**BUREAU OF INDIAN STANDARDS**

**AGENDA**

**AGENDA OF THE SECOND MEETING OF THE WASTE MANAGEMENT SECTIONAL COMMITTEE, EED 8**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name of the Committee** | **No. of Meeting** | **Date** | **Time** | **Venue** |
| **Waste Management Sectional Committee, EED 8** | Second | 28 November 2024  (Thursday) | 1100 h | Green Room (Samvaad), Manak Bhawan, Bureau of Indian Standards,  9, Bahadur Shah Zafar Marg,  New Delhi |

**Chairperson:** Dr Anuradha Shukla, In personal capacity (Former Chief Scientist CSIR-CRRI), New Delhi

**Member Secretary:** Shri Matcha Arun Kumar, Scientist-B/Assistant Director, BIS

**Item 1 WELCOME AND OPENING REMARKS**

**1.1** Welcome

**1.2** Opening Remarks by the Chairperson

**1.3** Constitution of Resolution Drafting Committee

**Item 2 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING**

The minutes of the 1st meeting of Waste Management Sectional Committee, EED 8 held online on 24 September 2024 were circulated through email dated 11.10.2024. No comments were received on the minutes.

*The Committee may* ***confirm the minutes of the meeting.***

**Item 3 SCOPE, PROGRAM OF WORK AND COMPOSITION**

**3.1 Scope**

**3.1.1** The present scope of EED 8 is given below:

“To formulate Indian Standards on i) Specifications, Terminology, methods of sampling and characterization of solid waste (Excluding Nuclear Waste & Biomedical Waste but includes domestic biomedical waste), ii) Codes of Practices on handling and management of Solid wastes (Excluding Nuclear Waste & Biomedical Waste but includes domestic biomedical waste), iii) Guidelines and codes of practice for Solid waste disposal (Excluding Nuclear Waste & Biomedical Waste but includes domestic biomedical waste).

Liaison with:

1. ISO/TC 275 - Sludge recovery, recycling, treatment and disposal - Participating (P)
2. ISO/TC 297 - Waste collection and transportation management - Participating (P)

**3.1.2** In the first meeting of Environment and Ecology Division Council (EEDC), held on 08.10.2024, the Council deliberated on the scope of different Sectional Committees under EEDC and allocated the responsibility to a working group (EEDC/WG 1) to propose modified scopes to the sectional committees in alignment with the scope of new division council (EEDC) after thorough discussion. Accordingly, the EEDC/WG 1 has proposed the following modified scope of Waste Management Sectional Committee, EED 8 as follows

“To formulate Indian Standards on

i) Terminology, methods of sampling, method of test, characterization and categorization of waste (Excluding Nuclear Waste),

ii) Handling and management of wastes (Excluding Nuclear Waste) including waste audits and data collection,

iii) Waste disposal (Excluding Nuclear Waste)

iv) Services related to waste management

v) Waste to energy

Liaison with:

1. ISO/TC 275 - Sludge recovery, recycling, treatment and disposal - Participating (P)
2. ISO/TC 297 - Waste collection and transportation management - Participating (P)

*The committee may* ***deliberate and discuss****.*

**3.2** **Program of Work**

The program of work of the Waste Management Sectional Committee, EED 8 is placed at **Annex A**.

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*The Committee may kindly* ***review and decide***

**3.3 Composition**

**3.3.1** The present composition of the Committee with the attendance of last three meetings (of EED 8), is placed at **Annex B.**

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**3.3.2 Co-option requests received**

**3.3.2.1 DRDO – Centre for Fire, Explosive and Environment Safety (CFEES)**

In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee, EED 8) held on 28.06.2024, the committee deliberated on the co-option request received from DRDO – CFEES vide their letter no. CFEES/TCP/BIS dated 19.06.2024 and suggested the secretariat to write to DRDO – CFEES seeking clarification on what are the areas related to solid waste management that CFEES is working and how they would be contributing in the Solid Waste Management Sectional Committee, CHD 33.

Accordingly an email was sent to DRDO – CFEES to provide their inputs on the areas related to solid waste management where CFEES can contribute. In response through email dated 19.11.2024, Dr S. Mary Celin informed that “One of the core domain areas of CFEES is development of eco-friendly/Advanced  technologies for hazardous waste management (E.g. Explosives and other high energy material waste) from Defence perspective and  Solid waste management is outside the scope of our current research”.

*The Committee may* ***deliberate and decide****.*

**3.3.2.2 Maruti Suzuki India Ltd.**

A Co-option request has been received from Maruti Suzuki India Ltd., through email dated 08.11.2024 suggesting Shri Gururaj Ravi, Vice President- Global Regulatory Affairs & Policy and Shri Raj Kumar Dwivedi, Dy. General Manager – Environment Regulations as nominated members.

Brief profile of both the members is attached at **Annex C.**



*The Committee may* ***deliberate and decide.***

**3.3.2.3** The Co-option requests have been received from Dr Rohidas Gangaram Bhoi and Dr Suresh Sundaramurthy, Maulana Azad National Institute of Technology, Bhopal through BIS portal for membership in EED 8 in individual capacity. Their detailed CV’s are attached at **Annex D & Annex E.**

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*The Committee may* ***deliberate and decide.***

**3.4** The present composition, terms of reference and timeframe of the panel and working groups under EED 8 are placed at **Annex F.**



*The Committee may kindly* ***review and decide.***

**Item 4 DRAFT STANDARDS/AMENDMENTS FOR FINALIZATION**

**4.1 IS 18520 : 2024 Solid Waste Management Segregation Collection and Utilization at Commercial Facilities Shops Markets Malls etc. – Guidelines**

**4.1.1** In the 18th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8), held on 08.02.2024, the committee deliberated on the comments received from Manak Manthan conducted by Ahmedabad Branch Office (AHBO). Based on the discussion on the comments, the committee decided to issue an amendment to IS 18520. The decisions on comments received is placed below:



**4.1.2** In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024, the Chairperson requested all the members for providing inputs on definitions of ‘non-industrial biomedical waste’ and ‘commercial facility’. Inputs received on definition of commercial waste is provided below:

|  |  |
| --- | --- |
| **Inputs** | **Member** |
| *Commercial Facility means any facility that is used for retail stores, restaurants, office buildings, laundries, and other private business and service establishments or similar enterprises* | Shri T Raghavendra Rao, Director, Enecovery Waste Solutions Pvt Ltd. |
| *Commercial Facility means any facility that is used for commercial purposes like retail stores, shopping centres, hotels, restaurants, bars, eateries, trading or banking or insurance establishment, an establishment or administrative service in which persons employed are mainly engaged in office work, including offices and eating facilities of schools and colleges, laundries, a theatre or any other place of public amusement or entertainment and similar facilities* | Shri T K Bandopadhyay, Indian Centre for Plastics in Environment, Mumbai |

*The committee may* ***deliberate and decide****.*

**4.1.3** No inputs received on the definition of ‘non-industrial biomedical waste’ from the committee members.

*The committee may* ***deliberate and decide****.*

**4.2 Doc EED/8/22371 Thermal Processing of Horticulture and Wet Waste – Guidelines**

In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024, the committee deliberated on the comments received during the wide circulation phase.The committee agreed to the observations provided by Shri T Raghavendra Rao and decided to modify the draft as per the discussion held. Also the committee deliberated that stainless steel specifications mentioned in the draft should be conforming to their respective Indian Standard. Shri T Raghavendra Rao agreed to provide the draft after incorporation of the respective Indian Standard in the document wherever necessary. Further the title of the document shall be modified as “Thermal Processing of Horticulture and Wet Waste – Guidelines” and as this is a guideline standard, the word “shall” will be replaced by “should” wherever applicable.

Accordingly, the draft has been modified and circulated to all the members for providing their inputs, if any, vide email dated 04.09.2024. Comments received from Capt. Manju Minhas vide email 12.09.2024 have been incorporated into the draft (highlighted therein) in consultation with Shri T Raghavendra Rao, Enecovery Waste Solutions Pvt Ltd and is attached at **Annex G.**

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*The committee may* ***finalize*** *the document for printing.*

**4.3 Doc no: EED 8/22416 Revision of IS 12662 (Part 2) : 2002 Vehicles for Collection of Municipal Solid Wastes Part 2 Guidelines for Maintenance**

In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024, the committee deliberated on the comments received on Doc no EED/08/22416 and finalized the document for printing. Currently the document is under print.

*The committee may* ***note****.*

**4.4 Doc: CHD 33 (20251) Small Incinerators for Sanitary Napkins- Guidelines and General Requirements**

This document EED/8/22416 does not hold valid at present as a substantial change is expected in this draft after receiving the output the R&D project. Hence document has been dropped with the approval of Chairperson EED 8. Fresh draft will be prepared after receiving the report of R&D project and deliberation by the committee on the same.

*The committee may* ***note.***

**Item 5 DRAFTS UNDER PREPARATION**

**5.1 Review of IS 17862:2022 Storage, Collection, Dismantling and Recycling of E-Waste — Guidelines**

**5.1.1** IS 17862 : 2022 Storage, Collection, Dismantling and Recycling of E-Waste — Guidelines was published by BIS in March 2022. Ministry of Environment Forest and Climate Change has published E-Waste (Management) Rules, 2022 through gazette dated 02nd November 2022. Member Secretary has shared the above said documents to the committee members via email dated 04.07.2023. Shri Pradeep Khandelwal and Prof Sadhan K Ghosh have provided their comments which are given below:



**5.1.2** In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024 the committee decided that the standard needs to undergo thorough revision in view of the revised E-waste Management Rules 2022 and requested the secretariat to circulate the document and decided to constitute a panel in this regard. The committee requested Shri T K Bandopadhyay to include/to forward the details of experts in the field of e-waste management. Also the Chairperson, suggested Dr Sanchita Jindal as the convenor of this panel who will decide on its composition in consultation with the member secretary. The Chairperson requested the member secretary to confirm her willingness for being the convenor to this panel. Dr Sanchita Jindal confirmed her convenorship for the panel vide email dated 12.11.2024.

**5.1.3** Also Shri T K Bandopadhyay has suggested the following experts working in e-waste management sector who can be co-opted in this panel

i) Dr Payal Nandurkar, WE The Recycling Company, Bhiwandi, Maharashtra

ii) Shri P Parthasarathy

*The committee may* ***suggest*** *experts who can be co-opted in the Panel.*

**5.2 Management of Packaging Waste in Manufacturers Premises including Producer Responsibility after Disposal by the User – Guidelines**

**(EED 8/Panel 5)**

In the l7th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 26.10.2023, the committee decided to create a Panel for formulation of standard on “Management of Packaging waste in manufacturers premises including producer responsibility after disposal by the user – Guidelines” with the composition as follows:

1. Dr T K Bandhopadhyay, Indian Centre for Plastics in Environment, Mumbai (Convenor)

2. Dr Sanchita Jindal, Former Scientist, MoEF&CC

3. Dr R K Joshi, Department of Science and Technology, New Delhi

4. Shri T Raghavendra Rao, Enecovery Waste Solutions Private Ltd, Mumbai

5. Shri Pradeep Khandelwal, Retd Chief Engineer, MCD

6. Dr Santosh Yadav, Confederation of Indian Industry

7. Dr Siksha Swaroop Kar, CSIR – Central Road Research Institute

8. Dr Suneel Pandey, The Energy and Resources Institute, New Delhi

9. Shri Ritesh Prasad Gurung, Central Pollution Control Board, New Delhi

10. Representation from Tetra Pak

11. Shri Pankaj Uppal, PET Packaging Association for Clean Environment, New Delhi

12. Representation from Indian Institute of Packaging

13. Representation from Amazon

The first meeting of **Panel for formulation of standard on Management of Packaging waste in manufacturers premises including producer responsibility after disposal by the user – Guidelines CHD 33: P7 (now EED 8: P5)** was held on 20.12.2023. The panel deliberated on the need of the document provided by Dr T K Bandhopadhyay and was of the view that the scope of the project needs to be defined clearly to avoid any ambiguity. The working draft is attached as **Annex H.**



In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024, the committee decided that this document will be confined to plastic packaging only.

Dr T K Bandopadhyay informed the committee that by the end of July, a panel meeting shall be convened to discuss the draft and requested the committee to provide 3 months of time for providing the Preliminary draft to the committee. Due to the creation of Environment and Ecology Division Council and subsequent shifting of this committee from Chemical Division Council to Environment and Ecology Division Council, second meeting of this panel couldn’t be conducted.

*The Committee may* ***deliberate and decide.***

**5.3 Refuse Derived Fuel**

**(EED 8/Panel 4)**

The committee during 10th meeting held on 16.08.2021 received a draft on the subject for formulation of a new Indian Standard. The committee formulated a panel CHD 33:P5 (now EED 8:P4) during the 10th meeting held on 16.08.2021 to review the draft prepared by Dr Mazumdar with composition as follows:

1. Dr N B Mazumdar, International Academy of Environmental Sanitation & Public Health, New Delhi (Convenor)
2. Dr Hitesh Sukhwal ,Cement Manufacturers Association
3. Prof Sadan K Ghosh (retd), Jadavpur University
4. Shri Pradeep Kumar Khandelwal, Retd. Chief Engineer, MCD
5. Shri Prateek Sharma, National Council for Cement and Building Materials, Faridabad

First meeting of this panel was held on 14.11.2023 and followed by the second meeting on 19.06.2024. In the second meeting, the panel deliberated on the comments received from Cement Manufacturers Association (CMA) and NCCBM. The minutes of the second meeting is attached at **Annex I.**



The panel in the second meeting suggested to co-opt experts from the following organisations

1. Steel Authority of India Limited
2. Coal India Limited
3. National Thermal Power Corporation
4. Re Sustainability (RAMKY)
5. Municipal Corporation of Delhi

*The committee may* ***deliberate and decide.***

**5.4 Revision of IS 10447:1983 Guidelines for utilization and disposal of solid waste from integrated steel plants**

**(EED 8/Working Group 1)**

In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024, the committee suggested to create a working group for revision of this standard with the composition as follows:

1. Dr. Siksha Swaroop Kar, (Convenor)
2. Shri D. Satish Kumar , JSW Steel Limited, Bellary
3. Dr. Yogesh Dhoble , National Institute of Science Communication and Information Resources,
4. Shri Rajneesh Kumar Gupta , SAIL
5. Shri Ritesh Kumar , Tata Steel Limited, Jamshedpur
6. Shri Utsav Kashyap , Tata Steel Limited, Jamshedpur
7. National Metallurgical Laboratory, Jamshedpur-Nomination awaited
8. Prof Sadhan K Ghosh (Retired), In personal capacity

The first meeting of this working group has been held on 12.11.2024 where it has been deliberated that a thorough revision of this standard is required. Minutes of the working group are in preparation.

The revision of this document was taken up with document number EED/8/20270 in BIS portal. This does not hold valid at present as a substantial change is expected in this draft after the first meeting of working group. Hence document has been dropped with the approval of Chairperson EED 8. Fresh draft will be prepared after receiving the inputs from the working group.

*The Committee may* ***note.***

**Item 6 NEW SUBJECTS**

The Bureau of Indian Standards (BIS) conducted a 'Workshop on Standardization for Environment and Ecology' on 12 August 2024 at Yashobhoomi, Dwarka, New Delhi. The workshop desired to gain inputs on subject areas to be taken up for standardization, institutional mechanisms for effective synergy with various stakeholders, strategy for promoting and integrating research with the standardization work and implementation of standards in the concerned area. The technical session was designed to seek expert recommendations during the workshop based on the collaborative discussions among participants. Delegates were divided into eight specialized panels, each focusing on unique topics relevant to the objectives of the Environment and Ecology Division Council (EEDC) in which one of the topic was “Waste Management’. Recommendations on new subjects for standardisation from the panel is given below:

1. Guidelines for the management of domestic hazardous waste and sanitary waste;
2. Guidelines for treatment and disposal of sewage sludge;
3. Guidelines for waste audits including data collection templates for bulk waste generators;
4. Waste management guidelines for Hilly areas and coastal zones;
5. Waste management for events including sports events, weddings etc.;
6. Standards for Waste processing units (similar to biogas units already done);
7. Guidelines for cottage industries specific for Indian scenario;
8. Compendium of different waste management technologies;
9. Standards for expired pharma waste from households; and
10. Guidelines for source reduction of e-waste, material life extension.

The committee may ***deliberate and decide***.

**Item 7 R&D PROJECTS UNDER THE COMMITTEE**

**7.1** During the 17th meeting of the Sectional Committee CHD 33 (now EED 8) held on 26.10.2024, the Committee decided to conduct an R&D project with title “Evaluating the efficacy of small incinerators for incineration of sanitary napkins” with Terms of Reference attached at **Annex J**. The review Committee of BIS also approved the project in its meeting held on 12 December 2023 followed by approval of DG, BIS. Subsequently the ToR was published at BIS portal to invite project proposals. A Research Evaluation Committee was formulated wherein Dr N B Mazumdar, Sulabh International Social Service Organisation and Shri T Raghavendra Rao, Enecovery Waste Solutions Pvt. Ltd. were nominated as members from CHD 33 (now EED 8), along with BIS officials to examine the technical and financials bids of the proposals received by BIS on the R&D project.



After the examination, the R&D project on ‘**Study of evaluating the efficacy of small incinerators for incineration of sanitary napkins’** was allotted to IIT Madras with Dr. Indumathi Nambi as Project Leader under the conditions provided in ‘Guidelines for Research and Development Projects for Formulation and Review of Standards’.

The mode of payment for Research & development projects shall be as follows:

a) First instalment up to a maximum of 30 percent of the total approved project cost would be released after approval of the project.

b) Second instalment to the extent of 50 percent of the approved estimated cost would be released on the submission of progress report along with the report on utilization of the 75 percent of the fund and acceptance of the same by the Sectional Committee.

c)The balance amount shall be released after submission of the final project report along with utilization certificate for the fund released and its acceptance by the Sectional Committee.

*(Note: Release of each instalment is subject to satisfactory progress, required stage - wise deliverables and submission of the Utilization Certificate (UC) as per Form GFR12-A of GFR 2017 along with the statement of expenditure (SoE) issued by the Competent Authority.)*

Subsequently, the first instalment of Rs. 2,70,000 (excluding TDS) for the R&D project was sanctioned to IIT Madras on 27 June 2024, hence, the start date of the project is 27 June 2024 as per the ‘Guidelines for Research and Development Projects for Formulation and Review of Standards’.

In line with the requirements mentioned in the ToR to review the project, Dr Indumathi Nambi, Project Leader of the R&D has submitted a literature review report to BIS on 13 September 2024 which was reviewed by the Waste Management Sectional Committee EED 8 in its first meeting held on 24.09.2024.

The Committee made following suggestions to the team to look into while carry forward the work:

i) The report may elaborate more on the availability of standards which are targeted towards the incineration of sanitary napkins in other developed countries.

ii) As the report mentions that certain heavy metals are reported in the ash, it is advised to increase the number of test samples to arrive at a certain average of concentrations being reported.

iii) Results of every sample tested needs to be provided in a tabular form in the report rather than only specifying the average

iv) Toxicity Characteristic Leaching Procedure (TCLP) testing for ash may be conducted to study the leaching properties of heavy metals from ash

v) Constraints and challenges faced during the study may be incorporated in the report.

The Committee examined the request received from Dr Indumathi Nambi, Project Leader, IIT Madras to provide extension of work under R&D project for two months to complete the study due to the challenges being faced. Dr Indumathi presented the progress of the report and the challenges being faced, specifically on the availability and operating conditions of incinerators for measurement of pollutants. Accordingly timeline for the completion of project has been extended for a period of two months. Final date of completion of project is 27.12.2024.

As per the Terms of Reference, Dr Indumathi Nambi, Project Leader has submitted second progress report to BIS on 15.11.2024 which is attached as **Annex K**.

Dr. Indumathi Nambi have been invited in the meeting to present the progress of the R&D project to the Committee for its evaluation and approval for further release of the grant.



*The Committee may kindly* ***review, deliberate, and recommend***.

**Item 8 INTERNATIONAL ACTIVITIES**

**8.1** BIS (India) is a ‘P’ (Participating) member in the ISO committees **ISO/TC 275 ‘Sludge recovery, recycling, treatment and disposal’** and ISO/TC 297 **‘Waste Collection and Transportation Management’** and has been casting ISO ballots under them with the inputs received from the Committee Members.

BIS has voting rights on this sub-committee and is obligated to vote on all the ballots circulated under these committees. The ballots received from ISO are circulated to committee members along with a last date of comments. Members are required to review the ballots and provide approval/disapproval/abstention to BIS along with justification for timely voting on these ballots.

**8.2** The scope and program of work of ISO/TC 275 is placed as **Annex L** below:



**8.3** The scope and program of work of ISO/TC 275 is placed as **Annex M** below



*The Committee may kindly* ***note and consider.***

**8.4 Meetings of ISO/TC 275 & ISO/TC 297**

**8.4.1 Meetings of ISO/TC 275**

There are no meetings of ISO/TC 275 and its working groups scheduled as of now.

*The committee may* ***note.***

**8.4.2 Meetings of ISO/TC 297**

There are no meetings of ISO/TC 297 and its working groups scheduled as of now.

*The committee may* ***note.***

**8.4.3 Report of the 8th Plenary Meeting of ISO/TC 297**

In the 19th meeting of Solid Waste Management Sectional Committee, CHD 33 (now Waste Management Sectional Committee EED 8) held on 28.06.2024, the committee approved the following delegation to participate in 8th Plenary meeting of ISO/TC 297 Waste collection and transportation management is held during 22nd to 24th October 2024 in Stockholm, Sweden (Hybrid mode)

a) Shri Pradeep Kumar Khandelwal, Retd. Chief Engineer, MCD.

b) Shri Matcha Arun Kumar, Member Secretary, EED 8

The above Indian delegation attended the following meetings during 22nd to 24th October 2024 through virtual mode.

|  |  |  |
| --- | --- | --- |
| **TC/SC/WG/JWG** | **TITLE** | **DATE OF MEETING** |
| ISO/TC 297/AHG 1 | Research and investigation regarding post-consumer thermoplastics collection and transportation | 22 October 2024 |
| ISO/TC 297/WG 2 | Waste collection and transport vehicles | 23 October 2024 |
| ISO/TC 297 | Waste Collection and Transportation Management | 24 October 2024 |

The report of the Indian delegation, along with their recommendations, is enclosed as **Annex N** below for consideration of the committee:



*The Committee may kindly* ***consider and decide.***

**Item 9 DATE AND PLACE OF NEXT MEETING**

As per the quarterly meeting plan, dates of the next SC meeting may be considered.

*The Committee may* ***decide*** *the next meeting date.*

**Item 10 ANY OTHER BUSINESS**