rs. 2045.25 crore. The

Committee are also informed that availability of finance is not an issue, as most of the investment is met by the private solar developers and the Ministry has reportedly been playing a facilitator role in respect of major schemes like solar park scheme and VGF schemes.

The Committee find that the Ministry has continuously been missing on its yearly Solar Energy Capacity Addition targets, so the Committee are dissatisfied with the performance of the Ministry in Solar Energy Sector and feel that with such performance, the target of 100 GW will be very hard to achieve. The Committee, therefore, recommend that:

i) The Ministry should work hard so as to achieve the target of 11,000 MW set for the year 2018-19.
ii) The Ministry should play a proactive role in monitoring the progress of various Solar Energy Projects.
iii) The Ministry should also ensure that Solar Energy Projects are not affected due to lack of adequate financial resources.
iv) The Ministry should make sustained efforts to find solutions for the constraints being faced in the commissioning of Solar Projects in consultation with other agencies concerned in a time bound manner.

Reply of the Governement

(i) Ministry holds regular review meetings with SECI, NTPC, different State Governments, Central Transmission Utility(CTU), State Transmission Utility(STU), various solar park developers and solar power developers to resolve the issues and making all out efforts to achieve the target of 11,000 MW set for the year 2018-19.

(ii) Ministry is proactively involved with various stakeholders and monitoring the progress of various Solar Energy Projects in the country so as to achieve the target of NSM.

(iii) Availability of Budgetary financial resources is not a major issue as most of the investment is met by the private solar power developers. Ministry is facilitating development solar projects through various policies and schemes like solar park scheme, VGF scheme etc. Ministry is also facilitating in arranging fund through Word bank, ADB, KfW, and EU etc.

(iv) As mentioned above, Ministry is regularly meeting with various stakeholders to address the constraints being faced in the commissioning of solar projects in a time bound manner.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

Comments of the Committee

(Please see Para No. 11 of Chapter – I of the Report)

(Recommendation No 11)

The Committee note that NISE has estimated a Roof-top SPV potential of 42.8 GW. Accordingly, a target of 40 GW of installed Roof-top Solar Power by 2022 has been set by the Government. The Committee observe that as per the year-wise targets set by the Ministry so as to install 40 GW by 2022, there should have been an installed Roof-top Solar Power (RTS) Capacity of 10,000 MW by 2017-18. But, as on February 06, 2018, only 953 MW of RTS Capacity has reportedly been installed i.e. the achievement is only 9.53 % of the target. The Committee are highly disappointed with the performance of the Ministry in this Sector.

The Committee feel that Roof-top Systems are not remunerative for the consumers due to high maintenance cost and delay in disbursement of subsidy. The Committee are of the opinion that, given the performance of the Ministry in this Sector till date, the Roof-top Solar target of 40 GW by 2022 is unrealistic and it is highly unlikely that this target will be met. The Committee are of the considered view that the Ministry should give this

programme a serious relook, otherwise it will derail the entire National Solar Mission. The Committee, therefore, recommend that:

i) The process of subsidy disbursement should be made simpler and faster. Alternatively, the Ministry may explore the feasibility of the mechanism wherein the consumer will need to pay the cost minus subsidy.

ii) The Ministry should make arrangements so that the cost payable by the consumer may be recovered through monthly installments as people are generally reluctant to invest the whole amount at a time.

iii) Single Window Clearance System should be adopted for approvals like connectivity, net-metering, electricity inspection, limitation in sanctioned load, etc.

iv) TheMinistry should undertake regular review meetings with the implementing agencies.

Reply of the Governement

Reply:The rooftop solar programme is being implemented by State Nodal Agencies and PSUs. In most of the cases the consumer has to pay cost minus subsidy. On completion of the installation and submission of completion report by the vendor the subsidy is released to the vendor through respective SNA/PSU. To make this process simpler Single window clearance portal has been developed by Ministry, where all the process including application, approval, payment, inspection, completion reports, etc., would be online and can be tracked by consumer. Ministry is regularly reviewing the progress made by the implementing agencies in this regard. Innovating financing mechanism for promotion of rooftop solar are also being explored, which includes payment of EMI based on savings achieved through rooftop solar installations.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 12)

The Committee note that there are 1,47,527 units of Solar Pumps installed in the country (as on December 31, 2017) and there is a proposal to install 1.5 lakhs Solar Pumps during the period 2017-20. Further, the Committee are informed that a new initiative 'KUSUM' has been announced in Budget 2018-19 to empower farmers by giving them grid connected Solar Pumps. According to this scheme, the farmers can supply the access power to the grid and earn an additional income. The Scheme includes installation of 10,000 MW of Decentralized Ground Mounted Grid Connected Solar Power Plants of intermediate capacity of 0.5–2 MW, installation of 17.50 lakh standalone Solar Powered Agriculture Pumps of capacity upto 7.5 HP, Solarisation of 10 Lakh Grid-connected Powered Agriculture Pumps with support of upto 5 HP capacity and Solarisation of 50,000 Grid-connected tube-wells/lift irrigation and drinking water projects of upto 50 HP capacity.

The Committee appreciate the Government for its efforts to empower farmers. But, the Committee are concerned that already financially constrained DISCOMs may not be able to pay the farmers for the access power supplied to the grid. The Committee are of the opinion that non-payment of dues by the DISCOMs will further alienate the farmers and will definitely have serious repercussions for the Government. The Committee, therefore, recommend that:

i) The Ministry should formulate some mechanism to ensure payment from DISCOMs to farmers. The Committee would like to know about the details of any such mechanism as early as possible.

ii) The Ministry should also ensure quality, sustainability and maintenance of installed Solar Pumps.

Reply of the Governement

Reply: Under the proposed KUSUM Scheme, in order to ensure payment to farmers the

payment of lease rent would be paid directly by the Discom out of the proceeds to the project developer for renewable power generation. In case of farmer/group of farmers themselves being project developer the payment for renewable power supplied to Discom would be ensured through suitable payment security instruments like letter of credit, escrow arrangements, etc. Further, the payment of performance based incentives to Discoms would be released after ensuring timely payment to farmers by Discoms.Regarding quality, sustainability and maintenance of solar pumps, in the guidelines of the proposed KUSUM scheme, mandatory real time monitoring of the solar pump, at least five year comprehensive maintenance, provision 24X7 help line and service centre, etc., would be included.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

Comments of the Committee
(Please see Para No.13 of Chapter – I of the Report)

(Recommendation No 13)

The Committee note that there is an installed Solar Manufacturing capacity of 3164 MW for Solar Cells and 8398 MW for Solar Modules. The Ministry has submitted that the domestic manufacturers are not competitive at present and they are not able to get enough orders to exploit their entire capacity. The Committee are informed that the reasons for poor domestic manufacturing capacity include lack of integrated set up, high cost of land/electricity, lack of skilled workforce, low capacity utilization, lack of economies of scale, high cost of financing & lack of modern technology resulting in higher cost of production, etc.

The Committee are concerned about the lack of domestic Solar Manufacturing Capacity. The Committee are of the view that it is a necessity for India to support Domestic Solar Manufacturing as over-reliance on a single country puts Indian Solar Sector at a risk of disruption in supply chain. The Committee, therefore, recommend that:

i) The Ministry should urgently formulate a dedicated programme to support Solar Manufacturing in the country.

ii) The Ministry should work to provide Viability Gap Funding (VGF) and low interest rate loans to domestic manufacturers so as to make them competitive.

Reply of the Government

Reply: (i): MNRE has taken following initiatives for incentivising/ promoting domestic solar PV manufacturing:

A. Comprehensive Solar PV manufacturing Policy

MNRE is proposing a comprehensive Scheme to build up manufacturing capacity of solar PV modules, cells, wafers/ ingots and polysilicon in India which, inter-alia, provides following incentives:

Capital subsidy for new capacities/ upgradation of capacity

- Production Subsidy to existing and upcoming manufacturing facility
- Fiscal Incentives in the form of Exemption from Customs Duty on Import of Capital Goods required for setting up solar manufacturing facility

MNRE has clarified that the financial support required from Government for the Scheme proposed by MNRE is substantially lower than that required under M-SIPS scheme of Ministry of Electronics & Information Technology (MeitY).

'In-Principle Approval' for the same is awaited from Department of Expenditure, Ministry of Finance.

B. Solar PV manufacturing facility linked with PPAs for solar PV power plant

MNRE envisages setting up of Solar PV Manufacturing Capacities in India linked with

assured offtake in the form of PPAs for Solar Power Plant.

The manufacturing capacity is proposed to be allotted through transparent competitive bidding wherein, bidding shall be for tariff for the PPAs and capacity allocated to bidder(s) shall be on bucket filling basis.

Under one such tender through Solar Energy Corporation of India Limited (SECI),MNRE had floated a bid of 3 GW of manufacturing capacity linked with 10 GW of PPA. However, only one bid for 600 MW of fully integrated solar PV manufacturing (production of Wafers, cells & modules) linked with 2,000 MW of Solar Power Plants has been received.The same is being examined on whether the same needs to be cancelledor accepted.SECI is planning to bring in new tenders on similar lines after modifying the specifications so as to attract more bidders.

(ii) Under MNRE's "Scheme for setting up of Grid connected Solar PV power projects by CPSUs and Govt. organizations under various Central/State Schemes/Self use/3rd Party sale/Merchant sale with Viability Gap Funding (VGF) under Phase-II of JNNSM", MNRE is providing VGF to CPSUs/ GoIOrganisations who set up solar PV power plants using domestically manufactured solar PV cells and/or modules. This VGF indirectly benefits domestic solar PV manufacturers as they are able to sell their solar cells and modules despite them being costlier than imported solar cells and modules.Indian Renewable Energy Development Agency (IREDA), a Public Limited Government Company established as a Non-Banking Financial Institution, under the administrative control of MNRE extends financial assistance to renewable energy sector. Domestic solar manufacturers can also avail finance from IREDA.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 14)

The Committee are informed that Custom Duty on Solar Cells/Modules/Panels has been levied at the rate of 7.5 %. Further, a Safeguard Duty to the tune of 70 % has been recommended. The Committee feel that because of the imposition of Safeguard/Custom Duty, project developers will suffer, though it may be good for domestic manufacturers. Such a duty will result in steep rise in input cost, thereby affecting the viability of existing projects and dampening investors' sentiments.

The Committee agree that there is a need to encourage domestic manufacturing, but, it is hard to believe that domestic manufacturing will reach to the production and efficiency level required to meet the target of 100 GW of Solar Energy in next 2-3 years. So, in the opinion of the Committee, there are no valid grounds to take such emergency measures which having the potential to cripple the entire Solar Sector. The Committee, therefore, recommend that:

i) Custom Duty on Solar Cells/Modules/Panels should not be levied and they should continue to enjoy exemption from custom duty as before.

ii) Safeguard Duty should not be of the tune that will hamper our own programme and it should not affect the bids which have already taken pace.

Reply of the Governement

Reply: (i) Around September 2017, solar power developers had raised the issue that solar PV panels/ modules which were earlier being classified under Customs Tariff Head (CTH) 8541 at Nil Basic Customs Duty (BCD) are now being classified, at some ports under CTH 8501 at 7.5% BCD. MNRE had taken up this issue with Ministry of Finance and had requested for early resolution of this issue. Ministry of Finance vide their Instruction No. 08/2018-Customs dated 06.04.2018 have further clarified that:

The solar panels or modules equipped with bypass diodes are classifiable in heading

8541.

- The solar panels or modules equipped with blocking diodes are classifiable in heading 8501.
- The solar panels or modules equipped with bypass diodes and blocking diodes are classifiable in heading 8501.

This, issue, thus stand resolved.

(ii):Based on the final findings of DGTR, the Government, through notification no. 01/2018-Customs (SG) dated 30th July, 2018, have imposed Safeguard duty on import of solar cells whether or not assembled in modules or panels, as follows:

Twenty five percent. ad valorem minus anti-dumping duty payable, if any, when imported during the period from 30th July, 2018 to 29th July, 2019 (both days inclusive);

1. Twenty percent. ad valorem minus anti-dumping duty payable, if any, when imported during the period from 30th July, 2019 to 29th January, 2020 (both days inclusive);

2. Fifteen percent. ad valorem minus anti-dumping duty payable, if any, when imported during the period from 30th January, 2020 to 29th July, 2020 (both days inclusive);

Nothing contained in the notification dated 30th July, 2018, mentioned above shall apply to imports of subject goods from countries notified as developing countries vide notification no. 19/2016-Customs (N.T.) dated 5th February, 2016, except China PR, and Malaysia.Ministry of Power (MoP), on 27.08.2018, has already issued directions to Central Electricity Regulatory Commission (CERC) under Section 107 of the Electricity Act, 2003, for allowing pass-through of any change in domestic duties, levies, cess and taxes imposed by Central Government, State Governments/Union Territories or by any Government instrumentality leading to corresponding changes in the cost, after the award of bids, under "Change in Law" unless otherwise provided in the PPA. The said directions by MoP to CERC also include that the order for pass through giving the calculation for per unit impact will be issued within 30 days of filing of petition.

Ministry of New & Renewable Energy (MNRE) has requested Ministry of Power to impress upon the State Governments to issue similar direction to their concerned State Electricity Regulatory Commission (SERCs) under Section 108 of the Electricity Act, 2003.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 15)

<u>Biomass Power and Bagasse Co-generation Programme</u>

The Committee note that the estimated potential for power generation from Biomass/Bagasse Co-generation in the country is 25,860 MW. Against this, a cumulative capacity of 8414 MW has reportedly been installed in the country (as on December 31, 2017). The Committee note that the performance in this sector during the last three years has been discouraging *viz*. in 2015-16 and 2016-17, against the targets of 400 MW each, capacities of 305 MW and 162 MW, respectively, have beenachieved. However, the performance in 2017-18 has somewhat improved i.e. against the target of 340 MW, 253 MW capacity has been installed (upto January, 2018). The amount allocated for the last three years were Rs. 30 crore, Rs. 17 crore and Rs. 9 crore, respectively, which have not been fully utilized.

The Committee observe that for the year 2018-19, a physical target of 300 MW has been fixed with an outlay of Rs. 15 crore and the Committee are informed that the allocation will not be sufficient to achieve the set target and more funds will be demanded at RE stage. That being so, the Committee are concerned that instead of striving to

achieve their stipulated target, the Ministry have continuously reduced it from 400 MW each in 2015-16 and 2016-17 to 340 MW in 2017-18 and further to 300 MW in 2018-19.

The Committee also observe that Biomass Power/Bagasse Cogeneration Sector has been facing problems such as non-signing of PPAs by DISCOMs, lack of working capital and non-availability of biomass which are affecting the progress of the sector. It is also furnished by the Ministry that a large number of Biomass/Bagasse Projects are not doing well. The Committee, therefore, recommend that:

i) The Ministry should strive hard to ensure full achievement of the physical target for the year 2018-19.
ii) More projects on Biomass/Bagasse Co-generation should be encouraged, especially in those States with potential like Karnataka, Maharashtra, Uttar Pradesh, Punjab, Haryana etc.
iii) The technologies used in the sector should be upgraded and improved, keeping in mind the cost effectiveness and viability of the projects.

Reply of the Government

Reply: (I,II and III) The recommendations have been duly noted and the Ministry shall strive hard to achieve the set targets for the current financial year as well. Biomass Power/Cogeneration plants have been mainly installed in the states of Karnataka, Maharashtra, U.P. The Ministry's scheme to promote biomass power/cogeneration projects is open to developers from all over India including the states mentioned above.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 16)

Small Hydro Power

The Committee note that the identified potential for power generation from Small Hydro Projects (upto 25 MW capacity) is around 21,135.24 MW from 7135 identified sites all over the country. Against this estimated potential, a cumulative capacity of 4418.15 MW has been installed, with 754.16 MW under various stages of implementation (as on December 31, 2017). The Committee find the performance of the Ministry in this sector has been decreasing year-on-year. During 2014-15, 2015-16 and 2016-17, against the target of 250 MW, 250 MW and 150 MW respectively, a capacity addition of 251.6 MW, 218.6 MW, and 105.9 MW respectively have been installed and the allocated funds during this period have been fully utilized.

Keeping up with the declining trend, during the year 2017-18, against the target of 100 MW, 73.80 MW could be achieved and against the budgetary allocation of Rs. 123.50 crore, Rs. 95.33 crore have been utilized (upto January, 2018). The Committee observe that for the year 2018-19, the budgetary allocation has been increased to Rs. 218.50 crore with a physical target of 250 MW. The Committee are also apprised that the National Mission on Small Hydro has been dropped. The Committee, therefore, recommend that:

i) The Ministry should formulate new scheme for implementation of Small Hydro Projects on the basis of outcome of the evaluation study on SHP implemented during 12th five year plan so as to revamp the Small Hydro Projects in the country.
ii) Reassessment/confirmation i.e. marking of SHP sites on the ground should be taken up in a time bound manner.
iii) The Government may critically review its performance under the SHP sector and ensure that the factors which hindered the growth of the sector are addressed.
iv) Hydro Projects with the capacity of more than 25 MW should be considered as Renewable Projects.

Reply of the Government

Reply:The Achievement during 2017-18 was 105.95 MW against the target of 100 MW. The Cumulative capacity as on 31.03.2018 was 4485.81 MW at 1097 projects. The Budgetary Allocation during 2017-18 was Rs.123.50 crore which was fully utilized. Over and above the Budgetary Allocation, an amount of Rs. 23.57 crore was also utilized from the EBR available from IREDA Bond Money, taking the total expenditure during 2017-18 to Rs.147.4848 crore.

Point wise response of the Ministry to the recommendations of the Committee is given below:

1. Based on the outcome of the evaluation Study on SHP implemented during the 12th five year plan, a new SHP Scheme has been formulated which on directions of PMO would be evaluated by NITI Aayog.
2. It is a continuous process and it is being modified/re-assessed on a regular basis on the receiving data from States.
3. The recommendation of the Committee have been Noted.
4. Ministry of Power has already mooted a proposal which seeks to declare hydro power (all projects, irrespective of size) as renewable energy.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 17)

Renewable Energy for Rural Applications

The Committee are informed that Renewable Energy for Rural Applications includes the National Bio-Gas and Manure Management Programme (NBMMP) and Bio-Gas based Power Generation (0ff-Grid) Programme. The Committee observe that from the year 2014-15 to 2017-18, allocation for this Sector has been considerably reduced and the Ministry has consistently failed to achieve its financial and physical targets. During the year 2017-18, against the Financial Allocation (RE) of Rs. 94 crore, only Rs. 44.58 crore (47.42%) have been utilized and against the physical target of 65,180 Bio-Gas Plants, the Ministry has been able to set up only 22,000 such plants (~34%). The Committee feel that the performance of the Ministry is discouraging in this sector. The Committee are informed that the non-achievement of Bio-Gas target is due to drought conditions during the years 2014-15 and 2015-16, high upfront cost of biogas plants, reduced subsidy support, lack of priority at state level, impact of Ujjawala Scheme, low publicity of the programme by the implementing agencies, etc.

The Committee note that for the year 2018-19, a budgetary allocation of Rs. 135 crore has been made for Bio-Gas under Off-Grid Renewable Power with physical target of 1 lakh Bio-Gas Plants. It has been submitted that the Budgetary allocation of 2018-19 in respect of Off-Grid/Distributed and Decentralized Renewable Power includes Biogas as Biogas has been merged under Off-Grid/Distributed and Decentralized Renewable Power.The Committee are of the view that apart from electricity generation, Bio-Gas Plants help millions of rural folk by meeting their cooking and other energy requirements. The Committee, therefore, recommend that:

i) The Ministry should focus on the feasibility, affordability and availability of the new technologies for the rural areas so as to provide for enhanced economic activities at village level ultimately improving the standard of living in remote areas of the country.

ii) The Ministry should strive hard to achieve their physical targets so as to provide clean energy solutions to the rural poor specially women and children through reduced consumption of fuel wood.

Reply of the Government

Reply:During the year 2017-18, against the financial allocation (RE) of Rs.93.50 crore, Rs. 67.70 crore (72.40 %) have been utilized for setting up of family type household biogas plants under the National Biogas and Manure Management Programme (NBMMP) and Biogas based Power Generation (Off-Grid) Programme (BPGP) including thermal energy applications.

Under the NBMMP, against a physical target of setting up 65180 biogas plants during the year 2017-18, more than 41322 biogas plants (63 %) have been installed. The Ministry would continuously promote affordable, feasible and innovative low cost biogas technologies for rural areas. In order to achieve the envisaged target of 1 lakh biogas plants and setting up a total installed minimum biogas generation capacity of 3 lakh cubic metre per day during 2018-19, the implementation strategies have been revised to scale up the installations of Biogas Plants.

Further, the Ministry is implementing off-grid/distributed and decentralized renewable energy program for solar and biogas with an objective of meeting lighting, motive power and alternate clean cooking fuel needs of the semi-urban and rural areas of the country.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

Comments of the Committee
(Please see Para No. 16 of Chapter – I of the Report)

(Recommendation No 18)

Renewable Energy for Urban, Industrial and Commercial Applications

The Committee note that the programmes under the head 'Renewable Energy for Urban, Industrial and Commercial Applications' include Energy efficient Solar/Green Buildings Programme; Energy from Urban, Industrial and Agricultural Waste and Bio-Energy and Cogeneration in Industry. On scrutiny of the data provided for Waste to Energy Programme, the Committee observe that the target during the last two years i.e. 2016-17 and 2017-18, was 25 MW each, against which 13.07 MW and 7.62 MW respectively, have been achieved. Further, against the financial allocation of Rs. 25.50 crore and Rs. 28.50 crore, Rs. 7.32 crore and Rs. 13.21 crore respectively were utilized during the same period. The Committee find that performance in Waste to Energy Sector is not up to the mark, both in financial as well as physical terms.

The Committee are informed that the Ministry supported 180 waste-to-energy plants based on Municipal Solid Waste (MSW), Urban, Industrial and agricultural waste/residues for generation of power, biogas and bio-CNG. But, these Plants, reportedly, are not doing well in terms of viability and profitability, due to various reasons. The Committee note that for 2018-19, a budgetary allocation of Rs. 22 crore with a physical target of 20 MW has been assigned for Waste to Energy Programme. The Committee have been apprised that 30 new projects with a cumulative capacity of about 40 MWeq have already been sanctioned and these projects are expected to be installed and commissioned during the year 2018-19. The Ministry has assured the Committee that the target set for 2018-19 would be fully achieved. The Committee, therefore, recommend that:

i) In view of the importance of waste to energy programme, there should be an integrated strategy to manage all activities under this programme so as to avoid delay in obtaining statutory clearances/ approvals from various agencies.

ii) The Ministry should encourage States/Municipal Corporations and other stakeholders to develop suitable proposals for recovery of Energy from Urban, Industrial and Agricultural Wastes.

Reply of the Government

Reply: The recommendations of the committee have been noted for compliance. Due to delay in continuation of Waste to Energy programme, less funds were demanded. Since, the programme has been since continued, the Government is actively soliciting more proposals under Waste to Energy programme from all stakeholders such as, pollution control boards, industry associations etc.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 19)

Research, Design, Demonstration and Development in Renewable Energy Sector

The Committee note that Budgetary Allocation under RDD&D for the years 2016-17 and 2017-18 were reduced at RE stage i.e. in 2016-17, BE of Rs. 445 crore was reduced to Rs. 272.85 crore at RE and in 2017-18, BE of Rs. 144 crore was reduced to Rs. 81 crore at RE stage. It is found that even the reduced amount could not be fully utilized. Regarding the major programmes/research activities undertaken during the last three years, the Committee are informed that RD&D is being supported in the field of Solar Photovoltaic, Solar Thermal, Hydrogen fuel Cells and Wind-Solar Hybrid Systems. The Committee note that an amount of Rs. 94.00 crore has been allocated under RDD&D for the year 2018-19. The Committee are informed that during the year 2018-19, thrust will be on development of solar thermal technology, improving Si PV efficiency, storage solutions, development of efficient and cost effective designs of biogas plants, off-shore technology and wind solar hybrid system, pumped storage systems, technology for storage and development of efficient and cost effective fuel cells, etc. The Committee, therefore recommend that:

i) The Ministry should focus on maximum utilization of allocated funds so that Research, Design, Demonstration and Development in Renewable Energy Sector do not suffer due to low utilization of sanctioned amount.
ii) The Ministry should ensure a coordinated approach for successful collaboration among the technological and R&D institutions and industry to achieve the goal of renewable energy technology development.
iii) The Ministry should also ensure constant monitoring of all the R&D projects with a view to evaluating their functioning in a cost effective and result-oriented manner.

Reply of the Government

Reply (I, II & III): The suggestion of the Committee has been noted. Research, Development and Demonstration (RD&D) Scheme of MNRE with budget of rs.500 crore for continuation in the current three year plan period 2017-18 to 2019-2020 mainly focused on development & deployment of advanced technologies in re sector. Technology Development innovation policy (TDIP) which the Ministry intends to implement in furtherance of its RD&D efforts for promoting indigenous technology development and manufacture in renewable energy sector. The TDIP targets for development of a robust ecosystem for supporting, reviewing, appraisal and monitoring of RD&D Projects in Renewable Energy sector.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 20)

PSUs/Institutions under the Ministry

The Committee are informed that to support the Ministry, there are five PSUs/Institutions - Indian Renewable Energy Development Agency (IREDA), Solar Energy Corporation of India (SECI), National Institute of Solar Energy (NISE), National Institute of Wind Energy (NIWE), and National Institute of Bio Energy (NIBE). The Committee note that NISE serves as the technical focal point for Solar Energy Research & Development, NIWE serves as the technical focal point for Wind Power Research & Development, NIBE focuses on Research & Development in Bio Energy, SECI assists the Ministry and functions as the implementing and executing arm for the Jawaharlal Nehru National Solar Mission and IREDA provides term-loans for Renewable Energy and Energy Efficiency Projects. The Committee note that the Ministry has not given exhaustive data regarding financial allocation vis-à-vis utilization, physical targets vis-à-vis achievements, etc. with respect to these PSUs/Institutions. The Committee, therefore, recommend that the Ministry should furnish the relevant data w.r.t. these Institutions/PSUs as soon as possible. Based on the scanty data provided, the Committee have made some observations about the performance of these PSUs/Institutions in the succeeding paragraphs.

Reply of the Government

Reply:To support the Ministry there are five institutions [two public sector undertakings - Indian Renewable Energy Development Agency (IREDA) andSolar 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)]. NISE is located at GwalPahari in district Gurugram, Haryana and serves as the technical focal point for solar energy development. NIWE has been established in Chennai, Tamil Nadu and serve as the technical focal point for wind power development. NIBE in district Kapurthala, Punjab and is focusing on research in Bio energy. IREDA, a Non-Banking Financial Institution under the administrative control of this Ministry, provides term-loans for renewable energy and energy efficiency projects. SECI is a section 3 company under the Companies Act situated in New Delhi. It assist the Ministry and Function as the implementing and executing arm of the Jawaharlal Nehru National Solar Mission. Details of the Major physical and financial achievements made during the last three years by the institutions are given in Annexure-III.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 21)

After scrutiny of the data provided, the Committee feel that the performance of IREDA has been good as it has outperformed on most of the parameters except on NPA related parameter. Its MoU Rating as “Excellent” speaks for itself. The Committee, therefore recommend that IREDA should work towards reducing its NPA in accordance with the target set.

Reply of the Government

Reply: (I,II and III): The suggestion of the Committee has beendullynoted.

IREDA’s projects have inherent technological and other risks. To ensure a close monitoring of the recovery of debts , a dedicate recovery cell has been created and they are continuously following up the recovering proceedings :

a) Recovery action against Non-Performing Assets (NPAs)is focused through follow up meetings with the borrowers ,

b) TRA Monitoring,
c) Action under the SARFAESI Act 2002,
d) Recovery through Debt Recovery Tribunal (DRT) etc.
e) One-Time Settlement (OTS),
f) Restructuring of loans on case to case basis ,
g) Actions under the National Company Law Tribunal (NCLT)
h) Exploring possibilities of change in management , wherein the NPA assets are transferred to running projects etc .

Also the appraisal process has been strengthened and the due diligence process has been tightened so as to arrest the occurrence of NPA in future. IREDA gets the external credit rating for all grid connected projects and also the internal credit rating is done. The interest rates and security matix is finalized depending on the rating of the project and creditworthiness of the client. None the less, the recovery from NPAs is always a focus area and all efforts are put on to recover the dues from NPAs.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 22)

The Committee note that SECI, during the year 2017-18, has issued tenders of 3975 MW of Solar Ground Mounted Projects and 5000 MW of Wind Energy Projects and during the same year, a capacity of 830 MW of Solar Ground Mounted Projects has actually been commissioned. The Committee note that SECI received Rs. 92 crore, 100 crore and 50 crore during 2015-16, 2016-17 and 2017-18 respectively. However, data related to fund utilization during the same period, has not been furnished. It has been submitted that for the year 2018-19, SECI has not sought any equity support from the Ministry as the new projects to be undertaken in the year 2018-19 will be carried out from its internal resources. SECI has a target to issue tenders for 18,000 MW of Solar Projects and 10,000 MW of Wind Projects and Award placement for 160 MW of Solar-Wind Hybrid Project, during 2018-19, which according to the Committee is substantially high as compared to the achievement of previous year. The Committee, therefore, recommend that:

i) Being the implementing and executing arm for the National Solar Mission, SECI should make more efforts towards achieving its targets as it has really huge targets to achieve.
ii) SECI should furnish data related to its physical and financial performance to this Committee on regular basis.

Reply of the Government

Reply: (i) SECI has awarded projects for 1500 MW capacity (solar ground mounted) and 4050 MW capacity (Wind) in 2017-18.
For Solar power, normally around 13 months is required for commissioning. The projects commissioned in 2017-18 pertain to capacities awarded in previous years. Commissioning of projects havebeen delayed due to implementation of GST, land and connectivity related issues etc. that are beyond the control of SECI as well as SPDs. The projects awarded in 2017-18 are in various stages of implementation and are likely to get commissioned in 2018-19.For Wind power, generally the projects require 18 months for commissioning. Therefore, the projects awarded in 2017-18 are likely to get commissioned in 2018-19 and 2019-20.
(ii) Physical and financial performance ofSECI as on 2017-18 is at Annexure-III (II) .

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 23)

The Committee note that major achievements of NISE during the last three years include establishment of inverter test laboratory, creation of automatic water pumping testing facility, creation of Concentrating Solar Technologies (CST) test facility, development of solar powered Drinking RO system based Water ATM, development of Solar Milk Chilling Plant, implementation of Suryamitra Skill Development programme, etc. The Committee observe that NISE has not been able to fully utilize the allocated amount, especially during 2014-15 and 2016-17. Fund allocation/utilization data for 2017-18, have not been furnished. The Committee also note that for 2018-19, an amount of Rs. 18.00 Crore has been allocated to the NISE. The Committee are informed that if all the activities planned are taken up, the allocated funds will not be sufficient. The Committee, therefore, recommend that:

i) More funds should be provided to NISE so that its proposed activities/projects may be carried out as planned.
ii) NISE should take up research projects for increasing the efficiency of Solar Cells and development of storage system.
iii) NISE should furnish data related to its physical and financial performance to this Committee, on regular basis.

Reply of the Government

Reply:The details regarding budget provision and expenditure incurred during the years 2014-15 to 2017-18 are as under:

Financial Year	B.E.	R.E.	Expenditure
2014-15	34.43	34.43	19.42
2015-16	17.15	14.34	17.29
2016-17	20.00	7.00	13.71
2017-18	20.00	20.00	15.63
2018-19	18.00	18.00	13.08 (Upto 31.12.2018)

(ii) NISE has already taken up a project entitled “Development of High Efficiency (21%/19%) PERC Type of Mono Crystalline/Multi Crystalline Solar Cell” jointly with BHEL to increase the efficiency of solar cell. This is a fully funded project by MNRE. More projects will be taken up by NISE for increasing the efficiency of Solar Cells.
NISE is developing a Centre of Excellence for Energy Storage.
(iii) Few major activities taken by NISE are as follows:
(i) Testing and Certification Labs:
During FY 2017–2018, NISE conducted 1342 nos. tests including solar pump(81nos.), inverters (46 nos.), modules(958 nos.), led lights (144 nos.),
battery(84 nos.), calibration (17 nos.), solar cell (08 nos.), solar thermal Systems(03 nos.) and (mobile solar plant pump cum generator 01no.). A revenue of Rs.3.02 Crore was generated from these testings’.

(ii) Consultancy Services:
NISE has started consultancy services in the field of solar energy and a revenue of Rs. 24.5 Lacs was generated during 2017-18.

(iii) New Initiatives/Development of solar systems:
Following solar systems were developed and the patent applications have been filed for:

- Solar Milk Chilling system and Solar Cold Storage.

- Solar Drying cum Space Heating system.
- Solar PV based Indoor Cooking system using PCM.
- Solar Thermal based outdoor cooking system using PCM.

- Patent for Production of diesel from Biomass, IIP is in the process of filing the joint Patent with NISE and IIP.

(iv) Skill Development:

- So far, 17,106 'Suryamitras' have been trained till 31st March 2018 besides, 577 international participants from 92 countries have been provided trainings on various aspects of solar technologies.

- A six months "Advanced Solar Professionals Course" (self-sustaining basis) has been started since 6th February 2018 at NISE.

- NISE is organising 11 types of trainings in which 1700 persons were imparted trainings during 2017-18. NISE has earned a revenue of Rs.1.91 Crore during 2017-18 from these trainings.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 24)

The Committee note that major activities at NIWE during the last few years include on-shore Wind and Solar Resource Assessment, Offshore Wind Assessment, trainings on Wind Energy Tech & Applications, testing of Wind Turbines, etc. The Committee find that fund utilization by NIWE, during the last few years i.e. 2014-15, 2015-16 and 2016-17 has been poor. The Committee are informed that for the year 2018-19, a sum of Rs. 20 crores has been approved and additional fund will be sought during RE stage. The Committee, therefore, recommend that:

i) NIWE should take corrective steps for alleviation of reasons responsible for low utilization of allocated funds, so as to achieve the projected targets with proper and exhaustive utilization of fund allocated.

ii) The Committee should be apprised of corrective steps taken in this regard.

Reply of the Government

Reply: (I&II): The low utilization of allocated funds was due to the activities relating to the offshore wind generation, such as Geo-technical study of Offshore, Geo-Technical and Geo-Physical Survey, which is being carried out for the first time in the country and preparation of necessary technical documentation took up considerable time. Further, low utilization of fund was due to less expenditure made by NIWE on account of lower response to their tenders floated for the procurement equipment in order to develop the testing facility for active power control, reactive control, frequency response and other grid requirements in Wind Turbines, LVRT, etc. The process for the procurement has been

expedited and efforts are being made by NIWE to expedite the above work, and to utilize the funds during 2018-19. Further, the Ministry has advised NIWE to avoid procedural delays in future and the expenditure of NIWE is regularly being monitored by this Ministry.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

(Recommendation No 25)

The Committee note that the activities/projects undertaken by NIBE during the last few years include development of facilities for R&D in bio-fuel, biogas and cook stove, downstream processing of bio-fuel (ethanol, biodiesel, green diesel, bio-petrol, butanol etc.) as partial substitute of petroleum, biomass resource assessment, skill development programmes, project on hydro-processing of non-edible vegetable oil, project on 'Bio-refining of sugarcane bagasse, etc. The Committee observe that the financial allocation to NIBE has been fluctuating i.e. for 2015-16, the Institution was given Rs. 5.60 crore, there was no allocation for 2016-17 and Rs. 2 crore were provided for 2017-18. Reasons for such fluctuation and data related to year-wise utilization of the sanctioned amount have not been furnished. The Committee are informed that for 2018-19, the budget allocation is Rs. 3 crore. The Committee, therefore, recommend that:

i) NIBE should work towards making Bio-Gas/Bagasse Power Plants sustainable and viable through appropriate technological development.
ii) Data related to year-wise utilization of the sanctioned fund should be furnished to the Committee at the earliest.

Reply of the Government

Reply:The suggestion of the Committee has been noted.The mandate of NIBE covers entire activities of bio-energy sector such as biogas, bagasse power, biomethation, biomass cookstoves, biofuels and solid waste. At present, the activities are limited to few areas only because of manpower shortage. The Ministry has been pursuing with Department of Expenditure for continuation of 26 sanctioned posts so that the activities of bio-energy sector can be taken in tandem with the activities of the Ministry. It is envisaged that the recruitment will be completed in the current calendar year, so that the R&D activities in the various areas of bio sector can be taken up in the large scale, thus, converting NIBE as focal point for renewable energy programmes related to bio-energy sector in the country.

Ministry of New & Renewable Energy
OM.No.151/02/2018-P&C Dated: 00/00/2018]

Annexure-I

Details of Projects Sanctioned Under NCEF Funding for Renewable Energy

S.N0.	Ministry/ Depatrment	Name of the Projects
F. Y. 2011-12		
1	**MNRE**	Solar Water heater
2	**MNRE**	SPV System in 6 States
3	**MNRE**	Refinanciag through NABARD
4	**MNRE**	Bihar SaurkrantSichaiyojna (Pilot Project)
5	**MNRE**	Funding for Off- grid SPV systems to be installed under JNNSM in 9 villages of North 24 Praragana
		Total
F.Y. 2012-13		
6	**MNRE**	Installation of SPV power plants up to size of 500kWp with aggregate capacity of 50 MWp
7	**MNRE**	Financial Support for extending subsidy- for installation of Solar Photovoltaic lights and small capacity systems through NARARD
8	**MNRE**	Installation of Solar Photovoltaic Power Plants aggregating to 4 MWp capacity at different Indian Railway Locations
9	**MNRE**	Pilot grid connected Solar Thermal Power Projects under JNNSM
10	**MNRE**	Viability Gap Funding for setting up 750 MW Grid connected Solar PV Power projects under JNNSM
		Total
FY.2013-14		
11	**MNRE**	Installation of Solar Water Heating System, 20,000 Home Lighting System (model 2) and 2,000 Solar Street Lights through NHB
12	**MNRE**	Market Development of medium and high Temperature Concentrated Solar Technology (CSTs) for community cooking, process heat and cooling applications
13	**MNRE**	Localization of Solar Energy through Local Assembly, Sale and Usage of 1 Million Solar Study Lamps
14	**MNRE**	Installation of 23,500 Nos. SPV Power Plants of 1 KWp capacity each for Domestic household in Rajasthan, Andhra Pradesh, Kerala, Tamilnadu, Chhattisgarh and other selected states.
15	**MNRE**	Financial Support for extending subsidy- for installation of Solar Photovoltaic lights and small capacity systems through NABARD, RRB's, Nationalised banks and Cooperative banks under Jawaharlal Nehru National Solar Mission (JNNSM).
16	**MNRE**	Financial Support for extending subsidy- for installation of Solar Photovoltaic lights and small capacity systems through Solar Energy Corporation of India implementing through commercial Banks under Jawaharlal Nehru National Solar Mission (JNNSM)
17	**MNRE**	5x100 KWp SPV Power Plants from Deogarh to Basukinathalongwith 2500 Nos. LED Street Lights
18	**MNRE**	Installation of 17,500 SPV water Pumping System in Rajasthan, Tamilnadu, Andhra Pradesh, Uttar Pradesh, Bihar and other selected states to meet the irrigation requirements
19	**MNRE**	Installation of Solar Water Heating Systems with cumulative collector area of 4,00,000 Sq. m. for institutional and industrial sector in the different states of the country.
20	**MNRE**	Installation of Grid Connected Rooftop Solar Photovoltaic Power Plans with aggregate 50 MWP capacity in various states across the country on pilot basis
21	**MNRE**	National Clean Energy Fund (NCEF)-Indian Renewable Energy Development Agency (IREDA) concessional funding support for Renewable Energy
		Total

FY.2014-15		
22	**MNRE**	52 MWp Grid Connected Rooftop SPV Plants through Multi Govt. Agencies
23	**MNRE**	54 MWp Grid Connected Rooftop SPV Power Plants through State Nodal agencies
24	**MNRE**	Installation of 5 lakh sq.m. collector area Solar Water Heating System in Domestic & Building Sector
25	**MNRE**	Setting up 1000 MW of Grid-connected Solar PV Power Projects by Establishments of Ministry of Defence
26		25 MWp SPV Plan through SNA's and channel partners
27	**MNRE**	Generation Based Incentive (GBI) for grid connected wind power projects
28	**MNRE**	Installation of 8,500 SPV water Pumping System
29	**MNRE**	73 MWp Grid Connected Rooftop SPV Power Plants in the Warehouses through Solar Energy Corporation of India (SECI)
30	**MNRE**	Setting up 1000 MW of Grid-connected Solar PV Power Project by CPSUs
31	**MNRE**	Revised proposal for NCEF funding of 960 crore for pilot grid connected solar thermal projects
32	**MNRE**	IREDA to on lend to viable RE projects under NCEF
33	**MNRE**	Intra-State Transmission System for Renewable Power Evacuation in Rajasthan
34	**MNRE**	Intra-State Transmission System for Renewable Power Evacuation in Tamil Nadu
35	**MNRE**	Installation of solar power generator above 3 Wp up to size of 100 kWp (with or without battery) with aggregate capacity of 25 MWp through SNA's and channel partners
36	**MNRE**	Solar Electrification of 1000 villages under JNNSM
37	**MNRE**	Provision of solar power in border areas
38	**MNRE**	Setting up of 1000 MW of grid connected solar PV power projects with Viability Gap Funding under Jawaharlal Nehru National Solar Mission (JNNSM
		Total
FY. 2015-16 (till date)		
39	**MNRE**	InSTS for Renewable Power Evacuation in Rajasthan (Green energy Corridor)
40	**MNRE**	InSTS for Renewable Power Evacuation in Andhra Pradesh (Green energy Corridor)
41	**MNRE**	InSTS for Renewable Power Evacuation in Himachal Pradesh (Green energy Corridor)
42	**MNRE**	InSTS for Renewable Power Evacuation in Gujarat (Green energy Corridor)
43	**MNRE**	InSTS for Renewable Power Evacuation in Karnataka (Green energy Corridor)
44	**MNRE**	InSTS for Renewable Power Evacuation in Madhya Pradesh (Green energy Corridor)
45	**MNRE**	InSTS for Renewable Power Evacuation in Maharashtra (Green energy Corridor)
46	**MNRE**	Setting-up of 5000 MW of Grid Connected Solar PV Power Projects with VGF under Batch-IV of Phase-II of JNNSM
47	**MNRE**	Grid Connected Rooftop and Small Solar Power Plants Programme (40000 MW)
48	**MNRE**	Decentralised Generation of Renewable Energy {with special emphasis on Unemployed Youths and Village Panchayats (10000 MW)}
	Total	
		GRAND TOTAL

* Apart from the above, Rs. 25 crores (Rs. 1 cr in 2013-14 and Rs. 24 cr in 2014-15 has been released from NCEEF to MNRE towards Joint Indo-US "PACESetter Fund". The Fund will be used to provide grants for seed capital for clean energy projects. The Funds' priority will be for demonstration of the viability of off-grid renewable energy businesses or technologies. The fund will be part of the "Promoting Energy Access through Clean Energy (PEACE)" initiative.

**55 No. of projects has been

recommended for funding by the Inter Ministerial Group (IMG) under NCEEF which includes 48 no. of projects of MNRE, 5 no. of projects of Ministry of Environment, Forest and Climate Change and 2 no. of projects of Ministry of Power.

Annexure-II

Programme/Scheme wise Physical Progress in 2018-19 & Cumulative upto Nov, 2018

Sector	FY- 2018-19	
	Target	**Achievements (April-Nov 2018)**
I. GRID-INTERACTIVE POWER (CAPACITIES IN MWp)		
Wind Power	4000.00	871.85
Solar Power	11000.00	2915.91
Small Hydro Power	250.00	24.65
Bio-Power	352.00	373.30
Total	**15602.00**	**4185.71**
II. OFF-GRID/ CAPTIVE POWER (CAPACITIES IN $MW_{EQ)}$		
Waste to Energy	18.00	4.79
Biomass Gasifiers	1.00	0.00
SPV Systems	200.00	132.66
Total	**220.00**	**137.45**

**As the program is not being implemented during the year 2018-19, an achievement of 110 No. of Water Mills have been reported in the current year, taking the cumulative to around 2800 no. of Water mills till date.*

*** An Achievement of 1600 ckm have been added under Green Energy Corridor Project in the year 2018-19, taking the cumulative Achievement to 2800 ckm till date.*

**** In 2018-19, an achievement of 6985 No. of family type biogas plants have been reported, taking the cumulative capacity to 50.15 lakh No. of family type biogas in the country as on 31.12.2018.*

****

Annexure-III

The financial and physical achievements of Public Sector units and Autonomous bodies under the aegis of MNRE

I: Indian Renewable Energy Development Agency (IREDA)

IREDA, a Non-Banking Financial Institution under the administrative control of this Ministry, provides term-loans for renewable energy and energy efficiency projects. Indian Renewable Energy Development Agency(IREDA) is a Mini Ratna PSU, it has received no equity contribution in the last 3 years and as such no release and utilization of the same in the last 3 years .

The major achievements during the last three years are as under :

(Rs. in Crs.)

Sl No	Particulars	31.03.2016	31.03.2017	31.03.18
1	Sanctions	7,806.46	10,199.01	12,130.01
2	Disbursement	4,257.39	6,593.49	8328.38
3	Net Outstanding Loan	10,201.69	13,336.75	15,471.60
4	Paid Up Capital	784.60	784.60	784.60
5	Domestic Borrowings	4,451.57	5,177.22	5,097.83
6	International Borrowings	5,552.88	7,871.61	9,862.58
7	Profit before Tax	417.62	528.18	560.75
8	Profit after Tax	298.04	365.02	393.20

II.Solar Energy Corporation of India Ltd.

Solar EnergyCorporation of India Ltd. “SECI” is a Section- 3 Company under the Companies Act, 2013, with 100 percent Government ownership, under the administrative control of MNRE.

SECI undertakes activities in various business segments in solar and Wind energy sector, such as implementation of Government of India schemes- including schemes for ground-based and rooftop projects, wind and Solar- wind hybrid projects, solar parks, special schemes etc., project development- including own projects as well as for other government and PSUs, decentralized solar systems such as solar streetlights, home

lighting systems, solar lanterns etc. and projects in innovative technologies.

PERFORMANCE HIGHLIGHTS

The Performance Highlights of the company for the financial year 2017-18 are mentioned hereunder with comparative position of the previous year's performance:

Amount (Rs. in lakhs)

Particulars	**For the Financial Year Ended 31st March, 2018**	**For the Financial Year Ended 31st March, 2017**
Share capital	35,400.00	30,400.00
Net Worth	43,684.48	36,830.89
Total Revenue	1,17,591.15	79,814.97
Profit/(Loss) Before Tax	10,173.61	7,277.79
Profit/(Loss) After Tax	6,472.29	4,650.21

Financial Performance

i. The total income of the company by way of Trading of Power, Project Monitoring Commission, Sale of Power of own Project and other income is ₹ 1,17,591.15 Lakhs as against corresponding previous year of ₹ 79,814.97 Lakhs registering an increase of 47.33 %.

ii. The Profit before tax for the F.Y 2017-18 is ₹ 10,173.61 Lakhs as against the previous year of ₹ 7,277.79 Lakhs and profit after tax (PAT) is ₹ 6,472.29 Lakhs as against the previous year of ₹ 4,650.21 Lakhs. Thus, registering an increase in PBT and PAT of 39.79 % & 39.18 % respectively

iii. The Net worth of the company stood at ₹ 43,684.48 Lakhs as against previous year of ₹ 36,830.89 Lakhs registering an increase of 18.61 %.

Dividend

In accordance with Department of Investment & Public Asset Management (DIPAM) guidelines dated 27th May,2016, the company is required to pay either 5 % of the Net worth of the company as on 31.03.18 or 30 % of Profit after Tax (PAT) for the year 2017-18, whichever is higher. Accordingly, a dividend of 5 % of the Net worth, which works out to ₹ 2,184.22 Lakhs & Dividend Tax thereon of ₹ 444.64 Lakhs is proposed to be paid for the Financial Year 2017-18. The company earlier has paid Interim Dividend

of ₹ 68.99 per share, aggregating to ₹ 2,442.30 Lakhs and Corporate Dividend Tax of ₹ 497.17 Lakhs (including shortfall of dividend of ₹ 442.30 Lakhs and corporate dividend tax of ₹ 90.03 lakhs thereon for the year ended 31st March 2017). The company further proposes to pay Final Dividend of ₹ 5.20 per share, aggregating to ₹ 184.22 lakhs for the year ended 31st March 2018 and corporate dividend tax of ₹ 37.50 Lakhs thereon, payable subject to the approval of shareholders in the Annual General Meeting.

Share capital

The issued and paid up capital of the Company as on March 31st, 2018 is 35,40,000 equity shares of Rs 1,000/ each against authorized share capital of Rs 2,000 Crores comprising of 2,00,00,000 shares of Rs.1,000 each. During the Financial year 2017-18, company has allotted 5,00,000 shares to the President of India. The President of India holds 100% of the paid up equity share capital of the company.

Fund and Non fund based facility

The Company has been sanctioned non-fund based facility of Rs 50 Crore each from HDFC Bank and ICICI Bank. The limit sanctioned by HDFC Bank is against hypothecation of all present and future receivables. During the year, the Company has not borrowed any loan and there is no outstanding debt in its Books.

IMPLEMENTATION OF SCHEMES FOR SOLAR PROJECTS UNDER NATIONAL SOLAR MISSION

SECI is the designated implementing agency for Viability Gap Funding (VGF) schemes for development of solar power projects under the National Solar Mission (NSM). After notification of Standard Bidding guidelines, SECI has been implementing solar projects through tariff-based bidding mechanism.

Under the first batch of VGF scheme (NSM Phase-II, Batch-I), 680 MW capacity of projects were commissioned upto FY 2016-17, across seven states. In the next batches of VGF scheme (NSM Phase-II, Batches-III, IV), 2410 MW and 3875 MW of capacities have been tendered out and PPAs have been signed for 2295 MW and 2470 MW respectively.

Under these schemes, SECI issues tenders for development of large-scale solar power projects on Build-Own-Operate (BOO) basis, either in identified solar parks or in locations to be chosen by SPD, as per suitability. The SPDs are selected through an open,

transparent electronic competitive bidding mechanism, followed by electronic reverse auction on VGF/tariff sought, and are issued Letters of Award (LoA) for the project capacities won by them, with a commissioning schedule of 12 – 13 months from date of signing of PPA.

Thereafter, 25-year power sale agreements (PSAs) and Power Purchase agreements (PPAs) are signed by SECI, as a power trading intermediary, with the identified power distribution companies (Discoms) and the selected developers.

Overall, tenders have been issued for cumulative capacity of 13105 MW under these schemes/tenders, for Maharashtra, Karnataka, Andhra Pradesh, Gujarat, Chhattisgarh, Rajasthan, Uttar Pradesh etc. Out of the tendered capacity, 8865 MW capacity has been awarded and 3455 MW capacity has been commissioned (till 31.08.2018).

Under the tenders floated by SECI, the lowest ever solar power tariffs of Rs. 2.44/kWh have discovered in May, 2017, in the tender for Bhadla Solar park in Rajasthan.

Grid Connected Roof-top Scheme

SECI is one of the implementation agencies of the schemes for setting up of rooftop solar projects in India and is currently playing a pivotal role in development of this high potential solar roof-top PV segment, through aggregation of demand, standardized RfS documents and through creation of conducive environment for popularizing rooftop solar projects across all consumer segments, aiding in streamlining of policy and regulatory frameworks, simplifying processes towards 'Ease of doing Business', capacity building initiatives through conferences / workshops etc., and encouraging new entrepreneurs/ micro and small enterprises (SMEs) to enter into this segment. Also, SECI is working towards the creation of a robust monitoring /verification/inspection protocol for large number of decentralized rooftop solar projects through technological/IT interventions.

During the Financial Year 2017-18, SECI has implemented various schemes involving both the CAPEX and RESCO Models. The year has been remarkable in terms of achievement in the rooftop segment as detailed below:

SECI launched India's largest rooftop tender of 500 MWp capacity rooftop Tender (with 30% subsidy for general category States and 70% subsidy for special category States) in the previous financial year (2016-17). Against the above, letters of award (LoA) were issued for a capacity of 292 MWp. The scheme covered implementation of rooftop

systems in Social, Residential, and Institutional sector. The total capacity commissioned as of 31.03.2018 is around 100 MW. The scheme implementation time has ended on 30.06.2018 and scheme is under closure (as on 31.08.2018).

SECI has also launched 500 MW grid connected rooftop tender (with 25% incentive for general category States and 60% subsidy for special category States) under the "Achievement Linked Incentive Scheme" of MNRE for buildings in Government Ministries, Departments, Central and State and the scheme is in the process of implementation. As of 31.03.2018, about 15 MW capacity was sanctioned and more capacities are under implementation.

Overall, under the rooftop schemes, SECI has successfully commissioned about 100 MW capacity during the year in 2300 numbers of projects across the country.

Solar Parks Scheme

The concept of Solar Parks, where pre-developed infrastructure for development of solar projects is made available to project developers, was brought with the view to accelerate India's capacity addition in solar power. MNRE launched a scheme for facilitating development of solar parks for 20,000 MW of project capacity, and designated SECI as the nodal agency for implementation. The scheme received encouraging response from states, and therefore, the scheme capacity was enhanced to 40000 MW through MNRE order dated 21.03.2017.

Under this scheme, total of 45 Solar Parks have been allocated, with total capacity of 26,449 MW (as on 31.08.2018). The parks are being developed either by State Government agencies or private entities or JV companies of SECI and state government agencies.

The parks are in various phases of development. As on 30.06.2018, 3345 MW capacity has been commissioned, 4900 MW capacity is under progress, 1575 MW is under tendering and 16629 MW is in the DPR stage.

Further, the solar parks in 6 States (Andhra Pradesh, Karnataka, Madhya Pradesh, Kerala, Uttar Pradesh and Himachal Pradesh) are being developed through Joint Venture Companies of SECI with State government agencies in 50:50 ratio of ownership.

One of the roles of SECI for implementation of this scheme is to disburse Central Financial Assistance (CFA) received from MNRE, for the development of these parks.

During FY 2017-18, CFA of Rs. 430.51 Cr. has been released by SECI, thereby bringing the cumulative disbursement under this scheme to Rs. 1,071.76 Cr. (till 31.03.2018).

Scheme for DEVELOPMENT OF ISTS CONNECTED Wind Power

SECI has been designated as the nodal agency for implementation of MNRE's scheme for Wind Power projects. Under the scheme, SECI is required to select the project developers through a tariff-based competitive bidding process and offtake power generated from projects under the scheme, for back-to-back sale to Discoms/bulk consumers on long term basis.

The first tender of 1000 MW capacity under this scheme was launched by SECI in FY 2016-17. This tender marked SECI's diversification into large-scale wind power segment and heralded in the era of competitive procurement of wind power on pan-India level. This tender was very well received in the industry.

Based on the success of this tender, MNRE has assigned SECI the implementation of several more such tenders. Till 31.08.2018, SECI is issued six tenders for 8500 MW capacity, of which 6049.9 MW capacity has been awarded. These projects are given 18 months for completion. The first projects of 126 MW capacity has been early-commissioned in Gujarat (till 31.08.2018).

The tenders issued by SECI in this segment have resulted in marked decline in wind power tariffs, in comparison to the earlier Feed-in-Tariffs (FIT) existing in various states. Further, through inter-state power transfer and rationalization of power tariffs, even non wind-rich states are being able to avail the benefits of clean and renewable wind energy.

In FY 2017-18, one of the major highlights of the wind power tenders has been the discovery of record low tariff of Rs. 2.44/kWh in Feb, 2018.

Power Trading

SECI has been entrusted responsibility of purchasing power from projects under VGF Schemes of the Government of India and selling it to various DISCOMs etc. through back-to-back PPAs/ PSAs.

SECI is presently selling power from projects commissioned under the 750 MW VGF scheme (NSM Phase II Batch I), 5 MW under Solarization of Indo-Pak border scheme, 2000 MW VGF scheme (NSM Phase II Batch III) and 5000 MW VGF scheme (NSM Phase II batch IV), as of March, 2018.

SECI is a category I interstate power trading licensee. Around 2100 million units have been traded in 2017-18, across 19 states and UTs. In the financial year 2017-18, aggregate capacity of 3750 MW PSA (Solar: 1500 MW and Wind: 2250 MW) has been signed.

SECI's own Projects

10 MW Badi Sid, Rajasthan

SECI is developing its own projects' portfolio wherein the first solar PV project of 10 MW capacity was commissioned in Jodhpur, Rajasthan on 31.03.2016. The plant has generated 18.9 million units (MU) in FY 2016-17, and about 19.4 MU in FY 2017-18.

1 MW Andaman & Nicobar (A&N)

SECI has developed grid connected rooftop solar power projects in Andaman & Nicobar Islands of 1 MW under its ownership. The plant is "first-of – its kind" in the Islands. The project was commissioned in two phases i.e. 686.26 kWp on 28/04/2017 and 314.34 kWp on 30/06/2017. Besides this, only one ground solar power plant of 5 MW capacity was installed by NTPC in Port Blair. The energy produced is being supplied to the A&N Administration under a long term PPA at a levelised tariff of Rs. 4.64/kWh decided by the Joint Electricity Regulatory Commission (JERC) vide their order dated 26.08.2016.

160MW solar-wind-BESS hybrid Project at Ramagiri, AP

For further development of SECI's portfolio, development of RE power projects using newer technology configurations and use applications, such as battery storage, floating solar etc. is under active consideration.

As an initial endeavour in this area, SECI is planning to set up a 160 MW of solar-wind hybrid power plant with battery storage in Andhra Pradesh, with World Bank financing. Project site has been identified and techno-commercial feasibility assessment of the project have been undertaken. framework PPA has been signed between A.P DISCOM and SECI and same has been submitted to APERC's approval. DPR has been prepared and tender for selection of EPC contractor has been issued on 16.08.2018. Land acquisition activities have been initiated.

10 MW Solar PV Project at Karnataka (DRDO)

A 10 MW project has been identified to set up at DRDO Kolar premises in Karnataka. The project will be developed by SECI on Build Own operate basis and the generated sale of power will be to DRDO establishments in Karnataka under third party open access sale. An MoU was also signed with DRDO in this regard.

After completion of pre-tendering works, tender for selection of EPC contractor was issued on 17.05.2018 and bids are under evaluation. Framework PPA and land-use agreement with DRDO is under finalization.

160 MW hybrid project in Rajasthan

SECI is working on a solar-wind hybrid project in Rajasthan, on the hybridization model developed with the World Bank. This project aims to optimize the benefits of RE power generation on specific land-area basis. Preliminary feasibility assessments have been completed and discussions with the state government are in progress.

Consultancy Projects

Project Management Consultancy (PMC) is developed as an important revenue-generating activity of the company. SECI has taken up assignments on turnkey basis for a number of clients, mostly CPSUs, in order to enable them in meeting their Green Energy Commitments made during RE-Invest 2015. Brief about the projects under implementation in FY 2017-18 is given in following sections. Additionally, SECI is working on a pipeline of 300 MW capacity in FY 2018-19 (till 31.08.2018) in PMC mode.

50 MW project at Kasargod, Kerala

SECI has undertaken development of the project under PMC works for IREDA. The project is located in the solar park at Kasadgod, Kerala. 36 MW capacity has been commissioned in 2016-17. Subsequently, entire capacity has been commissioned in September, 2017.

2X100 MW projects at Madhya Pradesh

SECI is undertaking development of the projects under PMC works for Coal India. RfS was floated by SECI for implementation of 2X100 MW of Solar PV projects in Madhya Pradesh through e-tendering followed by e-reverse auctioning mode. The award

recommendations were forwarded to CIL for their Board approval in the month of May, 2016. However, due to large price variations in the intervening time, the tender had to be cancelled.

Thereafter, SECI is working on a revised proposal to develop three projects of aggregate capacity 250 MW for CIL subsidiaries. DPR(s) for the Projects have been submitted. Tendering for these projects is expected to start shortly. Proposals for setting up additional 600 MW capacity in various locations in the country are also under consideration by CIL.

15 MW at Medak, Telangana

SECI is developing a 15 MW solar PV project for Bharat Electronics Limited at Medak, Telangana. The project is under MNRE's VGF scheme for Defence establishments. SECI had undertaken the bid-process management for the project, as well as turnkey project management. Tender for selection of EPC contractor was awarded in May, 2016. The project has been inaugurated on 30.05.2017.

5 MW at Bhanur, Telangana

SECI is developing a 5 MW solar PV project for Bharat Dynamics Limited at Bhanur, Telangana. The project is under MNRE's VGF scheme for Defence establishments. SECI had undertaken the bid-process management for the project, as well as turnkey project management. Tender for selection of EPC contractor was awarded in November, 2016. This project has been commissioned and inaugurated by the Hon'ble Defence Minister Shri ArunJaitley on 27th August, 2017.

5 MW for BDL, Ibrahmipatnam

Second project at BDL, Ibrahimpatnam (5 MW) under VGF LoI dated 29th December, 2017 is under construction.

Vizag Port (10 MW)

The project is located in the Vishakhapatnam port premises. Power generated is consumed for captive purposes. In 2016-17, the project has been part-commissioned (6.25 MW) in Oct, 2016. Subsequently, entire capacity has been commissioned in May, 2017. The project was inaugurated by Hon'ble Union minister of Road Transport and

Highways, Shipping and Water Resources, Shri Nitin Gadkari.

New Mangalore Port (4 MW)

The project is located in the New Mangalore port premises, for captive consumption of power. Tender for selection of EPC contractor was awarded in March, 2016. The project has been commissioned in December, 2016.

5.76 MWp at GAIL, Pata

SECI has commissioned India's second largest rooftop solar PV power plant at GAIL's Petrochemical complex in Pata, Uttar Pradesh under its PMC contract. The plant was commissioned on 29.12.2017. The 5.76 MWp Solar plant is spread over the roofs of two Warehouses measuring 500 mtr x 65 mtr each. It would generate about 79,30,000 units of electricity per annum for GAIL's captive use. Projects like GAIL will go a long way in bringing in clean energy installations and set an example to tap into the latent potential of roofs across industries, to generate renewable energy. For GAIL, the project will result in annual savings of INR 5.5 crore for GAIL with a payback period of slightly more than 4 years.

2.5 MW SDMC

2.5 MW of rooftop solar PV capacity was installed across 55 buildings owned by South Delhi Municipal Corporation.

8 MW BHU

SECI has signed an MOU with BHU, Varanasi for the installation of 8 MW solar rooftop plant & 50 MW ground mounted solar power plant in the south campus (Barkhacha) of BHU. Construction work is in progress.

CPSU Scheme

MNRE brought out a scheme for encouraging Government Departments and Central Public Sector Undertakings (CPSUs) to set up solar power projects. SECI was designated as the implementing agency for the scheme. The target capacity is 1000 MW and it envisaged to provide CFA to CPSUs for developing solar projects using domestically manufactured solar modules and/or cells. SECI is entrusted with the release of CFA to eligible CPSUs.

Total 881.76 MW capacity was sanctioned under the scheme by MNRE to various departments/PSUs. Out of this, 875.76 MW capacity has been commissioned till 30.06.2018. An amount of Rs. 184.94 Cr. has been released by SECI as subsidy in the FY 2017-18, and cumulative disbursement under this scheme has reached Rs. 703.4 Cr. (till 31.03.2018).

Canal Top/ Canal Bank Scheme

MNRE had launched a pilot scheme involving setting up of solar projects on canal-tops and canal-banks, with SECI being the implementing agency. The scheme capacity of 100 MW was allocated to various state agencies for developing these projects.

Under this scheme, 5 MW has been commissioned in FY 2017-18. CFA of Rs. 73.86 Cr. has been disbursed by SECI during till 31.03.2018.

VGF scheme for Defence Establishments

With a view to encourage defence establishments to set up solar power projects, MNRE launched a VGF scheme with capacity of 300 MW, with SECI as the implementing agency. In order to facilitate development of projects, SECI has been actively interacting with various organizations including Ordnance Factory Board, Military Engineering Services, Border Security Forces, Cantonment Boards and Air Force Stations, etc. and provided assistance with feasibility assessments and bid management in several cases.

Various projects at Ordnance Factory Board, MIDHANI, Bharat Dynamic Ltd., in which SECI has been closely associated with the implementation process, have been installed till date. A total of 355.2 MW has been sanctioned under the scheme of which 67 MW has been commissioned till 31.08.2018, while other projects are in various stages of development.

CFA of Rs.27.54 Cr. has been released through SECI during FY 2017-18, bringing cumulative disbursement to Rs.31.29 Cr. (till 31.03.2018).

Emerging Areas

Floating Solar PV

India has a huge potential for Floating Solar plants. The plants overcome the issue of land constraints faced by normal solar projects. MNRE has set a target for installing 10 GW of floating solar projects. In this regard, an Expression of Interest (EoI) was floated by SECI that received good response.

Going a step forward, SECI has identified potential of developing floating solar projects for cumulative capacity of 2.5 GW, in reservoirs such as Rihand, Omkareshwar, Indira Sagar, Hirakud etc. Tender for 150 MW (Rihand) has been issued in FY 2018-19 and the rest are in development stage.

Large tenders for floating solar projects provide huge opportunity for Floats manufacturers to invest in India.

Solar-Wind Hybrid

Projects based on the concept of co-locating Wind and Solar capacities for land and transmission optimization are to be set up. MNRE has released guidelines for Hybrid projects. Two kinds of hybrids are being explored:

- **Brownfield Hybrid projects,** in which Capacity addition of alternate technology (wind/solar) is made in existing solar/wind projects; and

- **Greenfield hybrid projects,** in which Capacity addition of alternate technology (wind/solar) is made in new solar/wind projects. SECI has issued NIT for 2500 MW of Greenfield hybrid projects on 26.04.2018.

Solar projects with Storage

To handle the challenges posed by unprecedented level of integration of RE in India's power system, viz. grid curtailment and stability issues due to intermittent/fluctuating power generation, incorporation of Energy Storage systems in the power projects and systems is inevitable. Taking cognizance of the importance of energy storage, the Government of India is contemplating on a National Storage Mission.

As a pioneer in large scale battery storage systems in India, SECI is developing 160 MW Solar Wind hybrid project with 20 MWh Battery Energy Storage, as a demonstration case.

Round-the-clock Renewables

Rapid growth of RE capacities leads to curtailment of thermal power projects, forcing them to operate at lower capacities, and hence, lower efficiencies, as back-up power sources. Flattening of RE generation to gel with the conventional power sources, as Round-the-Clock firm RE power is a promising solution to this challenge. RTC RE is a

combination of Solar + Wind+ Hydro+ storage, in proportions suited to match power demand. Going forth, RTC can replace conventional power sources. SECI is formulating a scheme for development of RTC projects.

Manufacturing linked solar projects

To encourage companies to set up integrated solar module manufacturing facilities (i.e Ingots to module manufacturing) in India, SECI has issued a tender for setting up of 3 GW solar manufacturing coupled with 10 GW solar power projects, on 25.05.2018. The manufacturing plant and the solar projects are to be developed in the time frame of 4 years. The tender provides power off-take assurance to developers in the form of 25 year Power Purchase Agreements (PPAs) with SECI for double the capacity of manufacturing facilities set up in India.

III. National Institute of Solar Energy (NISE)

a) The details regarding budget provision and expenditure incurred during the years 2015-16 to 2018-19 are as under:

Financial Year	B.E.	R.E.	Expenditure
2015-16	17.15	14.34	17.29
2016-17	20.00	7.00	13.71
2017-18	20.00	20.00	15.63
2018-19	18.00	18.00	13.08 (31.12.2018)

b)The NISE has already taken up a project entitled “Development of High Efficiency (21%/19%) PERC Type of Mono Crystalline/Multi Crystalline Solar Cell” jointly with BHEL to increase the efficiency of solar cell. This is a fully funded project by MNRE. More projects will be taken up by NISE for increasing the efficiency of Solar Cells.

NISE is developing a Centre of Excellence for Energy Storage.

c): Physical and financial performance of NISE:

- **Testing and Certification Labs:**

During FY 2018-19, NISE conducted (nos.819) tests including solar

water pumps (37 nos.), solar inverters (18 nos.), solar PV modules (691 nos.), LED (54 nos.), battery (11 nos.), calibration (04 nos.) and solar thermal (04 nos.) etc. upto 31.12.2018. A revenue of Rs.1.56 Crore was generated from these testings.

- **Consultancy Services:**

NISE is extending various consultancy services like site survey, preparation of Detailed Project Report, Solar System Design and vetting of tender documents and specifications, Project management & EPC advisory, Solar Feasibility Report / DPR on solar photovoltaic & solar thermal technologies, solar power plant performance evaluation & monitoring in the field, and testing & performance of the solar systems with the help of Mobile Lab facilities etc. During 2018-19 NISE has extended consultancy services to 6 companies/organizations including International Solar Alliance (ISA).

- **New Initiatives/Development of solar systems:**

Following solar systems were developed and the patent applications have been filed for:

- Solar Milk Chilling system and Solar Cold Storage.
- Solar Drying cum Space Heating system.
- Solar PV based Indoor Cooking system using PCM.
- Solar Thermal based outdoor cooking system using PCM.
- Patent for Production of diesel from Biomass, IIP is in the process of filing the joint Patent with NISE and IIP.

- **Skill Development:**

- A total of 19,180 Suryamitras have been imparted trainings under this programme up to 31.03.2018.

- Under Suryamitraprogramme, 15000 Suryamitras, are to be trained in FY 2018-19. A target of 15,000 suryamitras has been set for FY 2018-19 which is expected to be achieved.
- 577 international participants from 92 countries have been provided trainings on various aspects of solar energy technologies.
- A six months "Advanced Solar Professionals Course" (self-sustaining basis) has been started since 6th February 2018 at NISE.
- NISE is organising 11 types of trainings in which 1700 persons were imparted trainings during 2017-18. NISE has earned a revenue of Rs.1.91 Crore during 2017-18 from these trainings.

IV: National Institute of Wind Energy **(NIWE)**

i) Funds released to NIWE during last three years

(Amount in Lakhs)

Fin.Year	NE-CFA	Wind-CFA		IWSRA-CFA**		MOM-CFA**			
		Release		Release		Release			
Capital	Release	Revenue		Capital		Revenue	Capital		Revenue
2015-16		806.00		1,370.00		-	-		-
2016-17	-	900.00		1,600.00		-	-		-
2017-18	-	1,600.00		700.00		286.00	70.00		400.00
Total	**806.00**	**2,500.00**		**3,670.00**		**286.00**	**70.00**		**400.00**

** Grant received as on 31.03.2018
MOM - Met Ocean Measurements
IWSRA-Integrated Wind and Solar Resource Assessment
NE-North East Project
CFA-Central Financial Assistance

ii) Funds Utilised by NIWE during last three years

(Amount in Lakhs)

Fin. Year	NE-CFA	Wind-CFA		Smart Grid-CFA	IWSRA-CFA		MOM-CFA
	Expenditure	Expenditure		Expenditure	Expenditure		Expenditure
		Capital	Revenue		Capital	Revenue	Capital
2015-16	-		1,255.08	3.99	-	-	-
2016-17	390.23	333.28	900.74	63.04	-	-	-
2017-18	139.81	571.21	1,429.00	-	-	-	-
Total	**530.03**	**904.48**	**3,584.82**	**67.03**	**-**	**-**	**-**

MOM - Met Ocean Measurements
IWSRA-Integrated Wind and Solar Resource Assessment
NE-North East Project
CFA-Central Financial Assistance

iii) Major Achievements of NIWE during last three years

Financial year	Major Achievements
2015-16	a) NIWE launched 100 m Wind power potential map of India, wherein it has estimated the wind power potential of the country as 302 GW at 100 m height. b) NIWE through GIZ-India, prepared the 'Solar Radiation Atlas', first atlas of its kind combining satellite-derived data and the world's largest high quality network of simultaneously measured solar ground data. c) NIWE through a Tri-party Co-operation agreement among NIWE, M/s. TUV Rheinland Industries Service GmbH, Germany and M/s. TUV Rheinland (India) Private Limited had arranged internationally accredited wind turbine type certification services available in India d) 41 participants from 16 countries and 108 national participants attend the various training programmes on wind turbine technology conducted by NIWE, Chennai.
2016-17	a) A milestone in Offshore wind energy sector in the country by installing its first of this kind, structure for wind resource assessment at Gulf of Khambhat off Gujarat Coast b) Wind Power Forecasting and scheduling services was provided to Tamil Nadu, SLDC to improve the wind power evacuation. c) Solar forecasting in consultation with POSOCO and SLDCs was initiated. d) Free access was provided to general public for the data measured under the wind monitoring programme through NIWE web portal. e) The Baseline Surface Radiation Network (BSRN) has incorporated 4 stations (Tiruvallur, Gurugram, Gandhinagar& Howrah) on Indian experiences of Solar Resource Assessment under their prestigious world network; now, India is the Second Asian country, after Japan, to join this elite group. f) A Unique concept of integrating and implementing 75 kWp SPV system with old 200 kW wind turbine has been made by NIWE. g) 86 participants from 30 countries and 63 national participants attend various training programmes on wind turbine technology conducted by NIWE, Chennai.
2017-18	a) Installation of Remote Sensing instrument LiDAR to measure the wind profile at 12 different heights at Gulf of Khambhat off Gujarat coast for wind resource assessment, which is first of its kind in India. b) The Centre for Excellence in Variable Generation Forecasting (Wind & Solar Generation) has been established in NIWE with an intention to provide forecasting and scheduling services to all the Wind/ Solar rich States to improve the evacuation of more RE power. c) NIWE has established a Pan-India Research Network, to create a hub of synergy for all wind related researchers in India, for taking up industry

	identified issues by consortia of Academia with support from MNRE through NIWE d) NIWE-IREDA Annual awards in Wind Energy created, it is to promote innovation, research & development, manufacturing, developing & harnessing wind energy at the State and national levels and to motivate individuals, stakeholder to strive for the best in the field. e) NIWE has conducted eight training programs on 'Wind Energy Technology and Application' which includes five international trainings and three national Training programs and a special training course on 'Wind and Solar Resource Assessment Technology' for officials of nine State Nodal Agencies was conducted.

V: National Institute of Bio-Energy (NIBE)

NIBE, Kapurthala is an autonomous Institution under the Ministry of New and Renewable Energy (MNRE), Govt. of India, set up as an apex Institution for carrying out state-of-the-art research and developmental activities, biomass resource assessment, testing, validation and training for promotion of bioenergy in the country. The mandate of NIBE covers entire activities of bio-energy sector such as biogas, bagasse power,biomethation, biomass cookstoves, biofuels and solid waste. At present, the activities are limited to few areas only because of manpower shortage. The Ministry has been pursuing with Department of Expenditure for continuation of 26 sanctioned posts so that the activities of bio-energy sector can be taken in tandem with the activities of the Ministry. It is envisaged that the recruitment will be completed in the current calendar year, so that the R&D activities in the various areas of bio sector can be taken up in the large scale, thus, converting NIBE as focal point for renewable energy programmes related to bio-energy sector in the country.

The budget utilised was therefore fluctuated as tabulated under:

(**Rs. in Lakh**)

Year		GIA-Salary	GIA-General	GIA-Capital	Total	Remarks
2015-16	Carry forward amount from the previous year	152.74	599.74+91.41		843.89	Rs 91.41 Lakh as interest capitalized
	Grant Released from MNRE	100.00	368.58		468.58	
	Expenditure	100.42	232.64	8.92	341.98	
	Balance left on 31.03.2016	152.32	818.17		970.49	
2016-17	Carry forward amount from the previous year	152.32	818.17		970.49	
	Grant Released from MNRE	NIL	NIL	NIL	NIL	
	Expenditure	99.53	224.31	115.63	439.47	
	Balance left on 31.03.2017	52.78	478.24		531.02	
2017-18	Carry forward amount from the previous year	52.78	478.24		531.02	
	Grant Released from MNRE	NIL	50.00	50.00	100.00	
	Expenditure	91.67	112.37	NIL	204.04	The balance for GIA salary was re-appropriate from GIA Capital
	Balance left on 31.03.2018	(-)38.89	465.87		426.98	
2018-19*	Carry forward amount	(-)38.89	465.87		426.98	

	from the previous year					
	Grant Released from MNRE	100.00	NIL	NIL	100.00	
	Expenditure	45.35	142.27	24.06	211.68	
	Balance left on 20.12.2018	15.76	299.54		315.30	

*Un-audited statement.

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CHAPTER III
OBSERVATION/ RECOMMENDATION WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

Nil

CHAPTER IV
OBSERVATIONS/ RECOMMENDATIONS IN RESPECT OF WHICH THE REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION

Nil

CHAPTER V
OBSERVATIONS/ RECOMMENDATIONS IN RESPECT OF WHICH THE FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED

Nil

NEW DELHI
06 March, 2020
Phalguna 16 1941 (Saka)

Rajiv Ranjan Singh *alias* Lalan Singh,
Chairperson,
Standing Committee on Energy

APPENDIX I

Minutes of the Thirteenth Sitting of the Standing Committee on Energy (2019-20) held on 27th February, 2020 in Committee Room '3', Parliament House Annexe Extention, Block-A, New Delhi

The Committee met from 1500 hrs. to 1530 hrs.

PRESENT

LOK SABHA

Shri Rajiv Ranjan Singh *alias* Lalan Singh- Chairperson

2. Shri Thomas Chazhikadan
3. Dr. A. Chellakumar
4. Shri Ramesh Chander Kaushik
5. Shri Ashok Mahadeorao Nete
6. Shri Praveen Kumar Nishad
7. Shri Jai Prakash
8. Shri N. Uttam Kumar Reddy

RAJYA SABHA

9. Shri B.K. Hariprasad
10. Shri Javed Ali Khan

SECRETARIAT

*	Shri R.C. Tiwari	-	Joint Secretary
*	Shri N.K. Pandey	-	Director
*	Smt. L. Nemjalhing Haokip	-	Deputy Secretary

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

i) Draft Report on Demands for Grants of the Ministry of Power for the year 2020-21.

ii) Draft Report on Demands for Grants of the Ministry of New and Renewable Energy for the year 2020-21.

iii) Draft Action Taken Report on the recommendations contained in the Thirty-Ninth Report of the Committee on Demands for Grants(2018-19) of the Ministry of New and Renewable Energy.

3. After discussing the contents of the Reports, the Committee adopted the aforementioned draft Reports with minor amendments. The Committee also authorized the Chairperson to finalize the above-mentioned Reports and present the same to both the Houses of Parliament in the current Budget Session.

The Committee then adjourned.

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APPENDIX II

(*Vide Introduction of Report*)

ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE OBSERVATIONS/ RECOMMENDATIONS CONTAINED IN THE THIRTY-NINTH REPORT (16TH LOK SABHA) OF THE STANDING COMMITTEE ON ENERGY

(i)	Total number of Recommendations	25
(ii)	Observations/Recommendations which have been accepted by the Government:	
	All	
	Total:	25
	Percentage	100%
(iii)	Observations/Recommendations which the Committee do not desire to pursue in view of the Government's replies:	
	Nil	
	Total:	00
	Percentage	0%
(iv)	Observations/Recommendations in respect of which the replies of the Government have not been accepted by the Committee and which require reiteration:	
	Nil	
	Total:	00 Percentage
	0 %	
(v)	Observations/Recommendations in respect of which final replies of the Government are still awaited:	
	Nil	
	Total:	00
	Percentage	0%