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**STANDING COMMITTEE ON ENERGY**

**(2016-17)**

**SIXTEENTH LOK SABHA**

**MINISTRY OF NEW AND RENEWABLE ENERGY**  
[Action Taken on the recommendations contained  
in the Twentieth Report (16<sup>th</sup> Lok Sabha) on Power  
Generation from Municipal Solid Waste]

**TWENTY FOURTH REPORT**



**LOK SABHA SECRETARIAT  
NEW DELHI**

***December, 2016/Agrahayana, 1938 (Saka)***

**STANDING COMMITTEE ON ENERGY  
(2016-17)**

**(SIXTEENTH LOK SABHA)**

**MINISTRY OF NEW AND RENEWABLE ENERGY**

**[Action Taken on the recommendations contained in the Twentieth  
Report (16<sup>th</sup> Lok Sabha) on Power Generation from Municipal Solid  
Waste]**

*Presented to Lok Sabha 15.12.2016*

*Laid in Rajya Sabha on 15.12.2016*



**LOK SABHA SECRETARIAT  
NEW DELHI**

*December 2016/Agrahayana, 1938 (Saka)*

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**COMPOSITION OF THE STANDING COMMITTEE ON ENERGY**

**(2016-17)**

**LOK SABHA**

**Dr. Virendra Kumar- Chairperson**

2. Shri Sultan Ahmed
3. Shri Om Birla
4. Shri M. Chandrakasi
5. Shri Ashwini Kumar Choubey
6. Shri Harish Chandra alias Harish Dwivedi
7. Shri Deepender Singh Hooda
8. Shri Bhagat Singh Koshyari
9. Dr. Arun Kumar
10. Kunwar Sarvesh Kumar
11. Shri Malyadri Sriram
12. Shri R.P. Marutharajaa
13. Dr. Pritam Gopinath Munde
14. Shri Jagdambika Pal
15. Shri Ravindra Kumar Pandey
16. Shri M.B. Rajesh
17. Shri Vinayak Bhaurao Raut
18. Shri Gutha Sukhender Reddy
19. Shri Conrad Kongkal Sangma
20. Shri Devendra Singh *Alias* Bhole Singh
21. Shri Bhanu Pratap Singh Verma

**RAJYA SABHA**

- 22 Shri T.K.S. Elangovan
- 23 Shri Oscar Fernandes
- 24 Shri Ram Jethmalani
- 25 Shri Javed Ali Khan
- 26 Shri La. Ganesan
- 27 Dr. Prabhakar Kore
- 28 Shri Shamsheer Singh Manhas
- 29 Shri S.Muthukaruppan
- 30 Dr. Anil Kumar Sahani
- 31 Shrimati Viplove Thakur

## SECRETARIAT

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

## **INTRODUCTION**

I, the Chairperson, Standing Committee on Energy having been authorized by the Committee to present the Report on their behalf, present this Twenty-fourth Report on the action taken by the Government on the recommendations contained in Twentieth Report of the Standing Committee on Energy on 'Power Generation from Municipal Solid Waste'.

2. The Twentieth Report was presented to the Lok Sabha on 5th August, 2016 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 4th November, 2016.

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

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

5. The Committee appreciate that the Ministry have accepted all the recommendations of the Committee. However, action taken by the Government on some of the Recommendations that require merit comments are commented.

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

**Dr. Virendra Kumar,**  
**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 their Twentieth Report (Sixteenth Lok Sabha) on Power Generation from Solid Waste'.

2. The Twentieth Report was presented to Lok Sabha on 5 August, 2016 and was laid on the Table of Rajya Sabha on the same day. The Report contained 16 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 and 16

Total -16  
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 appreciate that the Ministry have accepted all the recommendations of the Committee. The Committee however, desire and expect the Ministry to implement the recommendations of the Committee in letter and spirit, in a time bound manner. They further desire that Action Taken Notes on implementation of the Recommendations/Observations contained in Chapter-I of the Report may be furnished to the Committee within three months of the presentation of this Report.**

5. The Committee however, will deal with action taken by the Government on some of their Recommendations that require merit comments.

**A. Municipal Solid Waste : Generation, Composition and Potential**

**(Recommendation Serial No.1)**

6. The Committee in their original Report had noted that out of the total quantity of waste generated in the country i.e. 1.43 lakh metric tons per day, only 0.33 lakh metric tons is being treated and disposed. As per the data furnished by the Ministry, some of the States like Bihar, Chhatisgarh, Jharkhand, Orissa, Punjab, Uttrakhand, etc., have performed very badly in terms of treatment of their waste. The waste that these states treat is abysmally low. There is an urgent need to step up efforts so as to achieve 100% scientific processing and disposal of Municipal Solid Waste by 2019, as envisaged by the Government, under Swachh Bharat Mission. The Committee had also noted that the figures regarding waste generation, collection and treatment, given by the Ministry, pertain to urban areas only, whereas the Committee found that a large amount of waste is generated in rural areas also which has not been taken into account anywhere. There should be some facility to collect and treat solid waste at Panchayat level also as all the waste in rural areas is not suitable to be converted into organic manure. The Committee had therefore, recommended that:

(i) All the Urban Local Bodies should be encouraged to prepare an Action Plan, in a time bound manner, for establishing Waste treatment Facilities, employing any technology according to their local needs, in their respective areas so as to achieve 100% collection and treatment of MSW all over the Country.

(ii) Waste generated in the Villages should be taken into account and a proper mechanism for the collection and treatment of the same should be initiated at the Panchayat level also.

7. The Ministry of Urban Development in their Action Taken Reply has stated as under:

1. National Urban Sanitation Policy (NUSP), 2008 mandates each ULBs to formulate their respective City Sanitation Plan (CSP) in overall conformity to the National Policy. Swachh Bharat Mission (SBM) mandates 100 % collection, transportation and treatment of solid waste by 2<sup>nd</sup> Oct., 2019. SBM is guided by NUSP, 2008. Under SBM, all the Mission cities/towns had prepared their CSPs.

2. The new Solid Waste Management Rules, 2016 published by Ministry of Environment, Forests & Climate Change have been notified with the responsibilities for the different Ministries/States/UTs/ULBs/ Departments in solid waste management.

3. The Ministry is also having the responsibility of providing guidelines to the State/ULBs. Thus, the Ministry has formulated/contributed to the following documents in consultation with the other Ministries.

(i) Revised Municipal Solid Waste Management Manual published in 2016

(ii) Report of the Task Force on Waste to Energy published by NITI Aayog (erstwhile planning Commission) on May 2014

4. Both these documents detail the various solid waste management practices that can be adopted by the ULBs.

Report of the Task Force describes the various WtE technological options available in the Country and their suitability based on the population and geography.

Both these documents are available in the web portal of SBM.

(ii) Ministry of Drinking Water and Sanitation may fund the rural part of such projects as the subject matter of rural areas is being dealt with by Ministry of Drinking Water and Sanitation.

**8 On the Committee's recommendation that a proper mechanism for the collection and treatment of waste generated in the village should be initiated at the Panchayat level, the Ministry of Urban Development suggest that the Ministry of Drinking Water and Sanitation may fund the rural part of such projects as the subject matter of rural areas is being dealt with by Ministry of Drinking Water and Sanitation. However, the Committee feel that as the subject matter i.e MSW is within the purview of the Ministry of Urban Development and they are the nodal Ministry, they have full responsibility in the matter. Moreover, if the Ministry of Urban Development feel the need to involve the Ministry of Drinking Water and Sanitation in the project, they may set up a coordination mechanism for the same.**

**B. Municipal Solid Waste : Generation, Composition and Potential**

**(Recommendation Serial No. 2)**

9. The Committee in their earlier Report had noted that the waste that is generated in the Country is a mixed waste comprising a large amount of inert material and a very high moisture level unlike in other countries. High level of moisture and inert in the waste make it difficult to derive power from it. The Committee found that there is no proper system of collection from the source of waste generation and municipal sanitation workers collect waste primarily through street sweeping, etc. Also, there is no practice of sorting of waste at source in a scientific way. In view of the Committee, there should be efficient mechanism for segregation of waste at the source as it has become a herculean task all over the country. The Committee had therefore, recommended that:

- (i) Citizens should be encouraged to keep segregated bins for wet, dry and hazardous waste and to stop littering on the streets.
- (ii) Segregation of waste should be made mandatory in all Government Offices, Households, Commercial Establishments, etc. and if need be a penalty may be imposed for non-compliance.
- (iii) Proper training should be provided to municipal workers regarding segregation of waste for efficient utilization of resources.
- (iv) Awareness and sensitization programmes should be conducted for the best practices in the field of waste handling to bring in behavioural changes in public.

10. The Ministry of Urban Development in their Action Taken Reply has stated as under:

"(i) As per the Solid Waste Management Rules, 2016 it is mandated for all the waste generators to segregate and store the waste generated by them in three separate streams namely bio-degradable, non-biodegradable and domestic hazardous wastes. Further, the Rules had delegated powers to the local authorities and village panchayat to frame bye-laws and prescribe criteria for levying of spot fine for persons who litters or fails to comply with the provisions of these rules and delegate powers to officers or local bodies to levy spot fines as per the bye laws framed.

As per the Rules, the word "waste generator" means and includes every person or group of persons, every residential premises and non-residential establishments which generate solid waste.

(ii) MSW Rules, 2016 has made it mandatory for all waste generators to segregate the waste and it prescribes criteria for levying of fines for persons who fails to comply with these rules

(iii) As per the Solid Waste Management Rules 2016, it is the responsibility of the local authorities and village panchayats to educate workers for door to door collection of segregated waste and transporting the unmixed waste to processing or disposal facility; and to provide training on solid waste management to waste-pickers and waste collectors.

(iv) Under Swachh Bharat Mission (SBM), 15 % of total Central allocation to the States has been earmarked for IEC & Public Awareness component. Of this, 12% has been earmarked for States and the remaining 3% has been earmarked for the Ministry. The Ministry has developed e-modules & is developing it further in various areas of Municipal Solid Waste Management which includes capturing of best practices in various fields.

Further, as per the Solid Waste Management Rules 2016, it is the responsibility of the local authorities and village panchayats to create public awareness through information, education and communication campaign and educate the waste generators including the best practices in the field of waste handling".

11. The Committee are happy to note about the enforcement of Solid Waste Management Rules 2016 which mandated all the waste generators to segregate and store the waste generated by them in three separate streams of bio-degradable, non-biodegradable and domestic hazardous wastes. The Rules had also delegated powers to the local authorities and village panchayat to frame bye-laws and prescribe criteria for levying of spot fine for persons who litters or fails to comply with the provisions of these rules and delegate powers to officers or local bodies to levy spot fines as per the bye laws framed. As per the said Rules, it is the responsibility of the local authorities and village panchayats to educate workers for door to door collection of segregated waste and transporting the unmixed waste to processing or disposal facility; and to provide training on solid waste management to waste-pickers and waste collectors. Although the Rules mandated the waste generator, delegated powers to the local authorities and village panchayat for different task, the Solid Waste Management Rules being at its nascent stage, the Committee are concerned about the implementation of the Rules in letter and spirit by local authorities and village panchayats. The Committee therefore, feel that the Ministry of Urban Development being the nodal Ministry in this sector should ensure implementation of the Management Rules 2016 by various stakeholders.

**C. Status of Waste to Energy projects in the country**

**(Recommendation Serial No.4)**

12. The Committee in their original Report had noted that except Okhla and Ghazipur Plants, all the remaining Waste to Energy Plants including Pune Plant have completely failed to take off. The Committee visited the Okhla and Pune Waste to Energy Plants for first-hand knowledge of working of such plants and found that while working of Okhla Plant (Delhi) was satisfactory, Pune Plant was a complete failure. The Committee had noted that most of the Waste to Energy Plants have been set up in the country

under private sector driven PPP mode and most of these plants have failed to function properly. In view of the Committee, Public Sector must come forward and set up at least two demonstration Waste to Energy Plants which would give a message that the Government is committed to the cause of scientific management of Municipal Solid Waste in general and adoption of the methods of Waste to Energy in particular and it believes that such a project is viable and can be run efficiently and that all the risks associated with such projects were not transferred to the private partners. The Committee had therefore, recommended that:

- (i) The model of Okhla Plant (Delhi) may be replicated in other cities for safe disposal of MSW generation of Power.
- (ii) The Government/PSUs should set up at least two demonstration Waste to Energy Plants to give a message that the Government is committed to the cause of scientific management of Municipal Solid Waste.

13. The Ministry of Urban Development in their Action Taken Reply has stated as under:

- (i) As per the Swachh Bharat Mission (SBM) Guidelines, the States/UTs/ULBs are empowered to select the technology of their convenience for treating solid waste, generated in their jurisdiction, based on their requirements and actual site conditions
- (ii) This issue will be taken up at an appropriate level in the Government for taking suitable decision.

**14. With regard to their recommendation for replication of the model of Okhla Plant (Delhi) in other cities for safe disposal of MSW and generation of Power, the Committee are apprised that the SBM Guidelines empowered the States/UTs/ULBs to select the technology of their convenience for treating solid waste, generated in their jurisdiction, based on their requirements and actual site conditions. With due acknowledgement of the Guidelines, the Committee are of the view that the Ministry of Urban Development is responsible to guide the**

**States/UTs/ULBs for imparting experiences gained at one Plants to other Plants in the country.**

**Further with regard to the Committee's recommendation to set up at least two demonstration Waste to Energy Plants by the PSU/Government, the Ministry responded that they will be taking up this issue at an appropriate level in the Government for taking suitable decision. The Committee trust the commitment of the Government and desire that the Committee may be apprised of the action taken in this regard.**

**D. Cluster model of the State Government of Andhra Pradesh**

**(Recommendation Serial No.15)**

15. The Committee in their original Report had noted that in the State of Andhra Pradesh, Project Developers are required to set up a Waste to Energy Plant on a PPP mode on a Design, Build, Finance, Operate and Transfer (DBFOT) basis and are selected through a tariff based competitive bidding process. Also, ULBs are responsible to deliver waste to the Developer at the identified project site/location at their own cost without paying any Tipping Fee to the Developer and APDISCOMs are responsible for procurement of power generated from the project. There is also a provision of Scientific landfilling of the rejects from the WtE Plant and development of the scientific landfill by the Developer at its own cost, etc. The Committee appreciated the efforts of the State Government of Andhra Pradesh in this regard and felt that Andhra Model may serve as an example to other States to come forward and adopt innovative methods for scientific disposal and treatment of Municipal Solid Waste. The Committee also felt that there is a need to showcase the few success stories that the Country have in the field of Waste to Energy so as spread awareness and encourage States to come up with innovative methods suitable to their local conditions. The Committee had therefore, recommended that:

- (i) The Committee laud the efforts of the Govt. of Andhra Pradesh for their initiative in the MSW management and taking a lead in the country in Waste to Energy sector.

(ii) States should be encouraged to come forward and adopt innovative methods for scientific disposal and treatment of Municipal Solid Waste.

(iii) The success stories in the field of Waste to Energy should be showcased so as to spread awareness and encourage more States to come up with innovative methods which suit their local condition the best.

16. The Ministry of Urban Development in their Action Taken Reply stated:

(i) No comments.

(ii) Agreed.

(iii) Ministry had already put some of the successful case studies of solid waste management including WtE in the e-learning portal for Swachh Bharat (Urban). Further, Ministry is in the process of preparing 100 e-learning Modules in sanitation including WtE. These may be referred by the ULBs for capacity building and selecting a suitable technology.

**17. The Committee find the response of the Ministry on the observation/recommendation of the Committee lauding the efforts of the Govt. of Andhra Pradesh for their initiative in the MSW management as non challant. The intention of the Committee in this regard is to spread the success stories of one State to another States in the field of Waste to Energy, so as to encourage more States to come up with more innovative methods in waste management. However, the Committee appreciate the steps of the Government with regard to the solid waste management including waste to energy in e-learning portal for Swachh Bharat. The Committee, therefore urge the Ministry to have a close look at the Andhra model and showcase their success stories so as to spread awareness and encourage other States to come up with innovative methods suitable to their local conditions.**



## CHAPTER II

### OBSERVATIONS/ RECOMMENDATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

#### Status of implementation of the recommendations of the Committee contained in the Twentieth Report, under Direction 73A of the 'Directions by the Speaker'

##### (Recommendation Sl. No.1)

The Committee note that out of the total quantity of waste generated in the country i.e. 1.43 lakh metric tons per day, only 0.33 lakh metric tons is being treated and disposed. As per the data furnished by the Ministry, some of the States like Bihar, Chhatisgarh, Jharkhand, Orissa, Punjab, Uttrakhand, etc., have performed very badly in terms of treatment of their waste. The waste that is these states treat is abysmally low. There is an urgent need to step up efforts so as to achieve 100% scientific processing and disposal of Municipal Solid Waste by 2019, as envisaged by the Government, under Swachh Bharat Mission. The Committee, also note that the figures regarding waste generation, collection and treatment, given by the Ministry, pertain to urban areas only, whereas the Committee find that a large amount of waste is generated in rural areas also which has not been taken into account anywhere. There should be some facility to collect and treat solid waste at Panchayat level also as all the waste in rural areas is not suitable to be converted into organic manure. Therefore, the Committee recommend that:

- (i) All the Urban Local Bodies should be encouraged to prepare an Action Plan, in a time bound manner, for establishing Waste treatment Facilities, employing any technology according to their local needs, in their respective areas so as to achieve 100% collection and treatment of MSW all over the Country.
- (ii) Waste generated in the Villages should be taken into account and a Proper Mechanism for the collection and treatment of the same should be initiated at the Panchayat level also.

#### Reply of the Government

1. National Urban Sanitation Policy (NUSP), 2008 mandates each ULBs to formulate their respective City Sanitation Plan (CSP) in overall conformity to the National Policy. Swachh Bharat Mission (SBM) mandates 100 %

collection, transportation and treatment of solid waste by 2<sup>nd</sup> Oct., 2019. SBM is guided by NUSP, 2008. Under SBM, all the Mission cities/towns had prepared their CSPs.

2. The new Solid Waste Management Rules, 2016 published by Ministry of Environment, Forests & Climate Change have been notified with the responsibilities for the different Ministries/States/UTs/ULBs/Departments in solid waste management.

3. The Ministry is also having the responsibility of providing guidelines to the State/ULBs. Thus, the Ministry has formulated/contributed to the following documents in consultation with the other Ministries.

- (i) Revised Municipal Solid Waste Management Manual published in 2016
- (ii) Report of the Task Force on Waste to Energy published by NITI Aayog (erstwhile planning Commission) on May 2014

4. Both these documents detail the various solid waste management practices that can be adopted by the ULBs.

Report of the Task Force describes the various WtE technological options available in the Country and their suitability based on the population and geography.

Both these documents are available in the web portal of SBM.

ii) Ministry of Drinking Water and Sanitation may fund the rural part of such projects as the subject matter of rural areas is being dealt with by Ministry of Drinking Water and Sanitation.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation SI. No.2)**

The Committee note that the waste that is generated in the Country is a mixed waste comprising a large amount of inert material and a very high moisture level unlike in other countries. High level of moisture and inerts in the waste make it difficult to derive power from it. The Committee find that there is no proper system of collection from the source of waste generation and municipal sanitation workers collect waste primarily through street sweeping, etc. Also, there is no practice of sorting of waste at source in a

scientific way. In view of the Committee, there should be efficient mechanism for segregation of waste at the source as it has become a herculean task all over the country. So, the Committee recommend that:

- (i) Citizens should be encouraged to keep segregated bins for wet, dry and hazardous waste and to stop littering on the streets.
- (ii) Segregation of waste should be made mandatory in all Government Offices, Households, Commercial Establishments, etc. and if need be a penalty may be imposed for non-compliance.
- (iii) Proper training should be provided to municipal workers regarding segregation of waste for efficient utilization of resources.
- (iv) Awareness and sensitization programmes should be conducted for the best practices in the field of waste handling to bring in behavioural changes in public.

### **Reply of the Government**

As per the Solid Waste Management Rules, 2016 it is mandated for all the waste generators to segregate and store the waste generated by them in three separate streams namely bio-degradable, non-biodegradable and domestic hazardous wastes. Further, the Rules had delegated powers to the local authorities and village panchayats to frame bye-laws and prescribe criteria for levying of spot fine for persons who litters or fails to comply with the provisions of these rules and delegate powers to officers or local bodies to levy spot fines as per the bye laws framed.

As per the Rules, the word “waste generator” means and includes every person or group of persons, every residential premises and non-residential establishments which generate solid waste.

MSW Rules, 2016 has made it mandatory for all waste generators to segregate the waste and it prescribes criteria for levying of fines for persons who fails to comply with these rules

As per the Solid Waste Management Rules 2016, it is the responsibility of the local authorities and village panchayats to educate workers for door to door collection of segregated waste and transporting the unmixed waste to processing or disposal facility; and to provide training on solid waste management to waste-pickers and waste collectors.

Under SBM, 15 % of total Central allocation to the States has been earmarked for IEC & Public Awareness component. Of this, 12% has been earmarked for States and the remaining 3% has been earmarked for the

Ministry. The Ministry has developed e-modules & is developing it further in various areas of Municipal Solid Waste Management which includes capturing of best practices in various fields.

Further, as per the Solid Waste Management Rules 2016, it is the responsibility of the local authorities and village panchayats to create public awareness through information, education and communication campaign and educate the waste generators including the best practices in the field of waste handling.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

**(Recommendation SI.No.3)**

The Committee observe that for Biomethanation, wet biodegradable waste is required; for Combustion of RDF, dry high organic waste is required; for Gasification, organic or fossil based carbonaceous material is required and for Pyrolysis, organic waste is required. Mass Burning of MSW is the only method which does not require any segregation of waste and uses mixed waste. However, this method of Mass Burning is detrimental to the environment, so should not be resorted to on a mass scale. Most of the above mentioned technologies require proper segregation of waste, however, there is lack of an efficient mechanism to segregate waste into biodegradable/dry/wet/ carbonaceous materials etc components. Also, none of these technologies have yielded desired results due to variety of reasons.

- (i) The Government should provide proper policy and cost effective technological support for W to E Sector as existing technologies do not seem to be compatible to local requirements.
- (ii) Efficient, financially affordable and environmentally suitable technological methods should be adopted to recover energy from the waste without compromising on the viability of Waste to Energy Plants and ensuring better public health.
- (iii) Mass burning of municipal waste should be discouraged and prohibited as it is detrimental to environment and also a major source of health hazards.

**Reply of the Government**

Government of India is taking various initiatives to make the waste to energy plants in the Country financially viable. As per the latest amendment to the

Electricity Tariff Policy 2006 by Ministry of Power it has been made mandate for the State Electricity DISCOMs to purchase all power generated from municipal solid waste at the rate determined by appropriate authority.

Further, Central Electricity Regulatory Commission (CERC) has notified the generic tariff of Rs.7.04 per unit and Rs.7.90 per unit for Municipal Solid Waste and Refuse Derived Fuel based waste to energy plants, respectively for year 2015-16.

Also, all currently available technologies in WtE along with their applicability, usage and challenges are discussed in the Ministry's Municipal Solid Waste Management Manual published in 2016.

Further, as stated in 1 (i) the report of the Task Force on Waste to Energy describes the various WtE technologies available in the Country and their suitability based on the population & geography of the ULBs has been discussed.

However, the States/UTs/ULBs are empowered to select technology for treating solid waste, generated in their jurisdiction, on their own based on their requirements and actual site conditions as per the SBM Guidelines.

Solid Waste Management Rules, 2016 prohibits the burning of waste and authorises the local authorities and village panchayats to penalise the defaulters of the Rules as per the bye laws framed

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

#### **(Recommendation SI.No.4)**

The Committee note that except Okhla and Ghazipur Plants, all the remaining Waste to Energy Plants including Pune Plant have completely failed to take off. The Committee visited the Okhla and Pune Waste to Energy Plants for first-hand knowledge of working of such plants and found that while working of Okhla Plant (Delhi) was satisfactory, Pune Plant was a complete failure. The Committee note that most of the Waste to Energy Plants have been set up in the Country under private sector driven PPP mode and most of these plants have failed to function properly. In view of the Committee, Public Sector must come forward and set up at least two demonstration Waste to Energy Plants which would give a message that the Government is committed to the cause of scientific management of Municipal Solid Waste in general and adoption of the methods of Waste to Energy in

particular and it believes that such a project is viable and can be run efficiently and that all the risks associated with such projects are not transferred to the private partners. Therefore, the Committee recommend that:

- (i) The model of Okhla Plant (Delhi) may be replicated in other cities for safe disposal of MSW generation of Power.
- (ii) The Government/PSUs should set up at least two demonstration Waste to Energy Plants to give a message that the Government is committed to the cause of scientific management of Municipal Solid Waste.

### **Reply of the Government**

As per the SBM Guidelines, the States/UTs/ULBs are empowered to select the technology of their convenience for treating solid waste, generated in their jurisdiction, based on their requirements and actual site conditions

This issue will be taken up at an appropriate level in the Government for taking suitable decision.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation SI.No.5)**

The Committee note that the process of generating power from waste is carried out at a high temperature of more than 800° C thereby preventing formation of dioxins and WtE plants are said to be seen as pollution management practice to mitigate crude dumping or landfilling of waste. However, the Committee observe that the locals generally complain of pungent odour coming out of Waste to Energy Plants. So, it should be taken care of by the agency concerned and it should be ensured that all the Waste to Energy Plants in the country adhere to the Environmental norms and defaulters should be penalized. Therefore, the Committee recommends that:

- (i) Appropriate technology must be used in all the Waste processing facilities to mitigate the problem of pungent odour.
- (ii) A regulating mechanism must be evolved to ensure that all the 'Waste to Energy' Plants in the country adhere to the Environmental norms and defaulters be penalized.

## **Reply of the Government**

All the waste processing have their operating procedures/manuals to eliminate the pungent odour.

All the Waste to Energy Plants in the country are already being monitored by the State Pollution Control Boards of the concerned States by the 'consent' mechanism i.e., (i) consent to establish and (ii) consent to operate, for their adherence to the environmental standards as prescribed by them.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation SI.No.6)**

The Committee note that the problems plaguing the waste to energy sector vary from irregular and inadequate quantity of supply to non-payment of agreed fee and non-marketability of waste processed projects, including power. The remedial measures, as informed by the Government, do not seem to be efficacious enough to redress the problem. Several, steps have been initiated under Swatch Bharat Mission for MSW management by way of grant to project cost, Viability Gap Funding (VGF) to States in Urban Local Bodies (ULB) etc., in incentivisation of cities for regular supply of garbage, etc. However, these steps have not succeeded to the desired extent in motivating the sector to come up in a desired manner. The Committee, therefore, recommend that-

- (i) The entire process of waste to energy needs a revisit with a view to making it efficient, effective and delivery prone.
- (ii) The grant/funding to States and Urban Local Bodies (ULB) be made more attractive.
- (iii) Other motivational measures should be taken in a time bound and targeted manner to encourage direct involvement and participation of the people.

## **Reply of the Government**

As stated in reply to 1 (i), the report of the Task Force describes the various WtE technological options available in the Country and their suitability based on the population and geography.

As per the latest revision to the SBM guidelines, the central assistance for municipal solid waste component has been raised from present 20% to 35%,

subject to the overall State-wise funds envelope for SWM remaining unchanged.

As stated in reply to 2 (iv), under SBM, 15 % of total Central allocation to the States has been earmarked for IEC & Public Awareness component to encourage direct involvement and participation of the people.

Further, Ministry has recently launched 'Swachhata App' to increase the people's participation in solid waste management. With the App, any registered citizen can post their grievance regarding the solid waste collection and transportation by the ULBs that already registered with the application. Based on the complaints received in the app the ULBs have to act and solve the problem in a time bound manner.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

**(Recommendation SI.No.7)**

The Committee note that the participation of the private sector in the waste to energy programme has not come up to the expectation. The Committee has been apprised that so far the private sector has participated only in a limited manner, with few agencies active in the sector. They are there in the PPP mode, wherein the performance of the project becomes a joint/united effort. The PPP arrangements are not single responsibility contract, but based on the participation between local Government and the private sector. Consequently, the interests of the private sector may not be as encouraging due to several factors. To encourage participation of the private sector in a wholehearted manner, various incentives can be offered and all the anticipated obstacles must be removed. The Committee, therefore, recommend that that-

- (i) Adequate ways and means should be allotted to ensure the wholehearted participation of private sector in MSW management.
- (ii) Tax exemptions/rebates/holidays for equipment and machinery etc. should be considered to encourage private participation the sector.



## **Reply of the Government**

As stated in the reply to 3 (i) & (ii), Government of India is taking various initiatives to make the waste to energy plants in the Country financially viable including amending to the Electricity Tariff Policy 2006 to mandate the State Electricity DISCOMs to purchase all power generated from municipal solid waste and notifying the generic tariff which is attractive enough for private sector to invest in the field. Determination of Generic Tariff will boost the financial viability of Waste-to-Energy plants in the country.

Ministry of Finance may take up the matter as the subject matter is being dealt with by them, especially after the recommendations of Group of Secretaries.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation Sl.No.8)**

The Committee note that the five Pilot Projects were launched by (MNRE) Ministry of New and Renewable Energy with an aggregate capacity of 57 MW. However, out of these five Pilot Projects, only the one at Okhla of 16 MW is in a functional state. The Committee are dismayed to note that two projects could not be completed due to paucity of funds and the plant at Pune is not functional due to technical reasons. The Committee also note that Public Interest Litigation has been filed against the Okhla Waste Management Plant. These are serious issues and, if not resolved, lead to demotivation in the sector and may jeopardize the future activities with regard to waste to energy. The non-commissioning of plants on the ground of paucity of funds is not at all acceptable to the Committee. If issues of such public importance are dealt with in such manner, then the future of the waste to energy sector and its success can only be a point of debate and discussion. The technical glitch at the Pune Plant is not insurmountable but the way it has been dealt with speaks volumes of the lack of adequate effort from the Government side. The Committee, therefore, recommend that-

- (i) There should be no paucity of funds with regard to Pilot Projects undertaken by the Ministry of New and Renewable Energy.
- (ii) Technical reasons for non-operation of a Plant is a commonplace excuse and it cannot be allowed to hamper the operations of the project. This should be resolved in a time bound manner.

(iii) The issues of Public Interest Litigation should be addressed holistically as these may hurt the other projects as well. Hence, effective pre-emptive measures should be taken in this regard before the appropriate bodies to dispel any misgivings regarding the functioning of the plant and its adverse environmental impact in and around it.

### **Reply of the Government**

The subject matter is being dealt with by Ministry of New and Renewable Energy.

Agreed.

Yes. Agreed.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation SI.No.9)**

The Committee note that MSW Management is a State Subject and as per the 74th Amendment to the Constitution, solid waste management as a function needs to be transferred by the State Government to Urban Local Bodies. However, the transfer of this function is yet to take place. In addition to ULBs, solid waste management has also been discharged by State agencies. Thus, the responsibility for planning, designing, implementation, operation and maintenance of the municipal solid waste rest with the State Government agencies and ULB concerned. The Committee find that management of municipal solid waste is not efficient and scientific by the agencies concerned and it is done by street sweeping, incurring most of the expenditure amounting to 70% of the earnings of the local bodies. This also hampers the process of waste collection at source to its final disposal at the energy plants. The Committee, therefore, recommend that:-

- (i) The process of garbage collection should be upgraded by the ULBs and State agencies concerned and be made more scientific and efficient.
- (ii). A proper estimation should be made by the ULBs concerned regarding the approximate quantity of municipal waste generated everyday so as to ensure its supply to the waste energy plant in a definite manner.

## Reply of the Government

Government of India provides 35% grants for setting up efficient garbage collection & transportation system. Moreover, Ministry of Urban Development has signed MoUs with BSNL, MTNL & DIMTS for providing GPS tracking of Garbage Collection Vehicles.

Almost all the ULBs in the Country has already assessed the approximate amount of waste being generated in their jurisdiction, based on their solid waste management activities.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### (Recommendation Sl.No.10)

The Committee note that there are multiple entities involved in collection, transportation, processing and disposal of MSW like Ragpickers, *Kabadiwalas*, Sanitation workers of Municipal Authorities, private contractors who have their own sweeping staff, waste collectors and vehicles to transport the waste from collection points to disposal sites, plant operators, etc. The Committee are of the view that the Urban Local Bodies should adopt a coordinated mechanism for collection, transportation and disposal of MSW. It should be the responsibility of the ULBs to supply the required quality and quantity of MSW to Waste to Energy Plants, failing which a penalty may be imposed on them. Ragpickers and *Kabadiwalas* may be brought into the formal system by the State Governments and ULBs in so that the collection efficiency can be maximised. Therefore, the Committee recommend that:

- (i) ULBs should supply required quality and quantity of MSW at the doorstep of the 'Waste to Energy' Plant failing which a penalty may be imposed on them.
- (ii) Ragpickers and *Kabadiwalas* should be integrated with the formal system by the State Governments and ULBs in order to maximise the collection efficiency.
- (iii) ULBs should make efforts to involve civil society/NGOs/Resident Welfare Associations in management of waste and spreading awareness among the masses.

## **Reply of the Government**

It is proposed that an integrated SWM system should be adopted by an ULB which is run by one operator. This will ensure the supply of required quality and quantity of MSW at the doorsteps of W2E Plants.

As per the Solid Waste Management Rules 2016, it is the responsibility of the Secretary, Urban Development Department in the State or Union territory through the Commissioner or Director of Municipal Administration or Director of local bodies to provide broad guidelines regarding integration of waste picker or informal waste collectors in the waste management system. MoUD has formulated model municipal bye-laws, which has included this provision. The model bye-laws have been circulated to States/ULBs for adoption.

Under SBM, civil societies/NGOs/ Resident Welfare Associations are being involved in management of waste and spreading awareness.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **Govt. of India's Initiatives for promotion of power generation from Municipal Solid Waste**

#### **(Recommendation Sl.No.11)**

The Committee observe that at the Central level, various Ministries, i.e. the Ministry of Urban Development, Ministry of Environment, Forest and Climate Change and Ministry of New and Renewable Energy, etc. are involved in handling Municipal Solid Waste, viz. its collection, transportation, treatment and safe disposal. There is a need for coordinated efforts to be made to solve the problem of garbage and to make Waste to Energy projects successful and viable. A Monitoring Committee, consisting of representatives from all the Central Ministries concerned, along with the representatives of the State Governments and Urban Local Bodies, should be set up to coordinate the efforts at each level and suggest suitable methods and technologies to be adopted, to make the Waste to Energy Plants viable. Therefore, the Committee recommend that:

- (i) Coordinated efforts need to be made to solve the problem of garbage and to make the Waste to Energy Projects successful and viable.
- (ii) A Monitoring Committee, consisting of representatives from all the Central Ministries like the Ministry of New and Renewable Energy,

Ministry Of Urban Development, Ministry of Environment, Forest and Climate Change, etc., along with the representatives of the State Governments and Urban Local Bodies, should be put in place to coordinate the efforts at each level and suggest suitable methods and technologies to be adopted, on a case to case basis, to make the Waste to Energy Plants a success.

(iii) Monitoring Committee may also have technical experts, financial analysts, representatives from private sector, etc.

### **Reply of the Government**

Yes, agreed. Necessary action will be taken in this regard.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation SI.No.12)**

The Committee note that the Central Electricity Regulatory Commission (CERC) has notified Generic tariff for Waste-to-Energy of Rs 7.90 per unit of power for Refuse Derived Fuel (RDF). The Committee are of the view that fixing of tariff by the CERC be treated as indicative/supportive. The right solution will be that the tariff should be decided through competitive bidding. Open competitive bids should be invited has been done by Andhra Pradesh and Punjab. Therefore, the Committee recommend that:

- (i) The practice of tariff determination by the CERC must be reviewed. If need be, the Electricity Act may be amended for the same.
- (ii) Tariff of electricity generated from all the Waste to Energy Plants should be decided through the process of competitive bidding.
- (iii) The initiative of the Government of Rajasthan regarding Waste to Energy Plant to arrive at tariff for Waste to Energy is a welcome step. The pricing of Waste to Energy Power is unique as the difference between the tariff set by CERC and tariff arrived at through competitive bidding should be given to State DISCOMS as royalty.

### **Reply of the Government**

- (i) CERC has given only the indicative tariffs for 2015-16 and the actual rate of purchase of power may be different for different States/UTs based on the rate fixed by the Appropriate Authority.

(ii) There are various bid parameters which can be adopted for selecting an operator for setting up of Waste to Energy Plant. Tariff based bidding is one of the bid-parameter which has to be adopted.

CERC has given only the indicative tariffs for 2015-16 and the actual rate of purchase of power may be different for different States/UTs on the rate fixed by the Appropriate Authority. However, giving royalty to DISCOMS based on the difference between the tariff set by CERC and tariff arrived at through competitive bidding is the policy matter of States/UTs

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

**(Recommendation SI.No.13)**

The Committee note that it has been made mandatory for State DISCOMS to purchase power from the Waste-to-Energy plants at the tariff of Rs 7.90 and this increased cost of electricity would ultimately be borne by the common consumers. The Committee is of the view that waste disposal is the responsibility of the State Governments and the ULBs; as such, the cost should be borne by them and not by the common consumer. The Committee also note that common people are made to pay twice for the disposal of the same garbage; they pay to the local bodies for collection of garbage from their home and again a high rate of electricity has been imposed on them to compensate the producer of electricity from waste. This practice of ensuring 15% to 20% profit to the producer of electricity from waste and taxing common people twice for the same should be avoided. Therefore, to make the Waste to Energy Plants viable, the Committee recommend that:

(i) The big polluters such as restaurants, hotels, marriage halls and other commercial establishments should be asked to develop scientific methods of segregation of waste and its disposal, failing which, they should be made to pay more through tax/cess/fine.

(ii) Some alternate mechanism should be adopted so that common people are not compelled to pay twice for the collection and disposal of garbage.

### **Reply of the Government**

Ministry supports the idea of decentralised waste processing and has included it in model municipal bye-laws. However, the implementation of the same is with the States/UTs/ULBs as the subject matter is being dealt with by them.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **(Recommendation Sl.No.14)**

The Committee note that although the respective Ministries have been implementing a number of Rules, Policies, Promotion Programmes, etc. for support and promotion of Waste to Energy in India, like Manual on Municipal Solid Waste Management; MSW Management and Handling Rules, 2015; Tariff Policy; Ministry of Road, Transport and Highways Notification; Indian Standard on Bio-Gas; custom duty and excise duty exemption, etc., but the desired results have not been achieved so far. Therefore, the Committee recommend that:

- (i) All the Rules, Policies, Programmes relating to the Waste to Energy Sector should be monitored regularly in an integrated manner for their proper and efficient implementation so as to support and promote 'Waste to Energy' in India.
- (ii) Scientific treatment and disposal of municipal solid waste should be made compulsory under the Swachh Bharat Mission.
- (iii) 100% collection and treatment of solid waste should be made a binding criterion for short listing of cities under the Smart City Project and every city should be encouraged to come out with their own proposal for the same in a time bound manner.

### **Reply of the Government**

Yes, agreed.

Under SBM, scientific treatment and disposal of the waste are mandatory for all the Mission cities/towns.

Sanitation including solid waste management is already one of the eligible components under Smart Cities Mission and solid waste management

includes 100 % collection and treatment of solid waste. Therefore, no revision of guidelines is envisaged at this point of time.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

## **Cluster model of the State Government of Andhra Pradesh**

### **(Recommendation Sl.No.15)**

The Committee have observed that in the State of Andhra Pradesh, Project Developers are required to set up a Waste to Energy Plant on a PPP mode on a Design, Build, Finance, Operate and Transfer (DBFOT) basis and are selected through a tariff based competitive bidding process. The ULBs are responsible to deliver waste to the Developer at the identified project site/location at their own cost without paying any Tipping Fee to the Developer and the APDISCOMs are responsible for procurement of power generated from the project. There is also a provision of scientific landfilling of the rejects from the WtE Plant and development of the scientific landfill by the Developer at its own cost. The Committee appreciate the efforts of the State Government of Andhra Pradesh and are of the view that the Andhra Model may serve as an example to other States to come forward and adopt innovative methods for scientific disposal and treatment of Municipal Solid Waste. That being the case, there is a need to showcase the few success stories that the country have achieved in the field of Waste to Energy so as to spread awareness and encourage also States to come up with innovative methods, appropriate to their native conditions. Therefore, the Committee recommend that:

- (i) The Committee laud the efforts of the Govt. of Andhra Pradesh for their initiative in the MSW management and taking a lead in the country in Waste to Energy Sector.
- (ii) States should be encouraged to come forward and adopt innovative methods for scientific disposal and treatment of Municipal Solid Waste.
- (iii) The success stories in the field of Waste to Energy should be showcased so as to spread awareness and encourage more States to come up with innovative methods which suit their local condition the best.



## **Reply of the Government**

No comments.

Agreed.

Ministry had already put some of the successful case studies of solid waste management including WtE in the e-learning portal for Swachh Bharat (Urban). Further, Ministry is in the process of preparing 100 e-learning Modules in sanitation including WtE. These may be referred by the ULBs for capacity building and selecting a suitable technology.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

## **Global Status of Waste to Energy**

### **(Recommendation SI.No.16)**

The Committee note that there are about 2200 Waste to Energy Plants in the world with a disposal capacity of about 255 million tonnes of waste per year. Modern Technologies have been deployed, especially in Europe, Japan, Australia, China and USA. The Committee understand that the European Union's strategy is to become a recycling society, seeking to avoid waste as far as possible and to reuse waste generated as a resource. The Committee also note that the situation prevailing in various countries indicates that concerted efforts are being made to minimize waste generation and maximize recycling of waste. Incineration or mass burning is in vogue in counties where availability of land is scarce. However in USA, as per USEPA data of 2013 only 86 W to E plants are currently operational in 24 States with a capacity of 97000 TPD generating 2790 MWH. Of the MSW generated only 7% is incinerated, 24 % is recycled and the remaining 69 % is landfilled. From 1995 to 2005, strict emission norms, especially for dioxins and furans prevented more plants to be set up, full thrust on recycling, reuse and recovery. In view of the above, the Committee recommend that best practice from other countries which have been running Waste to Energy Plants successfully should be suitably studied and where possible adapted to the Indian conditions to make Waste to Energy Projects in the country viable, efficient and safe for the environment.

## **Reply of the Government**

Yes. Agreed.

[Ministry of Urban Development  
O.M. No. 6/4/2015-2015-SBM (Pt.) dated 4<sup>th</sup> November, 2016]

### **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**

**RECOMMENDATION/OBSERVATION IN RESPECT OF WHICH THE  
FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED**

**NIL**

**New Delhi  
.....December, 2016  
Agrahayana....., 1938 (Saka)**

**DR. VIRENDRA KUMAR,  
Chairperson,  
Standing Committee on Energy**

## **APPENDIX I**

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

The Committee sat from 0930 hours to 1000 hours.

#### **PRESENT**

**Dr. Virendra Kumar - Chairperson**

#### **LOK SABHA**

22. Shri Sultan Ahmed
23. Shri Bhagat Singh Koshyari
24. Shri Arun Kumar
25. Shri Ravindra Kumar Pandey
26. Shri Vinayak Bhaurao Raut
27. Shri Bhanu Pratap Singh Verma

#### **RAJYA SABHA**

28. Shri La Ganesan
29. Shri Javed Ali Khan
30. Dr. Pranbhakar Kore
31. Shri Shamsheer Singh Manhas
32. Dr. Anil Kumar Sahani

#### **SECRETARIAT**

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

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

- i) 'Energy Access in India – Review of current Status and Role of Renewable Energy'.
- ii) Action Taken Report on the recommendations contained in the Twentieth Report (16<sup>th</sup> Lok Sabha) on 'Power Generation from Municipal Solid Waste'
- iii) Action Taken Report on the recommendations contained in the Twelfth Report (16<sup>th</sup> Lok Sabha) on 'Commercial Losses'
- iv) Action Taken Report on the recommendations contained in the Fifteenth Report (16<sup>th</sup> Lok Sabha) on Demands for Grants of the Ministry of Power for the year 2016-17, clause by clause.

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

*The Committee then adjourned.*

## APPENDIX II

(Vide Introduction of Report)

### ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE OBSERVATIONS/ RECOMMENDATIONS CONTAINED IN THE TWENTIETH REPORT (16<sup>TH</sup> LOK SABHA) OF THE STANDING COMMITTEE ON ENERGY

(i)	Total number of Recommendations	16
(ii)	Observations/Recommendations which have been accepted by the Government:	
	Sl.Nos. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15 and 16	
	Total:	16
	Percentage	100%
(iii)	Observations/Recommendations which the Committee do not desire to pursue in view of the Government's replies:	
	Nil	
	Total:	0
	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%