BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

Executive Application No. 39 of 2023
In
Original Application No. 400 of 2019

In the matter of:
Social Action for Forest and Environment ……..Applicant

Versus

Union of India & Ors. ……Respondent

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Filed by:-

DATED:-23-09-2024

NEW DELHI

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BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH AT NEW DELHI
EXECUTION APPLICATION NO. 39 OF 2023
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IN THE MATTER OF:-

Social Action for Forest and Environment (SAFE) Applicant

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RESPONSE TO THE COMMON OBJECTIONS FILLED BY THE APPLICANT TO THE REPLY AFFIDAVIT DATED 18.01.2024 & 20.03.2024 FILED BY RESPONDENT NO. 2 – CENTRAL POLLUTION CONTROL BOARD (CPCB)

1. That, the Hon'ble NGT vide order dated 05.07.2024 has sought the reply of CPCB in the instant matter. Thereby, the reply is made in succeeding paragraphs.

2. That, at the outset, the answering respondent denies all claims, contentions, allegations and averments against it in the above Original Application (OA) contrary to anything stated or submitted in this reply. Nothing in the OA may be deemed to have been accepted or admitted by the answering Respondent for want of a specific denial, save any averment which has been expressly admitted hereinafter.

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3. That, CPCB is a statutory Board constituted under Section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (hereinafter referred to as

"Water Act, 1974"). It performs the functions under the Water Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981 (hereinafter referred to as "Air Act, 1981") and the Environment (Protection) Act, 1986.

Preliminary Submission:

1. That in the matter of OA No.400/2019 titled as Social Action for Forest and Environment (SAFE) vs. Union of India and Others filed before Hon'ble NGT, Principal Bench (PB), New Delhi, the issue under consideration was the mismanagement of Waste Tyres / End of Life Tyres (ELTs) by Tyre Pyrolysis Oil (TPO) industries. The Hon'ble NGT while disposing the matter on 07- 11-2022 issued following directions:

". We have heard learned Counsel for the parties and given further consideration to the issue in the light of above material.

It is seen that action has been taken against number of non- complaint units but there still remains gap in the units which are non- compliant and units against whom action has been taken to close them till compliance. Such gaps need to be bridged at the earliest in the interest of rule of law and environmental good governance. Tyre Pyrolysis Oil Units (TPOs) need to follow 'Zero Liquid' and 'Zero Emission' norms. Further, carbon produced during the process needs to be utilized in cement industries. Carbon material should not be simply transported to landfills.

Accordingly, we direct that non-compliant units be closed till compliance expeditiously. CPCB may finalize the classification of the units so that

application norms can be enforced. Revised SOP may be finalized by the CPCB and MoEF&CC in light of discussion in today's hearing and above observations within one month. SOP may also provide for certifying the fuel quality standards of pyro-oil as per norms of the Petroleum Ministry."

2. That the petitioner has filed the instant Execution application alleging non-compliance of the directions of 07.11.2022 of the Hon'ble NGT by MoEF&CC & CPCB. The matter was listed on 11.07.2023 where the Hon'ble NGT has directed for serving notice to MoEF&CC & CPCB and for filing their reply in the said context. The matter was then listed on 19.01.2024.

3. That on 18-01-2024 the CPCB had filed its compliance report to the present EA filed by the petitioner. Subsequently the petitioner has filed Common objection on reply affidavit filed by CPCB on 18-01-2024. Further in view of the directions 19-01-2024 issued by the Hon'ble NGT, the CPCB filed its report on 20.03.2024. The matter was last heard on 05-07-2024, where the Hon'ble NGT has asked CPCB to file reply to the Common objection filed by the petitioner to the report of CPCB.

REPLY

That the Para wise comments on the common objections to the report of CPCB are as follows:

1. That in response to the contents of para no.1 of the objections filed by the applicant, it is submitted that the CPCB has duly complied with the directions

issued by the Hon'ble NGT while disposing the matter on 07.11.2022. The actions taken by CPCB were submitted vide its affidavit dated 18.01.2024 and the same are herein re-iterated for ready reference please;

- CPCB has written to all SPCBs/PCCs for the implementation of the orders dated 07.11.2022.
- CPCB has revised Standard Operating Procedure (SOP) on "Recycling of Waste Tyre Scrap for the recovery of Tyre Pyrolysis Oil, Pyro Gas and Char in Tyre Pyrolysis Oil (TPO) Units" which has been prepared based on the outcomes of 07 studies carried out by CPCB, 70 studies carried out by SPCBs, and suggestions made by the petitioner and stakeholders. The SOP were finalized in consultation with the expert members from NEERI & IIT Delhi.
- CPCB circulated the revised SOP to all SPCBs/PCCs vide email dated 19.01.2024 for its implementation.
- CPCB has written to MoPNG & BIS seeking details on Fuel Quality specifications of TPO vide letter dated 13.12.2023.
- CPCB sought compliance status of existing TPOs in the country.
- CPCB has categorized TPO units into "Orange Category" and the same was conveyed to all SPCBs/PCCs for implementation and the same was circulated vide letter dated 30.11.2023.

2. That in response to the contents of para no.2 of the objections filed by the applicant, the same are not admitted and denied in totality. It is humbly submitted that the CPCB has duly complied with all the directions issued by the Hon'ble NGT while disposing the matter and the details of compliance have already been furnished. Regarding consideration of recommendations made by the applicant during the revision of SOP, it is humbly submitted that

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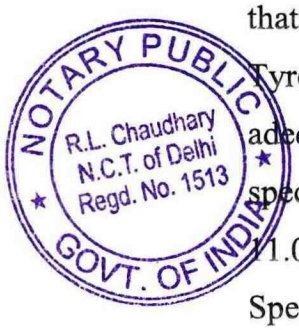
SOP before finalization, the draft SOP was circulated among stakeholders and also placed in the public domain seeking comments including from the petitioner and finalized after considering the comments so received. Point wise details on action taken by CPCB on the representation of the applicant is annexed herewith as **ANNEXURE-I.**

3. That in response to the contents of para no.3 of the objections filed by the applicant, it is humbly submitted that in response to observations made by the Hon'ble NGT vide its order dated 19.01.2024, CPCB has already submitted its report before the Hon'ble NGT on 20.03.2024. A gist of actions taken by CPCB is summarized as below:

- The revised SOP was circulated to all SPCBs/PCCs vide email dated 19.01.2024 for its implementation.
- An E-Mail was sent on 23-02-2024 to all SPCBs/PCCs for submission of information on Tyre Pyrolysis Oil generated, industries using Tyre Pyrolysis Oil and also sought answer to the question, whether Tyre Pyrolysis Oil is listed as "Approved Fuel" in their respective States?
- As per the response of SPCBs where Tyre Pyrolysis units exits, it is observed that Tyre Pyrolysis Oil is mostly used in aluminium industries, cement industries, furnace, and energy sector industries. Further as per the submission received, the Tyre Pyrolysis Oil is not permitted to be used in Andhra Pradesh, Jammu & Kashmir, Maharashtra, Uttarakhand and Delhi-NCR.
- A meeting through virtual mode had been convened on 11.03.2024 which was attended by Expert Member from NEERI, Oil sector expert (Former Scientist 'F' CSIR-IIP Dehradun), officials from MoEF&CC, MoPNG, BIS,

SPCBs/PCCs & CPCB, whereby, discussions were concluded over usage of Tyre Pyrolysis Oil and status of its inclusion in the list of approved fuels as issued by SPCBs/PCCs. The experts and other participants in the meeting were of the opinion that Tyre Pyrolysis Oil can be compared with furnace oil (FO) and can be used as its substitute in those industries where FO has been permitted. It was also observed that Tyre Pyrolysis Oil has lower carbon number, lower Sulphur content and hence emissions (PM and SOx) from usage of tyre pyrolysis oil (TPO) are expected to be lower than that of emissions from FO. Hence, SPCBs/PCCs may consider permitting Tyre Pyrolysis Oil also in such industries where FO has been permitted and adequate air pollution control system has been installed to meet the specified emission norms. The minutes of the meeting dated 11.03.2024 including Typical proposed Tyre Poyrolysis Oil Specification is annexed herewith as **ANNEXURE-II.**



- A Letter was sent on 20-03-2024 to SPCBs/PCCs for implementation of revised SOP and for ensuring Zero Liquid Discharge (ZLD) and general gaseous emission standards while issuing consent to establish & operate under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981.
- Reminder letter had also been sent on 20-03-2024 to MoPNG and BIS seeking fuel quality specifications for TPO.

4. That no comments are offered over contents at para no.4 of the objections filed by the applicant.

5. That in response to the contents of para no.5 of the objections filed by the applicant, it is humbly submitted that CPCB has filled its compliance report in response to Hon'ble NGT directions dated 19.01.2024.

6. That no comments are offered over contents at para no.6 of the objections filed by the applicant.

7. That in response to the contents of para no.7 of the objections filed by the applicant, the averments made in the Para are not admitted and denied in totality. It is humbly submitted that the Fuel quality analysis of TPO from 7 studies carried by CPCB has already been shared by CPCB vide its report dated 23.10.2021. In the report dated 23.10.2021, it has been concluded that the value of sulphur content, calorific value, sediment, lead, arsenic, cadmium+ chromium- nickel, PAH, Total halogens, PCBs, and water content in the TPO is well within the limits specified for fuel oil obtained from the recycling of waste oil and the same is also provided in the schedule V Part B of Hazardous & Other waste (M&TM) Rules 2016)". The summarized Fuel quality analysis of TPO from seven (07) studies carried by CPCB is annexed herewith as **ANNEXURE-III .**

8. That in response to the contents of para no.8 of the objections filed by the applicant, it is humbly submitted that the checking of Fuel adulteration is being dealt by Ministry of Petroleum & Natural Gas. As far as the issues of Tyre Pyrolysis Oil meeting the prescribed standards is concerned, CPCB in the revised SOP has clearly mentioned that the Tyre Pyrolysis Oil unit are required to fulfil the fuel quality as specified by Ministry of Petroleum and

Natural Gas / Bureau of Indian Standards as and when the same gets notified. Additionally, the concerned SPCBs/PCCs will be ensuring the compliance of the fuel quality standards.

9. That in response to the contents of para no.9 of the objections filed by the applicant, it is humbly submitted that for controlling pollution from the Tyre Pyrolysis units, CPCB has revised the SOP for Recycling of Waste Tyre Scrap for the recovery of Tyre Pyrolysis Oil, Pyro Gas and Char in Tyre Pyrolysis Oil (TPO} Units. The revised SOP intends to improve environmental performance of TPO units across the country.

10. That in response to the contents of para no.10 of the objections filed by the applicant, it is humbly submitted that the procedure adopted by CPCB for classification of TPO Units under the Orange Category, is detailed in **Annexure-IV**. Further, it is submitted that earlier SPCBs/PCCs were following their specific categorization guidelines and based on which the SPCBs/PCCs had categorized TPO under Red, Orange or even green category. However, in compliance of the directions issued by the Hon'ble NGT, CPCB has categorized TPO under orange category and the same has been conveyed to all SPCBs/PCCs vide letter dated 30.11.2023 for following uniform approach. Further the submission / objection made by the applicant that many SPCBs/PCCs have not listed TPO as approved fuel and the same is indicative of its potential to cause more damage to environment is denied. The fuel quality analysis of TPO has been done and same has been found to be at par with furnace oil. The copy of letter dated 30.11.2023 to convey the

categorisation of TPO under Orange category is annexed herewith as **ANNEXURE-V.**

11. That in response to the contents of para no.11 of the objections filed by the applicant, the averments made in the Para are not admitted and denied in totality. In this regard, it is humbly submitted that CPCB vide its email dated 17.01.2024 has sought approval of MoEF&CC for revised SOP. Subsequently, MoEF&CC in its response has highlighted the Rule 21 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 which specifies the Responsibilities of various authorities (as stipulated at Schedule VII) wherein the responsibilities of CPCB has also been provided which inter-alia been are to;

(i) Prepare and update guidelines to prevent or minimize the generation and handling of hazardous and other wastes and

(ii) Prepare and update guidelines/ Standard Operating Procedures (SoPs) for recycling, utilization, pre-processing, co-processing of hazardous and other wastes.

MoEF & CC conveyed that, there is no requirement of any approval from MoEF&CC of revised SOP. However, the revised SOP has been seen by the Additional Secretary HSM Division. A copy of email dated 17.01.2024 for seeking approval of MoEF&CC for revised SOP is annexed herewith as **Annexure-VI**.

12. That in response to the contents of para no.12 of the objections filed by the applicant, it is humbly submitted that CPCB in its revised SOP has already

included the concept of zero liquid discharge and general emission standards. The revised SOP has also stipulated that the tyre pyrolysis units (TPO units) to follow emission standards as prescribed by SPCBs/PCCs at the time of issuance of CTO. CPCB has duly circulated these SOP to all SPCBs/PCCs vide email dated 19.01.2024 for the implementation of the same. Further based on the observation made by the Hon'ble NGT in its order dated 19.01.2024, CPCB has again written to all SPCBs/PCCs for implementation of revised SOP and for ensuring Zero Liquid Discharge (ZLD) and general gaseous emission standards while issuing consent to establish & operate under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981.

13. That in response to the contents of para no.13 of the objections filed by the applicant, it is humbly submitted that CPCB has complied with all the directions of the Hon'ble NGT required for the management of the waste tyre in a scientific & environmentally sound manner including insertion of Schedule-IX under Hazardous & Other Waste (M&TM) Amendment Rules, 2022 for utilization & management of Waste Tyre. An online EPR portal has been developed for the management of Waste Tyre through Extended Producer Responsibility (EPR) Regime. As on date 234 producers and 573 recyclers have applied on the portal for registration out which 169 producers and 393 recyclers have been granted registration on the EPR portal. The total EPR obligation to registered producers for the FY 2022-23 and FY 2023 -24 is 8,35,764.774 MT and 19,79,490.5 MT respectively. The quantity of waste tyre generation for FY 2022-23 and FY 2023-24 is 22,57,439.7 MT and 24,65,499.25 MT respectively. The quantity of EPR Certificate generated for

FY 22-23 and FY 23-24 is 17,62,335 MT and 23,99,166 MT respectively. The quantity of EPR Certificate Transferred during FY 22-23 and FY 23-24 is 24,79,771 MT against a total obligation of 28,15,255 MT which is 88.08% of total obligation for the above two financial year. CPCB has also done revision of SOPs for Recycling of Waste Tyre Scrap for the Production of Tyre Pyrolysis Oil in Tyre Pyrolysis Oil (TPO) Units" which has been prepared based on the outcomes of 07 studies carried out by CPCB, 70 studies carried out by SPCBs, and suggestions made by the petitioner and stakeholders. The SOP were finalized in consultation with the expert members from NEERI & IIT Delhi.

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14. That, the answering respondent herein craves leave of the Hon'ble Tribunal to file additional reply, in future, if required.

15. That, in view of the submissions made in preceding paragraphs, the answering respondent i.e. CPCB shall abide by the orders/directions passed by the Hon'ble Tribunal in the instant matter.

Anand Kumar

(Anand Kumar)
Scientist 'F'
Central Pollution Control Board

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AFFIDAVIT

I, Anand Kumar, working as Scientist 'F' in Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi, do hereby solemnly affirm, declare on oath and state as under :-

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1. That I, the deponent herein is authorized representative to represent the Respondent CPCB in the present case, and as such, I am well conversant with the facts and circumstances of the present case on the basis of the information derived from the official records, and hence, I am competent and authorized to verify, sign and swear this affidavit on behalf of the Respondent CPCB.

2. That the accompanying reply may be read part and parcel of the present affidavit.

3. That the accompanying reply has been drafted and filed under my instructions and authority the contents thereof are true and correct on the basis of the record maintained during ordinary course of business of CPCB

and available records and documents and the contents of the same are read over and explained to me and are not repeated herein for the sake of brevity.

NOTARY PUBLIC
R.L. Chaudhary
N.C.T. of Delhi
Regd. No. 1513
GOVT. OF INDIA

DEPONENT

आनंद कुमार / Anand Kumar
निदेशक/ Director
केंद्रीय प्रदूषण नियंत्रण बोर्ड
Central Pollution Control Board
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
(M/o Environment, Forest & Climate Change, Govt. of India)
परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली–110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

VERIFICATION:

23 SEP 2024

Verified at New Delhi on this _____day of September 2024 that the contents of the above reply are correct and true on the basis of the records of the case as mentioned in the day-to-day affairs of the CPCB. Nothing has been concealed therefrom or mis-stated.

DEPONENT

आनंद कुमार / Anand Kumar
निदेशक/ Director
केंद्रीय प्रदूषण नियंत्रण बोर्ड
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Parivesh Bhawan, East Arjun Nagar, Delhi-110032

ATTESTED
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GOVT. OF INDIA

23 SEP 2024

Steps taken in line with the representation received from the petitioner on 10.08.2019 on Management of waste Tyre

S.No	Suggestion	Action taken by CPCB
a	• Implementation of various statutory rules & regulations for sound management and utilization of waste tyres, including Environment Protection Act, 1986 and Rules such as Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (referred as 'Hazardous waste Rules 2016');	• MoEF&CC has notified 'Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2022", for management of Waste Tyre. The management is based on the principal of Extended Producer Responsibility (EPR) where the Producers of the Waste Tyres have been assigned EPR targets (Recycling targets) on the basis of quantity of new tyre sold or new tyre imported or quantity of waste tyre imported by it. Recyclers and Retreaders under the rules are mandated to generate and issue EPR Certificates and Retreading Certificate based on quantity of waste tyre recycled or retreaded by them. Further for fulfilment of EPR targets Producers are required to purchase EPR Certificate from registered Recyclers. The quantity of EPR certificates purchased will be adjusted against EPR targets. Producer may also buy Retreading certificate for deferment of its EPR obligations, however, the obligations will only be considered fulfilled once the Recycling certificates are purchased. The waste Tyre EPR regime is being implemented through an on-line EPR Portal (https://www.eprtyrescpcb.in/) where producers, recyclers and refurbishers are registered and all the information such as EPR obligations of producers in terms of recycling targets, quantity of EPR Certificate generated and transacted are available. Also on the EPR Portal, operations such as generation and transfer of EPR Certificate are carried out. Performed. The on-line EPR Portal has been operational since March 2023 where Producers of new tyre, Importer of Waste Tyre, Recyclers and Retreaders of Waste Tyres are registered. As on date 234 producers and 573 recyclers have applied on the portal for registration out which 169 producers and 393 recyclers have been granted registration on the EPR portal. The total EPR obligation to registered producers for the FY 2022-23 and FY 2023 -24 is 8,35,764.774 MT and 19,79,490.5 MT respectively. The quantity of waste tyre generation for FY 2022-23 and FY 2023-24 is 22,57,439.7 MT and 24,65,499.25 MT respectively. The quantity of EPR Certificate generated for FY 22-23 and FY 23-24 is 17,62,335 MT and 23,99,166 MT respectively. The quantity of EPR Certificate Transferred during FY 22-23 and FY 23-24 is 24,79,771 MT against a total obligation of 28, 15,255 MT which is 88.08% of total obligation for the above two financial year. The EPR Certificate generation indicate recycling of waste tyre. The EPR regime provides that only registered entity can do the business among themselves.
	• Standard Operating Procedure issued vide OM dated 05.06.2015 & 24.11.2015 by Ministry of Environment, Forest &	• CPCB has revised SOP for Recycling of Waste Tyre Scrap for the recovery of Tyre Pyrolysis Oil, Pyro Gas and Char in Tyre Pyrolysis Oil (TPO) Units. The revised SOP recommends conversion of all the existing conventional batch based Tyre Pyrolysis units into Advanced Bach Automated Process (ABAP) where the

	Climate Change (MoEF&CC); CPCB's • State level Guidelines for regulation of End-of Life Tyres and Pyrolysis Plants among others.	environmental & safety concerns have been duly addressed. The revised SOP have been circulated to SPCBs/PCCs for their implementation and are also available at CPCB's website. • CPCB issued direction under section 5 of the environment (Protection) Act, 1986 on 04.12.2019 directing all SPCBs/PPCs to close down all such pyrolysis units in their state/UT which are not complying as on date with consent conditions and Sops of MoEF&CC. • CPCB issued direction under section 5 of the environment (Protection) Act, 1986 on 30-01-2024 to SPCBs/PCCs with regard to the followings: a) To provide the updated list of entities engaged in generation, recycling & retreading of Waste Tyre (Producers, Importers, Recyclers and Retreaders) and ensure their on boarding on the Waste Tyre EPR Portal of CPCB; b) To issue warning notices to all such entities who are operating without registration followed by closure of such entities; c) To immediately physically verify the facilities of Recyclers and Retreaders in the state/UT in terms of various details such as its GPS location, GPS tagged photo/video, waste category as raw material (waste tyre), installed plant & machinery and their actual production capacity, capability, etc. as submitted on Waste Tyre EPR Portal; d) To take action against such Recyclers and Retreaders who have uploaded their details falsely or not correctly on EPR Portal as per verification as at (c) above and to recommend CPCB immediately for correcting details on EPR portal so as to ensure that no false EPR Certificate is being generated in the State/UT. Further, necessary changes be also done in the CTO accordingly and be informed to CPCB. e) To carry out drives for identifying informal/illegal recyclers / retreaders including clusters/areas where such illegal recyclers are operating and to close such informal recycling units immediately. f) To facilitate transformation of such informal recyclers/retreaders into formal recyclers / retreaders and consent mechanism by way of providing necessary technical support, hand holding, integrating with schemes in the State/UT etc. g) To also issue advertisements in the newspapers in vernacular language for immediately closing of illegal recycling/retreading operations by the operators who do not have consent to operate including for common public to inform the same, if any, to SPCB/PCC and take actions as at (e) and (f) above. • CPCB again issued direction under section 5 of the environment (Protection) Act, 1986 on 19-02-2024 to SPCBs/PCCs with regard to the followings: a) To issue notice to all recyclers, who are recycling Waste Tyre but not uploading requisite documents, invoices as per the above mentioned guidance document, for generation of

		EPR certificates on the waste tyre EPR portal; b) To withdraw / suspend / cancel CTO of such waste tyre recyclers for non-compliance of (a) above; c) To carry out verification of various documents / invoices / information uploaded by the waste tyre recyclers on the EPR Portal for quantity of waste tyre procured / collected / imported, recycled, end product produced and sold for generation of EPR certificates and also verify their installed plant & machinery and their capacities and capability. • The revised SOP for Recycling of Waste Tyre Scrap for the recovery of Tyre Pyrolysis Oil, Pyro Gas and Char in Tyre Pyrolysis Oil (TPO) Units has been published and is in public domain provides guidance on capacity, siting locations, pollution control measures, process controls and safety measures to be adopted by the Waste Tyre Pyrolysis Plants.
b	• Devising system(s) for maintenance of inventory of waste tyres /End- of-Life Tyres and Occupiers.	• An online portal has been developed for the management of waste Tyre under Extended Producer Responsibility regime. The portal is available at https://www.eprtyrescpcb.in/. The portal is taking into account registration of Producers, recyclers & retreaders. EPR obligations have been assigned to Producers and the same are to be fulfilled through purchase of EPR certificates from registered recyclers & retreaders. The transaction done are online and very transparent. Portal also captures sales data of producers, products of recycling of recyclers their pathway downstream. • The portal is maintaining inventory of Waste tyre generated/imported in the country for the purpose of recycling • The information as available on the portal is detailed in the para above.
c	• Devising Mechanisms for monitoring/verifying the information provided by the Occupiers of waste tyres.	• The provisions stipulated in the Schedule-IX under Hazardous and Other Wastes (Management & Transboundary Movement) Amendment Rules, 2022 w.r.t Utilization & Management of Waste Tyres advocated recycling of waste tyre in an environmentally sound manner. Also weightage in credit generation has been given to the recyclers on the basis of End Products produced by them. The credit generation on recycling is being given to recycler only on the basis of sales invoices uploaded by the recyclers in the portal. • As per the Para 12 of the schedule-IX of the amended rules, the Central Pollution Control Board by itself or through a designated agency shall verify compliance of producers or recyclers through inspection and periodic audit, as deemed appropriate and the actions against violations and for non-fulfilment of extended producer responsibility target, obligations and responsibilities shall be in accordance with Environmental Compensation guidelines. • CPCB has developed online Audit module under Waste Tyre-EPR Portal and the module is operational. • Guidelines for levying Environmental Compensation from Non-Complying entities have also been developed and approved by MoEF&CC. The guidelines are available at CPCB's website and waste tyre portal

		• On the EPR Portal all the registered entity provides information. The information is subject to periodic audit and random verification by CPCB/SPCBs/PCCs. • Paragraph 10,11,12 of schedule IX of the Hazardous and Other Wastes (Management & Transboundary Movement) Amendment Rules, 2022, provides for environmental compensation charges, prosecution and periodic audit of the stakeholders under the EPR regime. Paragraph 13 of schedule IX of the Hazardous and Other Wastes (Management & Transboundary Movement) Amendment Rules, 2022, provides for '**Steering Committee for Implementation of Extended Producer Responsibility Regime for Waste Tyre**' under the Chairmanship of the Chairman, Central Pollution Control Board or his nominee to oversee the overall implementation of the extended producer responsibility regime for waste tyre and comprise of one representative of the Ministry of Environment, Forest and Climate Change, one representative of the Department of Promotion of Industry and Internal Trade, one representatives of the Automobile Tyre Manufacturers Associations, one representatives of the Recycler Associations , one representatives of the State Pollution Control Board or Pollution Control committee as co-opted by the Chairman of the Steering Committee and Head of the Concerned Division of the Central Pollution Control Board as Member- Convener. The Steering Committee monitor and supervise implementation of the provisions of Schedule IX of above said rules and also decide on the disputes arisen from time to time on the representations received in this regard. The Steering Committee is required to take all such measures as it deems necessary for proper implementation of the provisions of this Schedule.
d	• Ban on Pyrolysis Plants using waste tyres to produce Pyrolysis Oil especially those who are operating without consent.	• CPCB issued direction under section 5 of the environment (Protection) Act, 1998 on 04.12.2019 directing all SPCBs/PPCs to close down all such pyrolysis units in their state/UT which are not complying as on date with consent conditions and Sops of MoEF&CC. • CPCB also issued direction under section 5 of the environment (Protection) Act, 1986 on 30-01-2024 to SPCBs/PCCs which is detailed above and the specific directions with regard to informal operators who are operating without consent is reproduced below with same serial numbers: e) To carry out drives for identifying informal/illegal recyclers / retreaders including clusters/areas where such illegal recyclers are operating and to close such informal recycling units immediately. f) To facilitate transformation of such informal recyclers/retreaders into formal recyclers / retreaders and consent mechanism by way of providing necessary technical support, hand holding, integrating with schemes in the State/UT etc. g) To also issue advertisements in the newspapers in vernacular language for immediately closing of illegal recycling/retreading operations by the operators who do not have consent to operate including for common public to inform the same, if any, to SPCB/PCC and take actions as at (e) and (f) above.
	• Formulating implementation of Extended Producer's	• Ministry of Environment, Forest and Climate Change (MoEF&CC), vide notification No. G.S.R 593(E) dated July 21, 2022 has notified the Hazardous and other Wastes (Management & Transboundary Movement)

<table>
<tr><td></td><td>Responsibility (EPR) for tyre manufacturers/producers.</td><td>Amendment Rules, 2022 for the utilization & management of waste tyres through EPR regime as per schedule-IX. The amendment aims to take all steps required to ensure the management of waste Tyre in a Scientific and Environmentally Sound Manner (ESM). The schedule – IX w.r.t utilization and management of the waste tyre has addressed most of the environmental concerns raised by the petitioner in its OA 400/2019. The details are given in the paragraphs above.</td></tr>
<tr><td></td><td>• Guidelines may be formulated for alternative environment friendly uses of ELT's based on global best practices.</td><td>• Ministry of Environment, Forest and Climate Change (MoEF&CC), vide notification No. G.S.R 593(E) dated July 21, 2022 has notified the Hazardous and other Wastes (Management & Transboundary Movement) Amendment Rules, 2022 for the utilization & management of waste tyres through EPR regime as per schedule-IX. The amendment aims to take all steps required to ensure the management of waste Tyre in a Scientific and Environmentally Sound Manner (ESM). The schedule – IX w.r.t utilization and management of the waste tyre has addressed most of the environmental concerns raised by the petitioner in its OA 400/2019.
• Under the EPR regime Five end products of recycling such crumb rubber, reclaim rubber, crumb rubber modified bitumen, recovered carbon black and pyrolysis oil & char has been recognised. CPCB in the Hazardous Waste (M &TM) Amendment Rules, 2022 have provided alternate environmental friendly used of Waste Tyre. Each of the end products have been given weightage on the basis of which EPR credits are generated. The end product wise weightage is given below:
<table>
<tr><th>S.No</th><th>End Products of Recycling</th><th>Weightage to End Products</th></tr>
<tr><td>1</td><td>Reclaimed Rubber</td><td>1.30</td></tr>
<tr><td>2</td><td>Recover Carbon</td><td>1.25</td></tr>
<tr><td>3</td><td>Crumb Rubber Modified Bitumen(CRMB)</td><td>1.10</td></tr>
<tr><td>4</td><td>Crumb Rubber</td><td>1.0</td></tr>
<tr><td>5</td><td>TPO & Char
- Continuous
- Batch</td><td>0.8
0.5</td></tr>
</table></td></tr>
</table>

Annexure-II

Minutes of the meeting held on 11.03.2024 for discussion on the Hon'ble NGT matter OA No. 400/2019 and EA 39/2023.

A meeting was convened with Expert member from CSIR-NEERI, Nagpur, Oil sector expert (Former Scientist 'F' CSIR-IIP Dehradun), official form MoEF & CC, MoPNG, BIS, SPCBs/PCCs and CPCB for utilization of tyre pyrolysis oil (TPO) in industries and its consideration as approved fuel in compliance of the directions dated 19-01-2024 issued by the Hon'ble NGT in the aforesaid matter. The Hon'ble NGT vide its directions dated 19.01.2024 has directed for ensuring compliance of Revised SOPs w.r.t Recycling of Waste Tyre in the Tyre Pyrolysis Units. In the same order, the Hon'ble NGT has also sought clarification regarding the use of Tyre Pyrolysis Oil (TPO) by Industries and its consideration as "Approved Fuel" under the Air (Prevention & Control of Pollution) Act 1981. The list of participants is enclosed in Annexure-I. The agenda of the meeting was as below:

Agenda: Utilization of tyre pyrolysis oil (TPO) in Industries and its consideration as "Approved Fuel".

Followings are the record of discussion:

- A presentation on characteristic of TPO such as Acidity on Burning Tip, Ash Content, Conradson Carbon Residue, Calorific Value, Density, Flash Point, Kinematic Viscosity, Sediments, Sulphur Content, Water Content, and Pour Point as obtained from samples of TPO collected during studies conducted by CPCB was made. The characteristics of TPO were compared with Furnace Oil, Diesel, & waste oil derived fuel.
- Expert from oil sector observed that characteristics of TPO are somewhat better than furnace oil characteristics except for the flash point which was found to be 30, 52,54, 68 and 73 ^{0}C in different samples. It is well known that that flash point is of concern during transportation, handling and storage of any fuel.
- Expert from NEERI also observed that TPO can be compared with furnace oil and can be used as its substitute.
- It has been observed that TPO has lower carbon number, lower sulphur content and hence emissions (PM and SO_x) from TPO are expected to be lower than that of emissions from Furnace oil (FO).
- Based on analysis report of different samples a typical proposed specification of TPO are given in Table – 1 as at Annexure - II
- SPCBs /PCCs officials present in the meeting informed that TPO is not listed as approved fuel.
- BIS representative informed that they have conceived a project on the development of TPO fuel quality standards. However, the project is at a very nascent stage. BIS asked CPCB to share the results of TPO analysis.
- The experts and other participants in the meeting were of the opinion that TPO can be used in those industries where FO has been permitted. Hence, SPCBs/PCCs may consider permitting TPO also in such industries where FO has been permitted and adequate air pollution control system has been installed to meet the specified emission norms.

(Anand Kumar) (Dr. G. S. Dang) (Dr. K.V George)

Appendix-I

The List of Participants in the meeting held on 11.03.2024 for discussion on the Hon'ble NGT matter OA No. 400/2019 and EA 39/2023

1. Dr. K. V. George, Chief Scientist & Head, Air Pollution Control Division CISR-NEERI, Nagpur
2. Dr. Gurbax Singh Dang, Expert Oil Sector (Former Scientist 'F' CSIR-IIP, Dehradun)
3. Dr. Vinod Singh, Additional Director, MoEF & CC
4. Shri P Somakumar, US (OR-I), MoPNG
5. Ms. Kreeti Das, Deputy Director, BIS
6. Shri Anand Kumar, Scientist F, Divisional Head, WM-III, CPCB
7. Officials of CPCB HQ
8. Officials of CPCB Regional Directorates
9. Representatives from SPCBs/ PCCs

Appendix-II

Table – 1

Typical Proposed Tyre Pyrolysis Oil Specification

S. No.	Parameter*	Value/Range
1.	Ash Content, %wt.	0.1 max.
2.	Conradson Carbon Residue, %wt.	Less than 4
3.	Calorific Value, kcal/kg	8500 min.
4.	Density, kg/L	0.90 – 0.95
5.	Flash Point, ^{0}C	50 min.
6.	Kinematic Viscosity @40^{0}C, cSt	4 – 6
7.	Sediments, %wt.	0.01 max.
8.	Sulphur Content, %wt.	1 max.
9.	Water Content, %wt.	0.5 max.
10.	Pour point, ^{0}C	Less than 0
11.	Carbon Number	C_5 – C_{30}
12.	Boiling Range, ^{0}C	35 to 350

Note: *These are typical specifications(value/range) for TPO arrived after discussion among experts. However, firm specifications for TPO are to be developed by BIS.

Annexure-III

NGT matter of OA 400/2019 SAFE Vs UOI)

Background

In the matter of OA No. 400 of 2019 and in compliance of the Hon'ble NGT order dated 06-01-2020, seven (07) Tyre Pyrolysis Oil (TPO) Units comprising of three (03) advance batch automated tyre pyrolysis plants, three (03) existing batch units and one (01) continuous tyre pyrolysis plants were studied under the guidance of experts from NEERI and IIT Delhi.

During the above studies CPCB also carried out fuel quality analysis of TPO Oil produced in the 07 units .

A comparison table of testing results of TPO oil during seven studies with furnace oil & Used oil as per Schedule –V Part B is given in table below

Comparison table of TPO carried by CPCB in seven TPOs with Furnace Oil, & Used Oil)

	Parameter	Study 1	Study 2	Study 3	Study 4	Study 5	Study 6	Study 7	Furnace Oil	Fuel from waste Oil
S.N	Name of the Company	M/s Mahie Green Earth Uttar Pradesh (Batch)	M/s S.G. Petrotech Thesil, Harayana (Batch)	M/s Tirth Ram & Co Ludhia (Batch)na	M/s. PAIRAN PYROLYSIS PVT. LTD., PERUNDURAI(Batch)	M/s. Narmada Industry, Raipur (Batch)	M/s Excel Industries Kolhapur (Batch)	M/s Royal Carbon Black Pvt. Ltd (Continous)	MV2 Grade IS 1593-2018	Schedule – Vpart B HoWM 2016
1	Acidity on Burning Tip, mgKOH/g	0.165	0.167	0.167	-	-	-		Nil	-
2	Ash Content, % wt.	0.005	0.087	0.087					Max 0.1	-

3	**Conradson Carbon Residue (10% residue), % wt.**	**1.62**	**0.62**	**3.41**					**Max 18.0 (ISO 10370)**	**-**
4	**Calorific Value, Kcal/kg**	**7003.37**	**9120**	**9926.38**	**6347**	**10265**	**9100**	**7610**	**Report**	**-**
5	**Density, Kg/L**	**0.921**	**0.926**	**0.943**	**-**	**-**	**-**	**-**	**Report**	**-**
6	**Flash Point, °C**	**30**	**52**	**54**	**-**	**-**	**-**	**-**	**Min 66.0**	**-**
7	**Kinematic Viscosity @ 40°C , cSt**	**3.67**	**6.12**	**5.19**	**-**	**-**	**-**	**-**	**125-180 @ 50°C**	**-**
8	**Sediments, % wt.**	**0.0089**	**0.002**	**0.0063**	**0.18**	**<0.01**	**0.20**	**0.19**	**Max 0.25**	**0.25**
9	**Sulphur Content, % wt.**	**0.91**	**0.87**	**1.28**	**0.0035**	**0.47**	**0.12**	**0.14**	**Max 4.0**	**4.5%**
10	**Water Content, % wt.**	**0.19**	**0.02**	**0.14**	**0.1**	**<0.1**	**BLQ (LOQ:0.05)**	**0.40**	**Max 1.0**	**1%**
11	**Pour Point, °C**	**>-30**	**-6**	**-8**	**-**	**-**	**-**	**-**	**Report**	

12	Total Halogens, ppm	286.4	287.4	146.27	BDL (DL:1.0) (mg/kg) Total Halogen as Cl	146.45	683 (mg/kg) Total Halogen as Cl	815		4000 ppm
13	Carbon Number	C_4-C_{22}	C_4-C_{22}	C_8-C_{30}						
14	Boiling Range, °C	80 to 305	72 to 295	66.4 to 312						
15	PONA (Paraffin, Olefins, Neptha, Aromatics), % volume	69.87	70.87	69.53						
16	Lead, ppm	-	ND, [LOQ-0.3]	ND, [LOQ-0.3]	1.11	Absent	BLQ(LOQ:1.0)	BLQ (LOQ:1.0)		100
17	Cadmium, ppm	-	ND, [LOQ-0.3]	ND, [LOQ-0.3]	3.69	Absent	BLQ(LOQ:1.0)	BLQ (LOQ:1.0)		500 (Cd+Cr+Ni)
18	Chromium, ppm	-	ND, [LOQ-0.3]	ND, [LOQ-0.3]		0.004	BLQ(LOQ:1.0)	BLQ (LOQ:1.0)		
19	Nickel, ppm	-	ND, [LOQ-0.3]	ND, [LOQ-0.3]		0.002	BLQ(LOQ:1.0)	BLQ (LOQ:1.0)		
20	Arsenic, ppm	-	ND, [LOQ-0.3]	ND, [LOQ-0.3]	BLQ (LOQ:1.0)	Absent	BLQ(LOQ:1.0)	BLQ (LOQ:1.0)		05

21	Polyaromatic Hydrocarbons (PAHs), % wt.	0.18	0.11	0.21	BLQ (LOQ:0.0 0025)	BDL (DL 0.03)	BLQ (LOQ:0.01)	BLQ (LOQ:1.0)		6%
22	Polychlorinated biphenyls (PCBs), ppm	ND,[LOQ-5] (µg/kg)	BLQ , [LOQ-0.01]	BLQ , [LOQ-0.01]	BLQ (LOQ:0.2)	BDL (DL 0.01)	BLQ (LOQ:1.0)	BLQ (LOQ:1.0)		<2 ppm

*ND- Not Detected
*BLQ- Below the limit of quantification
*LOQ- Limit of Quantification

Testing protocol used by CPCB in its study

	Parameter	**Testing Protocol w.r.t study carried out by CPCB**
S.N	**Name of the Company**	
1	**Acidity on Burning Tip, mgKOH/g**	**ISO 6618**
2	**Ash Content, % wt.**	**IS-1448: P-4**
3	**Conradson Carbon Residue (10% residue), % wt.**	**IS-1448:P-122**
4	**Calorific Value, Kcal/kg**	**IS-1448:P-6**
5	**Density, Kg/L**	**IS-1448:P-16**
6	**Flash Point, °C**	**IS-1448:P-21**
7	**Kinematic Viscosity @ 40°C , cSt**	**IS-1448:P-25**
8	**Sediments, % wt.**	**IS-1448:P-30**
9	**Sulphur Content, % wt.**	**IS-1448:P-33**

10	**Water Content, % wt.**	**ISO-12937**
	Pour Point, ˚C	**IS-1448:P-10**
12	Total Halogens, ppm	USEPA Method-9076
13	Carbon Number	FL/SOP/GC-97
14	Boiling Range, ˚C	IS-1448: P-18
15	PONA (Paraffin, Olefins, Neptha, Aromatics), % volume	FL/SOP/GC-98
16	Lead, ppm	USEPA Method-3031
17	Cadmium, ppm	USEPA Method-3031
18	Chromium, ppm	USEPA Method-3031
19	Nickel, ppm	USEPA Method-3031
20	Arsenic, ppm	USEPA Method-3031
21	Polyaromatic Hydrocarbons (PAHs), % wt.	USEPA Method-3031
22	Polychlorinated biphenyls (PCBs), ppm	FL/SOP/GCSM/P-04

Final Document on Revised Classification of Industrial Sectors Under

Red, Orange, Green and White Categories

(February 29, 2016)

Central Pollution Control Board

Delhi

Executive Summary

Categorization of Industrial Sectors under Red, Orange, Green and White Category

The Ministry of Environment, Forest and Climate Change (MoEFCC) had brought out notifications in 1989, with the purpose of prohibition/ restriction of operations of certain industries to protect ecologically sensitive Doon Valley. The notification introduced the concept of categorization of industries as " Red", "Orange "and "Green" with the purpose of facilitating decisions related to location of these industries. Subsequently, the application of this concept was extended in other parts of the country not only for the purpose of location of industries, but also for the purpose of Consent management and formulation of norms related to surveillance / inspection of industries.

The concept of categorization of industries continued to evolve and as different State Pollution Control Boards interpreted it differently, a need arose to bring about necessary uniformity in its application across the country. In order to harmonize the 'Criteria of categorization', Directions were issued by CPCB under Section 18(1)(b) of the Water (Prevention & Control of Pollution) , Act, 1974 to all SPCBs/PCCs to maintain uniformity in categorization of industries as red, green and orange as per list finalized by CPCB, which identified 85 types of industrial sectors as 'Red', 73 industrial sectors as 'Orange' and 86 sectors as 'Green'.

The process of categorization thus far was primarily based on the size of the industries and consumption of resources. The pollution due to discharge of emissions & effluents and its likely impact on health was not considered as primary criteria. There was demand from the SPCBs / PCCs and industrial associations for categorization of the industrial sectors in a more transparent manner. Accordingly, the issue was discussed thoroughly during the national level conference of the Environment Ministers of the States, held in New Delhi during April 06-07, 2015 and a 'Working Group' comprising of the members from CPCB, APPCB, TNPCB, WBPCB, PPCB, MPPCB and Maharashtra PCB is constituted to revisit the criteria of categorization of industries and recommend measures for making the system transparent and rational.

The Working Group has developed the criteria of categorization of industrial sectors based on the Pollution Index which is a function of the emissions (air pollutants), effluents (water pollutants), hazardous wastes generated and consumption of resources. For this purpose the references are taken from the the Water (Prevention and Control of Pollution) Cess (Amendment) Act, 2003, Standards so far prescribed for various pollutants under Environment (Protection) Act , 1986 and Doon Valley Notification, 1989 issued by MoEFCC. The Pollution Index PI of any industrial sector is a number from 0 to 100 and the increasing value of PI denotes the increasing degree of pollution load from the industrial sector. Based on the series of brain storming sessions among CPCB, SPCBs and MoEFCC , the following criteria on 'Range of Pollution Index 'for the purpose of categorization of industrial sectors is finalized.

- Industrial Sectors having Pollution Index score of 60 and above – Red category
- Industrial Sectors having Pollution Index score of 41 to 59 –Orange category
- Industrial Sectors having Pollution Index score of 21 to 40 –Green category
- Industrial Sectors having Pollution Index score incl.&upto 20 -White category

The newly introduced White category of industries pertains to those industrial sectors which are practically non-polluting such as Biscuit trays etc. from rolled PVC sheet (using automatic vacuum forming machines), Cotton and woolen hosiers making (Dry process only without any dying/washing operation), Electric lamp (bulb) and CFL manufacturing by assembling only, Scientific and mathematical instrument manufacturing, Solar power generation through photovoltaic cell, wind power and mini hydel power (less than 25 MW).

The salient features of the 'Re-categorization' Exercise are as follows :

- Due importance has been given to relative pollution potential of the industrial sectors based on scientific criteria . Further, wherever possible, splitting of the industrial sectors is also considered based on the use of raw materials, manufacturing process adopted and in-turn pollutants expected to be generated.
- The Red category of industrial sectors would be 60.
- The Orange category of industrial sectors would be 83.
- The Green category of industrial sectors would be 63.
- Newly introduced White category contains 36 industrial sectors which are practically non-polluting.
- There shall be no necessity of obtaining the Consent to Operate'' for White category of industries. An intimation to concerned SPCB / PCC shall suffice.
- No Red category of industries shall normally be permitted in the ecologically fragile area / protected area.

The purpose of categorization is to ensure that the industry is established in a manner which is consistent with the environmental objectives. The new criteria will prompt industrial sectors willing to adopt cleaner technologies, ultimately resulting in generation of fewer pollutants. Another feature of the new categorization system lies in facilitating self-assessment by industries as the subjectivity of earlier assessment has been eliminated. This 'Re-categorization' is a part of the efforts, policies and objective of present government to create a clean & transparent working environment in the country and promote the Ease of Doing Business.

Other similar efforts include installation of Continuous Online Emissions/ Effluent Monitoring Systems in the polluting industries, Revisiting of the CEPI (Comprehensive Environment Pollution Index) concept for assessment of polluted industrial clusters, Revision of existing industrial Emission/Effluent discharge standards, initiation of special drive on pollution control activities in Ganga River basin and many more in coming future.

Revised Criteria of Categorization of Industries

"Securing industrial pollution control in accordance with the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 by linking with categorization of industries, consent management and vigilance – 'In context of Red, Orange, Green and White categories of industries"

A: Genesis of Categorization:

- The Ministry of Environment, Forest and Climate Change (MoEFCC) had brought out notifications, which inter-alia refers to Prohibition/ Restriction on operation of industries to protect ecologically sensitive areas or areas of specific importance. This has for the first time brought the concept of categorization of industries to" Red", "Orange "and "Green" and restrict their operation in certain areas of importance. Therefore, it is at-once interpreted that Red, Orange and Green categorization is linked with location specific needs.
- The notification of MoEF was first brought on 2nd February,1989 in case of "Restriction on location of industries, mining operations and other developmental activities in Doon Valley in "Uttarakhand" and thereafter another notification on 24th February 1999 regarding restriction on the setting up of industries in Dahanu Taluka in Maharashtra. The categorization had been made mainly on the basis of size of the industries, man power and consumption of resources.
- However, in other parts of the country, there have been variations in context to the classification of industries under Red, Orange and Green categories. SPCBs / PCCs were following their own criteria in different States thereby creating confusion.
- In order to harmonize the 'Criteria of categorization', a 'Working Group' was formed as per resolution passed during the 57th Conference of the Chairmen & Member Secretaries of CPCB and SPCBs. Based on the recommendations of the Working Group, Directions dated 4/6/2012 under Section 18(1)(b) of the Water

(Prevention & Control of Pollution) , Act, 1974 were issued to all SPCBs/PCCs with the effects to maintain uniformity in categorization of industries as red, green and orange as per list finalized by the Working Group. This indicative list included 85 types of industrial sectors as 'Red', 73 industrial sectors as 'Orange' and 86 sectors as 'Green'. However, these identified categories have not been assigned with scores as per existing criteria/ or any new criteria

B: Categorization criteria used by SPCBs/PCCs:

SPCBs and PCCs use the criteria of Red, Orange and Green categories for consent management and vigilance purposes for carrying out inspections to verify compliance to the stipulated standards. However the above categorization do not emphasize on sector-specific plan for control of pollution in accordance with priority based on pollution index.

C: Gap in the process:

1. The categorization has been made mainly on the basis of size of the industries and consumption of resources. The pollution due to discharge of emissions & effluents and its impact on health was not considered as primary criteria.
2. Categorization was on random basis, no scoring system was adopted.

D: Resolutions made during National Level Conferences

The issue was discussed thoroughly during the following national level conferences held in New Delhi:

- Conference of the Environment Ministers of Central Government and State Governments during April 06-07, 2015
- 59th Conference of Chairmen & Member Secretaries of Pollution Control Boards / Pollution Control Committees held on April 08, 2015

Accordingly following resolutions were made during the Conferences:

1. *A 'Working Group' comprising of the members from CPCB, APPCB, TNPCB, WBPCB, PPCB, MPPCB and Maharashtra PCB is constituted.*
2. *This WG shall revisit the categorization of industries that is based on pollution index criteria & environmental issues such as generation of emission, effluent and hazardous wastes.*
3. *The categorization will be done on the basis of composite score (0-100 marks) of Pollution Index given in accordance with the following weightage.*

Air Pollution Score based on parameters namely PM, CO, NOx, SOx, HMs , Benzene, Ammonia and other toxic parameters relevant to the industry.	*40 Marks*
Water Pollution Score based on parameters namely pH, TSS, NH_3-N, BOD, Phenol and other toxic pollutants relevant to the industry.	*40 Marks*
Hazardous wastes (land fillable, incinerable, recyclable) as generated by the industry.	*20 Marks*
Note : • *Parameters to be decided on the basis of the nature of the wastes generating from the industrial sector.* • *Industries having only either water pollution or air pollution, the score will be normalized wrt 100.*	

4. *Based on the score of the Pollution Index, following categorization be made :*
   - *Type of industries, if scores 60 and above be categorized as Red*
   - *Type of industries, if scores from 30 to 59 be categorized as Orange*
   - *Type of industries, if scores from 15 to 29 be categorized as Green*
   - *Type of industries, if less than 15 be categorized as White or non-polluting industry.*
5. *SPCBs/PCCs may issue consent to the industries*
   - *Red category of industries for 5 years.*
   - *Orange category of industries for 10 years.*
   - *Green category of industries for 15 years.*
   - *No necessity of consent for non-polluting industries.*
6. *No red categories of industries will be permitted to establish in eco-sensitive areas and protected areas.*

E: Follow-up Actions made on the Resolutions :-

- Accordingly, a Committee comprising the Chairmen of CPCB, APPCB, TNPCB, MPPCB, MPCB, PPCB, WBPCB and MS, CPCB was constituted vide CPCB OM dated

23.04.2015 to review & classify industrial sectors into different categories based on criteria of respective pollution potential.

- The categorization is made on the basis of following:
  - Quality of emissions (air pollutants) generated
  - Quality of effluents (water pollutants) generated
  - Types of hazardous wastes generated
  - Consumption of resources

- Reference is taken from the following :
  - The Water (Prevention and Control of Pollution) Cess Act, 1977
  - Standards so far prescribed for various pollutants under the Environment (Protection) Act , 1986
  - Doon Valley Notification, 1989 issued by MoEF.

F : Scoring Methodology :

The details on the scoring methodology in respect of the aforesaid 3 components is presented in the following tables F-1 to F-4 .

Table F-1 : Water Pollution Scoring Methodology

Sl. No.	Activity / Types of Discharges	Score
Part A : Score W1 : Score based on types of expected criteria water-pollutants present in industrial processes waste waters. **Maximum of the following seven categories is to be taken.**		
W11	Waste-water which is polluted and the pollutants are - • not easily biodegradable (very high strength waste waters having BOD > 5000 mg/l); or • toxic; or • both toxic and not easily biodegradable. (Presence of criteria water pollutants having prescribed standard limits up-to 10 mg/l or having BOD > 5000 mg/l). For details appendix 1 may be referred)	30
W12	Non-toxic high strength polluted waste-water having BOD in the range of 1000-5000 mg/l and the pollutants are biodegradable. (Presence of criteria water pollutants having prescribed standard limits from 11 mg/l to 250 mg/l and having BOD strength in the range of 1000-5000 mg/l) . For details appendix 1 may be referred)	25
W13	Non toxic- polluted waste-water having BOD below 1000 mg/l and the pollutants are easily biodegradable. (Presence of criteria water pollutants having prescribed standard limits from 11mg/l to 250 mg/l and having BOD strength below 1000 mg/l) . For details appendix 1 may be referred)	20
W14	Waste-water generated from the chemical processes and which is polluted due to presence of high TDS (total dissolved solids) of inorganic nature. (Presence of criteria water pollutants having prescribed standard limits more than 250 mg/l. For details appendix 1 may be referred)	15
W15	Waste-water generated from the physical unit operations / processes and which is polluted due to presence of TDS (total dissolved solids) of inorganic nature and of natural origin like fresh-water RO rejects, boiler blow-downs, brine solution rejects etc. (Presence of criteria water pollutants having prescribed standard limits more than 250 mg/l. For details appendix 1 may be referred)	12
W16	Non-toxic polluted waste-water from those units which are: • Having the overall waste-water generation less than 10 KLD and • The pollutants are easily bio-degradable having BOD below 200 mg/l which can be easily treated in a single stage ASP (activated	12

	sludge process) based Effluent Treatment Plant. Note : This is a special category and is applicable to only those units having over-all liquid waste generation less than 10 KLD with low strength organic load.	
W17	Waste-water from cooling towers and cooling-re-circulation processes	10
Part B : Score W2 : Score based on huge discharges of any kind (Penalty Clause)		
W2	Industry having overall liquid waste generation of 100 KLD or more including industrial & domestic waste-water.	10
Overall Water Pollution Score W = W1+W2		

Appendix 1

- **<u>Water Pollutants covered under Group W11:</u>**

  - ✓ Free available Chlorine , Total residual chlorine, Fluoride (as F), Sulphide (as S), Free Ammonical Nitrogen, Dissolved phosphates (as P), Free ammonia (as NH3), Nitrate Nitrogen, Mercury (As Hg), Selenium (as Se), Hexa-valent chromium (as Cr + 6), Lead (as Pb), Tin , Vanadium (as V), Cadmium (as Cd), Manganese (as Mn), Total chromium (as Cr), Copper (as Cu), Iron (as Fe), Nickel (as Ni), Zinc (as Zn), Benzene, Arsenic (as As), Benzo-a-pyrene, Cyanide (as CN), Phenolic compounds (as C_6H_5OH) , Adsorbable Organic Halogens (AOX), Boron and /or
  - ✓ BOD strength of waste water > 5000 mg/l

- **<u>Water Pollutants covered under Group W12:</u>**

  - ✓ Sodium Absorption Ratio (SAR) , Biochemical oxygen demand (3 days at 27°C), Total Kjeldahl nitrogen (TKN), Ammonical nitrogen (as N), Suspended solids, Total nitrogen (as N), Chemical oxygen demand, Oils & grease and
  - ✓ BOD strength of waste water is in the range of 1000-5000 mg/l

- **<u>Water Pollutants covered under Group W13:</u>**

  - ✓ Sodium Absorption Ratio (SAR), Biochemical oxygen demand (3 days at 27°C), Total Kjeldahl nitrogen (TKN), Ammonical nitrogen (as N), Suspended solids, Total nitrogen (as N), Chemical oxygen demand and
  - ✓ BOD strength of waste water is below 1000 mg/l

- **<u>Water Pollutants covered under Group W14 and W15:</u>**

  Chlorides as Cl, Colour , Total dissolved solids (TDS - Inorganic)

- **<u>Water Pollutants covered under Group W16</u>**

  - ✓ BOD strength of waste water is below 200 mg/l and overall discharge is less than 10 KLD.

Table F-2 : Air Pollution Score

Sl. No.	Air Pollutants Group	'Range of Prescribed Standard ' of criteria pollutants	Marks
Part 1 : Score A1 = Score based on types of expected criteria Air Pollutants present in the emissions . Maximum of the following seven categories is to be taken. For details appendix 2 may be referred.			
1	Group A1A	Presence of criteria air pollutants having prescribed standard limits up-to 2 mg/Nm3	30
2	Group A1B	Presence of criteria air pollutants having prescribed standard from 3 to10 mg/Nm3	25
3	Group A1C	Presence of criteria air pollutants having prescribed standard from 11 to 50 mg/Nm3	20
4	Group A1D	Presence of criteria air pollutants having prescribed standard from 51 to 250 mg/Nm3	15
5	Group A1E	Presence of criteria air pollutants having prescribed standard from 251mg/Nm3 & above.	10
6	Group A1F	• Generation of fugitive emissions of Particulate Matters which are: o Not generated as a result of combustion of any kind of fossil-fuel. o Generated due to handling / processing of materials without involving the use of any kind of chemicals. o Which can be easily contained /controlled with simple conventional methods	10
7	Group A1G	• Generation of Odours which are : o Generated due to application of binding gums / cements /adhesives /enamels o Which can be easily contained /controlled with simple conventional methods	10
Part 2 : Score A2 = Score based on consumption of fuels and technologies required for air pollution control :			
6	Group A2F1	• All such industries in which the daily consumption of coal/fuel is more than 24 MT/day and the particular (Particulate/gaseous/process) emissions from which can be controlled only with high level equipments / technology like ESPs, Bag House Filters, High Efficiency chemical wet scrubbers etc.	10
7	Group A2F2	• All such industries in which the daily consumption of coal/fuel is from 12 MT/day to 24 MT/day and the particular (Particulate/gaseous/process) emissions from which can be controlled with suitable proven technology.	5
Overall Air Pollution Score –A = A1 + A2			

Appendix 2

- **<u>Air pollutants covered under Group A1A:</u>**

  Cd+Th, Dioxins & Furans, Mercury, Asbestos

- **<u>Air Pollutants covered under Group A1B:</u>**

  HF, Nickel+ Vanadium, HBr, Manganese, Lead, H2S, P2O5 as H3PO4

- **<u>Air Pollutants covered under Group A1C:</u>**

  Chlorine, Pesticide compounds, CH3Cl, TOC, Total Fluoride, Hydrocarbons, NH3, HCL vapour & Mist, H2SO4 Mist, SO2

- **<u>Air Pollutants covered under Group A1D:</u>**

  CO, PM, CO, NOx

- **<u>Air Pollutants covered under Group A1E:</u>**

  NOx with liquid-fuel, SO2 with liquid-fuel

Table F-3: Hazardous Waste Generation Score

Sl.No.	**Types of Hazardous Waste Generated as** per Schedule 1 / Schedule 2 of Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules , 2008 . **Maximum of the following four categories is to be taken**	**Score**
HW1	• Land disposable HW which require special care & treatment for stabilization before disposal.	20
HW2	• Incinerable HW	15
HW3	• Land disposable HW which doesn't require treatment & stabilization before disposal. • High volume low effect wastes such as fly-ash, phspho-gypsum, red-mud, slags from pyro-metallurgical operations, mine tailings and ore beneficiation rejects)	10
HW4	• Recyclable HW, which are easily recyclable with proven technologies.	10

Table F-4 : Calculation Sheet

Industrial Sector - .....

1. Water Pollution Score (W)			
Scores	Waste Water Category	Value	
Score on W1			
Score on W2			
Water Pollution Score = W1+W2			
2. Air Pollution Score (A)			
Scores	Air Pollutant Category	Value	
Score on A1			
Score on A2	-	-	
Air Pollution Score = A1+A2			
3. Hazardous Waste Score (HW)			
Score	HW Category	Value	
HW			
Grand Total = W + A + HW			

Note :

1. Any of the industrial sector having only either air pollution (A) or water pollution (W) , the score will be normalized to 100 as per the following formula –

   Normalized Score = {100 x W (or A)} / 40

2. Any of the industrial sector having air pollution (A) and water pollution (W) both but no hazardous waste generation (H) , the joint score of air & water pollution will be normalized to 100 as per the following formula –

   Normalized Score = {100 x (W+A)} / 80

3. Any of the industrial sector having air pollution (A) & hazardous waste generation (H) but no water pollution (W), the joint score of air pollution & hazardous waste generation will be normalized to 100 as per the following formula –

   Normalized Score = {100 x (A+H)} / 60

4. Any of the industrial sector having water pollution (W) and hazardous waste generation (H) but no air pollution (A), the joint score of water pollution & hazardous waste generation will be normalized to 100 as per the following formula –

   Normalized Score = {100 x (W+H)} / 60

G : Developments :

i. The existing Red (85 sectors) , Orange (73 sectors) and Green (86 sectors) i.e a total of 244 industrial sectors have been assessed as per the proposed formula by the Working Group. For this purpose, concerned Engineers / Scientists from the Member SPCBs were also involved & consulted during May 28-29, 2015.

ii. After careful examination and consideration of the suggestions of concerned stake-holders the "Draft Document on Revised Concept of Categorization of Industrial Sectors " was prepared by the Committee and circulated to all the SPCBs, PCCs and concerned Ministries for their information & comments. The ' Draft Document ' was uploaded on the website of CPCB also for information & comments of one & all.

iii. The matter was discussed during the 170th Board Meeting also and issues raised by the Board Members pertaining to some of the industrial sectors were clarified.

iv. Responses were received from various concerned Ministries, SPCBs, Industrial Associations including individuals.

v. Based on the above, final meeting was convened by the Secretary , MoEFCC with CPCB and senior officers of MoEFCC on January 06, 2016 to resolve the issues appropriately and finalize the 'Re-categorization'. Accordingly , following modifications in the 'Range of Pollution Index 'for the purpose of categorization of industrial sectors were suggested :

- Industrial Sectors having Pollution Index score of 60 and above – Red category
- Industrial Sectors having Pollution Index score of 41 to 59 –Orange category
- Industrial Sectors having Pollution Index score of 21 to 40 –Green category
- Industrial Sectors having Pollution Index score incl.& upto 20 –White category

vi. Based on the final criteria as described in v above , the final categorization is as follows :

Category of Industrial Sector	Existing Categorization	Proposed (New) categorization
Red	85	60
Orange	73	83
Green	86	63
White	---	36
Total	244	242

vii. In the proposed categorization, some of the industrial sectors have been either deleted due to duplication or merged with similar type of sectors on account of same

characteristics of pollution generation. In a similar way, some of the industrial sectors are split into more sectors on account of variation in the raw materials / manufacturing process. As a result final totals of the existing and proposed categorization are different.

viii. The industrial sector which doesn't fall under any of the above four categories (Red, Orange, Green and White) , decision with regard to its categorization will be taken at the level of concerned SPCB/PCC by a committee headed by the Member Secretary , SPCB/PCC and comprising of two senior cadre Engineers / Scientists of the SPCB / PCC in accordance with the scoring-criteria specified in this document.

ix. The summary is presented in the following Table G-1 and final lists of Red, Orange, Green and White categories of industries are presented in Tables G-2, G-3, G-4 and G-5 respectively, which are self explanatory.

Table G-1: Final Summary Table Red , Orange, Green and White Categories of Industries (16-01-16)

Sl No.	Original Categorization	Initial Nos.	Addition by Splitting into further classes	Deletion/ Shifting to foot-note due to vague term / Merger / other reasons	Re-categorization to Red	Re-categorization to Orange	Re-categorization to Green	Re-categorization to White	Check
		1	2	3	4	5	6	7	(1+2) = (3 to 7)
1	Red	85	11	7	60	26	3	Nil	96=96
2	Orange	73	2	3	Nil	51	19	2	75=75
3	Green	86	Nil	3+2=5	Nil	6	41	34	86=86
Final Categorization		244	13	15	**60 (Red)**	**83 (Orange)**	**63 (Green)**	**36 (White)**	**257 =257** (Total categories including in foot-note)

Table G-2 : Final List of Red Category of Industrial Sectors

Sl No.	Orgnl Sl.No	Industry Sector	W1	W2	W	A1	A2	A	H	W+A+H	Revised Category	REMARKS
1.	38	Isolated storage of hazardous chemicals (as per schedule of manufacturing, storage of hazardous chemicals rules ,1989 as amended)									R-R	As per provisions of Rules, to be kept under Red category especially for safety purposes.
2.	4	Automobile Manufacturing (integrated facilities)	30	-	30	20	-	20	10	60	**R-R**	i. Such types of plants are having either one or combinations of polluting activities viz. washing, metal surface finishing operations, pickling, plating, electro-plating , phosphating, painting , heat treatment etc. ii. Some of such plants may outsource some /all of the polluting activities. In such cases, after thorough inspection of such units by concerned SPCB, re-categorization of the industry shall be made accordingly.
3.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Spent cleared metal catalyst containing copper,, Spent cleared metal catalyst containing zinc,,	30	-	30	20	-	20	10	60	**R-R**	All the three types of pollutants are expected.
4.	44	Manufacturing of lubricating oils ,grease and petroleum based products	20	-	20	20	-	20	20	60	**R-R**	Generates all sorts of pollution.
5.	66 E	DG Set of capacity > 5 MVA	-	-	-	20	5	25	-	62.5	**R-R**	i. Mainly air polluting. ii. DG sets consume the diesel @ 0.21 litres/hr/KVA at full load. iii. Average running is taken @ 12 hrs / day although many of the DG sets run for more than this period.
6.	31	Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black	10	-	-	20	5	25	10	62.5	**R-R**	Mainly air polluting. Air pollution score is normalized to 100.

7.	39	Lead acid battery manufacturing(excluding assembling and charging of lead-acid battery in micro scale)	10	-	10	25	-	25	10	62.5	**R-R**	i. Mainly air polluting. Air pollution scores are normalized to 100. ii. Lead Acid Battery manufacturing consists of various stages which broadly involve (after producing or receiving lead oxide): Paste Mixing , Grid Casting , Grid Pasting & Curing , Hydro-setting, parting & enveloping , Stacking, grouping & inter-cell welding , Formation. iii. Exposure of workmen to lead during all or any of the processes outlined above exceeds the prescribed standards if appropriate equipment in this respect is not installed at any Battery Manufacturing Unit. iv. All of the above processes, some more than others, involve release of lead particles or fumes into the environment. Pollution from the above processes can be grouped into two possible types, viz: (a) Lead Oxide becomes airborne and there is Particulate Pollution (b) Fumes are generated and there is Gaseous Pollution
8.	62	Phosphate rock processing plant	30	-	30	20	-	20	-	62.5	**R-R**	i. The separation of phosphate rock from impurities and non-phosphate materials for use in fertilizer manufacture consists of beneficiation, drying or calcining at some operations, and grinding. Phosphate rock from the mines is first sent to beneficiation units to separate sand and clay and to remove impurities. Steps used in beneficiation depend on the type of rock. ii. The water & air pollution scores are normalized to 100.

9.	66	Power generation plant [except Wind and Solar renewable power plants of all capacities and Mini Hydel power plant of capacity <25MW]	10	-	10	15	10	25		62.5	**R-R**	1. Mainly air polluting. It uses a mixture of biomass (agro based) and coal (< 10 %) as a fuel. Almost, round the year operation. 2 . In case of DG sets of 5 MVA & more and emissions of SO2 will take place due to use of liquid fuel. Air pollution score will be =20 + 10 = 30, Normalized score will be 75. 3. In case of 'Waste to Energy Plants' , water will be used for cooling and air score will be - 30+10 = 40.
10.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Spent catalyst containing nickel, cadmium, Zinc, copper, arsenic, vanadium and cobalt,	30	-	30	25	-	25	10	65	**R-R**	All the three types of pollutants are expected.
11.	67	Processes involving chlorinated hydrocarbons	30	-	30	20	-	20	15	65	**R-R**	Chlorinated hydrocarbons are used in the manufacture of insecticides, pesticides and organo chloro pesticides. Effluents & emissions are toxic in nature.
12.	74	Sugar (excluding Khandsari)	20	10	30	15	10	25	10	65	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Sugar mills generate all sorts of pollution problems.
13.	22	Fibre glass production and processing (excluding moulding)	-	-	-	20	-	20	20	67	**R-R**	i. The use of styrene in most methods of fiberglass production causes hazardous air pollution that is harmful to breathe at excessive levels. ii. It is mainly air polluting & HW generating industry. The air pollution & HW scores are normalized to 100. iii. In case of lead containing glass, the score of A1 will be 25 and final normalized score will be 75 and shall be categorized as Red.
14.	23	Fire crackers manufacturing and bulk storage facilities	-	-	-	20	-	20	20	67	**R-R**	i. This is the normalized score based on air pollution & HW generation. ii. Various hazardous chemicals are used in the manufacturing process. iii. These chemicals are namely Potassium Nitrate , Potassium per-chlorate, Barium Nitrate, Aluminium compounds, Copper Chloride etc.

													iv. These chemicals are highly hazardous and cause serious diseases among the workers. especially ability of blood to carry oxygen leading to headaches, methemoglobinemia and kidney problems , skin problems, thyroid metal fume etc.
15.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Dismantlers Recycling Plants -- Components of waste electrical and electronic assembles comprising accumulators and other batteries included on list A, mercury-switches, activated glass cullets from cathode-ray tubes and other activated glass and PCB-capacitors, or any other component contaminated with Schedule 2 constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they exhibit hazard characteristics indicated in part C of this Schedule.	-	-	-	30	0	30	10	67	R-R	Mainly air polluting and hazardous waste generating. Air & HW pollution scores are jointly normalized to 100.
16.	47	Milk processes and dairy products(integrated project)	20	10	30	20	5	25	-	68.75	**R-R**	i. Water as well as air polluting due to use of boilers. ii. Water & air pollution scores are normalized to 100.
17.	63	Phosphorous and its compounds	30	-	30	25	-	25	-	68.75	**R-R**	Water pollution & air pollution containing compounds of phosphorous are expected
18.	61	Pulp & Paper (waste paper based without bleaching process to manufacture Kraft paper)	20	10	30	15	10	25	0	68.75	**R-R**	Mainly water & air polluting . Water & air pollution scores are normalized to 100.
19.	13	Coke making , liquefaction, coal tar distillation or fuel gas making	30	-	30	20	-	20	20	70	**R-R**	It is a kind of petrochemical industry.

20.	41	Manufacturing of explosives, detonators, fuses including management and handling activities	30	-	30	20	-	20	20	70	**R-R**	i. Explosives manufacture and use contribute some measure of hazardous waste to the environment. ii. Nitroglycerin produces several toxic byproducts such as acids, caustics, and oils contaminated with heavy metals. These must be disposed of properly by neutralization or stabilization and transported to a hazardous waste landfill. iii. The use of explosives creates large amounts of dust and particulate from the explosion, and, in some cases, releases asbestos, **lead,** and other hazardous materials into the atmosphere.
21.	45	Manufacturing of paints varnishes, pigments and intermediate (excluding blending/mixing)	30	-	30	25	-	25	15	70	**R-R**	i. The process may cause considerable emissions of volatile organic compounds (VOC). VOC contribute to the creation of ozone in the lower layers of the atmosphere (photochemical air pollution) and can present danger to health. ii. Dust and odour may also be a problem. iii. Washing of vessels will contribute waste-waters. iv. Large quantity of HWs are also produced.
22.	56	Organic Chemicals manufacturing	30	-	30	20	-	50	20	70	**R-R**	Such types of industrial sectors generate all sorts of pollution.
23.	1	Airports and Commercial Air Strips	20	10	30	-	-	-	10	75	**R-R**	i. The Airports are generating mainly the waste-waters. ii. This is the water pollution normalized score for airports having discharge more than 100 KLD. iii. The airports / strips having discharge less than 100 KLD will have score of 50 and hence orange category. iv. If the score is normalized wrt water + HW both, then all the airports will come under Orange category (score - 58.33).
24.	3	Asbestos and asbestos based industries	-	-	-	30	-	30	10	75	**R-R**	i. This is mainly air polluting industry. ii. Final score is based on air pollution score only. iii. Asbestos is carcinogenic and banned in many countries.
25.	5	Basic chemicals and electro chemicals and its derivatives including manufacturing of acid	30	-	30	-	-	-	10	75	**R-R**	i. Standards prescribed for Inorganic Chemicals are adopted. ii. It is mainly water polluting industry having effluents which are toxic and not easily biodegradable.

												iii. Water pollution score normalized to 100 is undertaken. iv. The earlier Red category industrial sector namely "Hydrocyanic acid and its derivatives " is also merged under this industrial sector.
26.	7	Cement	-	-	-	20	10	30	-	75	**R-R**	This is mainly air polluting industry & hence normalized air pollution score.
27.	9	Chlorates, per-chlorates & peroxides	30	-	30	-	-	-	-	75	**R-R**	i. It is mainly water polluting industry having effluents which are toxic and not easily biodegradable. ii. Water pollution score normalized to 100 is undertaken.
28.	10	Chlorine, fluorine, bromine, iodine and their compounds	30	-	30	-	-	-	-	75	**R-R**	i. It is mainly water polluting industry having effluents which are toxic and not easily biodegradable. ii. Water pollution score normalized to 100 is undertaken.
29.	16	Dyes and Dye- Intermediates	30	-	30	20	5	25	20	75	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Such types of industrial sectors generate all sorts of pollution.
30.	26	Health-care Establishment (as defined in BMW Rules)	20	10	30	-	-	-	-	75	**R-R**	i. Mainly water polluting. ii. The water pollution score is normalized to 100 & valid for Hospitals having total waste-water generation > 100 KLD. iii. The hospitals with incinerator will be categorized as Red irrespective of the quantity of the waste-water generation. iv. The hospitals having total waste-water generation less than 100 KLD and without incinerator, the normalized water pollution score will be 50 and will be categorized as Orange category.
31.	29	Hotels having overall waste-water generation @ 100 KLD and more.	20	10	30	15	-	15	-	75	**R-R**	i. Mainly water polluting. Small boiler may be installed. ii. The water pollution score is normalized to 100 & valid for Hotels having waste-water generation > 100 KLD. iii. The hotels having more than 20 rooms and waste-water generation less than 100 KLD and having a coal / oil fired boiler , the pollution score will be 35/40 & are categorized as Orange. iv. The hotels having more than 20 rooms and waste-water generation less than 10 KLD and

												having no-boiler & no hazardous waste generation, the pollution score will be 20 & are categorized as Green.
32.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Lead acid battery plates and other lead scrap/ashes/residues not covered under Batteries (Management and Handling) Rules, 2001. [* Battery scrap, namely: Lead battery plates covered by ISRI, Code word "Rails" Battery lugs covered by ISRI, Code word "Rakes". Scrap drained/dry while intact, lead batteries covered by ISRI, Code word "rains".	30	-	30	25	--	25	20	75	**R-R**	All the three types of pollutants are generated.
33.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Integrated Recycling Plants -- Components of waste electrical and electronic assembles comprising accumulators and other batteries included on list A, mercury-switches, activated glass cullets from cathode-ray tubes and other activated glass and PCB-capacitors, or any other component contaminated with Schedule 2 constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they exhibit hazard characteristics indicated in part C of this Schedule.	30	-	30	25	-	25	20	75	**R-R**	All the three types of pollutants are expected.
34.	43	Manufacturing of glue and gelatin	30	10	40	20	-	20	-	75	**R-R**	Highly water polluting & obnoxious air polluting.
35.	49	Mining and ore beneficiation	30	10	40	15	5	20	-	75	**R-R**	Both air and water polluting. Score is normalized with air & water pollution.

36.	52	Nuclear power plant	10	-	10	30	-	30	15	75	**R-R**	i. Mainly air polluting due to incinerator. Others - cooling water. ii. Air pollution score is normalized to 100.
37.	58	Pesticides (technical) (excluding formulation)	30	-	30	25	-	25	20	75	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Such types of industrial sectors generate all sorts of pollution.
38.	64	Photographic film and its chemicals	30	-	30	-	-	-	-	75	**R-R**	i. Silver salts and other chemicals are used in preparation. Slight quantity of effluents is generated. ii. Water pollution scores are normalized to 100.
39.	68	Railway locomotive work shop/Integrated road transport workshop/Authorized service centers	20	10	30	-	-	-	10	75	**R-R**	i. Mainly water polluting industry . Water is used in the washing of locomotives, road transport vehicles during servicing. ii. This score is valid for those Centers having discharge more than 100 KLD. iii. Service Centers having waste-water generation < 100 KLD, the normalized score will be =(100*20)/40= 50.
40.	84	Yarn / Textile processing involving any effluent/emission generating processes including bleaching, dyeing, printing and colouring	30	10	40	15	-	15	20	75	**R-R**	In this sector all sorts of pollution are generated.
41.	8	Chlor Alkali	30	10	40	20	10	30	10	80	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Chlor-alkali units are having different section like NaOH, Cl2, SBP etc which are having toxic effluents. Additionally , fuel consumption is also on higher-side.
42.	70	Ship Breaking Industries	30	-	30	30	-	30	20	80	**R-R**	i. The ship-breaking industry creates numerous hazards for the coastal and marine environment. ii. Ship-breaking releases a large number of dangerous pollutants, including toxic waste, oil, poly-chlorinated biphenyls, and heavy metals, into the waters and sea bed. iii. While most of the oil is removed before a ship is scrapped, sand used to mop up the remaining oil is thrown into the sea. High concentrations of oil and grease are then found in the coastal waters, choking marine life.

												iv. Solid waste strewn on the shore, 45 tonnes on any given day according to a study by the Central Pollution Control Board, also finds its way into the sea. v. Adding to the stress on coastal waters, the organic load from the thousands of workers living in cramped conditions with little or no sanitary facilities results in unacceptably high levels of BOD.
43.	53	Oil and gas extraction including CBM (offshore & on-shore extraction through drilling wells)	30	-	30	-	-	-	20	83	**R-R**	i. Mainly water polluting & hazardous waste generating. ii. The water pollution & HW generation scores are normalized to 100.
44.	36	Industry or process involving metal surface treatment or process such as pickling/ electroplating/paint stripping/ heat treatment using cyanide bath/ phosphating or finishing and anodizing / enamellings/ galvanizing	30	-	30	-	-	-	20	83	**R-R**	Mainly water polluting & toxic hazardous waste generating industry. Scores are normalized to 100.
45.	80	Tanneries	30	-	30	-	-	-	20	83	**R-R**	Mainly water polluting & hazardous waste generating industry. Scores are normalized to 100.
46.	65	Ports and harbour, jetties and dredging operations	30	10	40	15	10	25	20	85	**R-R**	This category contain all sorts of pollution.
47.	77	Synthetic fibers induding rayon ,tyre cord, polyester filament yarn	30	10	40	25	10	35	10	85	**R-R**	This sector generates all sorts of pollution problems.
48.	81	Thermal Power Plants	30	10	40	20	10	30	15	85	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. TPP generate all sorts of pollution problems.
49.	71	Slaughter house (as per notification S.O.270(E)dated 26.03.2001)and meat processing industries, bone mill, processing of animal horn, hoofs and other body parts	25	10	35	-	-	-	-	87.5	**R-R**	Mainly water polluting and obnoxious odour generating industry. The water pollution score is normalized to 100
50.	2	Aluminium Smelter	30	10	40	20	10	30	20	90	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. This sector is generating all sorts of pollution i.e. air, water and HW.
51.	12	Copper Smelter	30	10	40	20	10	30	20	90	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Integrated Copper Smelters contain all sorts of

												pollution.
52.	20	Fertilizer (basic) (excluding formulation)	30	10	40	20	10	30	20	90	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Generates all sorts of pollution.
53.	37	Iron & Steel (involving processing from ore/ integrated steel plants) and or Sponge Iron units	30	10	40	20	10	30	20	90	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Such types of industrial sectors generate all sorts of pollution.
54.	61	Pulp & Paper (waste paper based units with bleaching process to manufacture writing & printing paper)	25	10	35	25	10	35	20	90	**R-R**	Waste paper based Pulp & Paper mills with bleaching process generate all sorts of pollution.
55.	85	Zinc Smelter	30	10	40	20	10	30	20	90	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Integrated Zinc smelter generates all sorts of pollution problems.
56.	55	Oil Refinery (mineral Oil or Petro Refineries)	30	10	40	25	10	35	20	95	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Such types of industrial sectors generate all sorts of pollution.
57.	59	Petrochemicals Manufacturing (including processing of Emulsions of oil and water)	30	10	40	25	10	35	20	95	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Such types of industrial sectors generate all sorts of pollution. iii. The earlier red category industrial sector namely "Processing of Emulsions of Oil & Water " is merged with this industrial sector.
58.	60	Pharmaceuticals	30	10	40	30	5	35	20	95	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Such types of industrial sectors generate all sorts of pollution.
59.	61	Pulp & Paper (Large-Agro + wood) , Small Pulp & Paper (agro based-wheat straw/rice husk)	30	10	40	25	10	35	20	95	**R-R**	i. This industrial sector is the one among the '17 categories of Highly Polluting Industries'. ii. Large /Small Agro based Pulp & Paper mills contribute all sorts of pollution problems.
60.	15	Distillery (molasses / grain / yeast based)	30	10	40	-	-	-	-	100	**R-R**	Mainly water polluting industry. Final score is the normalized water pollution score.

Note :

i. *Under the column Revised Category, the full forms of the abbreviations are as follows :*
   a. *R-R means original category was Red and revised category is also Red*
   b. *R-O means original category was Red and revised category is Orange*
   c. *O-O means original category was Orange and revised category is also Orange*
   d. *O-G means original category was Orange and revised category is Green*
   e. *O-W means original category was Orange and revised category is White*
   f. *G-O means original category was Green and revised category is Orange*
   g. *G-G means original category was Green and revised category is also Green*
   h. *G-W means original category was Green and revised category is White*

ii. *There are specific remarks in respect of some of the industrial sectors. These sectors are either merged with other relevant sectors or deleted due to duplication. The overall details are as follows :*

Sl No.	Original Sl No.	Industry Sector	Original Category	Remarks
1	14	Common treatment and disposal facilities(CETP, TSDF, E-waste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary land fill site)	R	i. All such facilities are classified as Red but special category projects as these are parts of pollution control facilities. ii. In case of CETP , the categorization will depend upon the category of member industries being served.
2	18	Processing of Emulsions of Oil & Water		It is a part of Petrochemical industries. Transferred and merged with the industrial sector namely 'Petrochemicals' at Sl. No. 54.
3	27	Heavy engineering including ship building (with investment on Plant & Machineries more than Rs 10 crores)	R	Most of the pollution generating processes / operations under this category are similar to the industry category namely "Automobile Manufacturing (integrated facilities)" at Sl . No. 1 and may be referred accordingly.
4	30	Hydrocyanic acid and its derivatives	R	Have been merged with the red category industrial sector namely " Basic chemicals and electro chemicals and its derivatives including manufacturing of acid " at Sl. No. 24
5	32	Industrial estates/ parks / complexes/ areas/ export processing zones/ SEZs/ Biotech parks/ leather complex	R	The classification will depend upon the category(ies) of the industries operating / proposed to be permitted in the area. In this context, guidelines prescribed in EIA Notification, 2006 shall be followed.
6	33	Industrial inorganic gases namely- a) Chemical gas- Acetylene, hydrogen, chlorine, fluorine, ammonia, sulphur dioxide, ethylene, hydrogen-sulphide, phosphine b) Hydrocarbon gases- Methane , ethane, propane	R	These gases are generally secondary products and produced alongwith other main products. To be classified as per the main parent plant.
7	69	Reprocessing of used oils & waste oils	R	i. The industry generates mainly the air pollution and oil bearing hazardous wastes. The normalized (air pollution & HW generation score is 58.33. ii. To be deleted as already covered under HW Recyclers / Re-processors (Used oils / Waste Oils) under Orange Category

Table G-3 : Final List of Orange Category of Industrial Sectors

Final Sl. No.	Orgnl S.No	**Industry Sector**	W1	W2	W	A1	A2	A	H	W+A+H	Revised category	Remarks
1.	20	Dismantling of rolling stocks (wagons/ coaches)	--	--	--	15	--	15	10	41.67	O-O	Emissions of dust and generation of waste oils take place during dismantling. Air pollution & HW generation scores (15+10=25) are normalized to 100.
2.	5	Bakery and confectionery units with production capacity > 1 TPD. (With ovens / furnaces)	20	--	20	15	--	15	--	43.75	O-O	
3.	10	Chanachur and ladoo from puffed and beaten rice(muri and shira) using husk fired oven	20	--	20	15	--	15	--	43.75	O-O	Normal water and air polluting.
4.	23	Coated electrode manufacturing	15	0	15	20	0	20	0	43.75	**G-O**	Preparation of core wire / rod, preparation of dry mix, preparation of wet mix, application of coating by extrusion, baking of coated electrodes
5.	24	Compact disc computer floppy and cassette manufacturing / Reel manufacturing	15	0	15	20	0	20	0	43.75	**G-O**	Generates waste-water and process emissions.
6.	24	Flakes from rejected PET bottle	20	-	20	15	-	15	-	43.75	R-O	Normal water & air pollutions are generated.
7.	30	Food and food processing including fruits and vegetable processing	20	--	20	15	--	15	--	43.75	O-O	Normal water and air polluting.
8.	40	Jute processing without dyeing	20	--	20	15	--	15	--	43.75	O-O	CPCB has notified standards for this category. Both air and water pollutions are generated.
9.	56	Manufacturing of silica gel	15	0	15	20	0	20	0	43.75	**G-O**	Waste-waters containing TDS and emissions of H_2SO_4 are generated.

10.	45	Manufacturing of tooth powder, toothpaste, talcum powder and other cosmetic items	20	--	20	15	--	15	--	43.75	O-O	Both air and water pollution are generated.
11.	55	Printing or etching of glass sheet using hydrofluoric acid	15	--	15	20	--	20	--	43.75	O-O	Both air and water pollution are generated.
12.	65	Silk screen printing, sari printing by wooden blocks	20	--	20	15	--	15	--	43.75	O-O	Wash-water and PM emissions from boilers .
13.	76	Synthetic detergents and soaps(excluding formulation)	20	-	20	15	-	15	-	43.75	R-O	i. This is the score for units having generation of waste-waters less than 100 KLD. ii. The units having waste-water generation more than 100 KLD will become mainly water polluting and accordingly normalized water pollution score will be 75 and be categorized as Red.
14.	71	Thermometer manufacturing	15	--	15	20	--	20	--	43.75	O-O	Process - making glass bulb, forming reservoir in the glass tube for fluid, inserting fluid, scale marking. Use of fuel to heat the glass tubes and hydrofluoric acid to seal the scaling. Small quantities of spent acids are generated.
15.	14	Cotton spinning and weaving (medium and large scale)	--	--	--	15	--	37.5	10	47.5	O-O	Mainly air polluting industry. Sources of air pollution (PM) are the fine particles of cotton from spinning process. Air pollution score is normalized to 100.
16.	1	Almirah, Grill Manufacturing (Dry Mechanical Process)	--	--	--	20	--	20	--	50	O-O	Air pollution due to spray painting (emissions of VOCs). Units without painting operations shall be categorized as White.

17.	2	Aluminium & copper extraction from scrap using oil fired furnace (dry process only)	--	--	--	20	--	20	10	50	O-O	i. Normalized Air pollution score. ii. Significant air pollution due to melting (emissions of SO2, PM).
18.	3	Automobile servicing, repairing and painting (excluding only fuel dispensing)	20	--	20	20	--	20	10	50	O-O	Normal water & air polluting and recyclable waste oil generating. If the waste water generation is more than 100 KLD, it will become mainly water polluting and Red category unit.
19.	4	Ayurvedic and homeopathic medicine	20	--	20	15	--	15	15	50	O-O	
20.	7	Brickfields (excluding fly ash brick manufacturing using lime process)	--	--	--	20	--	20	--	50	O-O	Significantly air polluting.
21.	8	Building and construction project more than 20,000 sq. m built up area	20	--	20	20	--	20	--	50	O-O	1. In the pre-construction stage , it is mainly air polluting due to generation of dust (PM) emissions. 2. After construction, it is mainly water polluting. If the discharge is more than 100 KLD, it will be having the normalized score of 75 and be categorized as Red.
22.	6	Ceramics and Refractories	-	-	-	20	-	20	-	50	R-O	i. Mainly air polluting industry. ii. This score is for the units having coal consumption < than 12 MT/day. iii. For the units having coal consumption > 12 MT /day, the normalized air pollution score will be 62.5 and shall be categorized as Red.

23.	11	Coal washeries	15	10	25	15	-	15	-	50	R-O	i. Wet washeries are mainly water polluting industry generating effluents which are having inorganic SS & TDS. Additionally, air pollution due to PM emissions is also generated. ii. Water & air pollution scores are jointly normalized to 100.
24.	16	Dairy and dairy products (small scale)	20	--	20	20	--	20	--	50	O-O	Water and air polluting both.
25.	18	DG set of capacity >1MVA but < 5MVA	--	--	--	20	--	20	--	50	O-O	Mainly air polluting . air pollution score is normalized to 100.
26.	17	Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	-	-	-	20	-	20	-	50	R-O	Mainly air polluting industry. Final score is the normalized air pollution score.
27.	19	Fermentation industry including manufacture of yeast, beer, distillation of alcohol (Extra Neutral Alcohol)	20	-	20	-	-	-	-	50	R-O	i. Mainly water polluting industry. This is the normalized water pollution score for units having discharge < 100 KLD. ii. For the units having discharge > 100 KLD, the normalized water pollution score will be 75 and shall be accordingly categorized as Red.
28.	21	Ferrous and Non- ferrous metal extraction involving different furnaces through melting, refining, re-processing, casting and alloy-making	-	-	-	15	5	20	10	50	R-O	i. Mainly air polluting. ii. This score is applicable to secondary production of ferrous & non-ferrous metals (excluding lead) up-to 1 MT/hour production.

												iii. For lead, the normalized air pollution score will be = (100*25)/40= 62.5 and is categorized as Red. iv. For Induction Furnace clubbed with AOD furnace – separate calculation shall be made based on the capacity of the furnaces. In such industries, the molten metal from induction furnace is transferred to AOD furnace where other metals like manganese and nickel are added to get the metal of desired constituents. The lime and silicon are also added for reduction of the metal oxides to the base metal. the normalized air pollution score will be = (100*25)/40= 62.5 and is categorized as Red.
29.	26	Fertilizer (granulation / formulation / blending only)	--	--	--	20	--	20	--	50	O-O	Air polluting.
30.	27	Fish feed, poultry feed and cattle feed	--	--	--	20	--	20	--	50	O-O	Obnoxious odour , H2S etc. AP score is normalized to 100
31.	28	Fish processing and packing (excluding chilling of fishes)	20	--	20	--	--	--	--	50	O-O	Mainly water polluting. WP score is normalized to 100.

32.	31	Forging of ferrous and non- ferrous metals (using oil and gas fired furnaces)	--	--	--	20	--	20	--	50	O-O	Heating furnace. Mainly air polluting.
33.	32	Formulation/pelletization of camphor tablets, naphthalene balls from camphor/ naphthalene powders.	--	--	--	20	--	20	--	50	O-O	Mainly air polluting. Emissions of Benzene, HC are expected.
34.	33	Glass ceramics, earthen potteries and tile manufacturing using oil and gas fired kilns, coating on glasses using cerium fluorides and magnesium fluoride etc.	--	--	--	20	--	20	--	50	O-O	Mainly air polluting. Emissions of SO2 are expected.
35.	35	Gravure printing, digital printing on flex, vinyl	20	--	20	20	--	20	10	50	O-O	Waste waters , emissions of VOCs
36.	36	Heat treatment using oil fired furnace (without cyaniding)	--	--	--	20	--	20	--	50	O-O	Mainly air polluting and noise generating. AP Score is normalized to 100.
37.	28	Hot mix plants	-	-	-	20	-	20	-	50	R-O	Mainly air polluting. Air pollution scores are normalized to 100.
38.	37	Hotels (< 3 star) or hotels having > 20 rooms and less than 100 rooms.	20	--	20	20	--	20	--	50	O-O	Mainly water polluting. WP score is normalized to 100.
39.	38	Ice cream	20	--	20	20	--	20	--	50	O-O	Wash-water and boilers / oven for pasteurization.
40.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Paint and ink Sludge/residues	-	-	-	20	0	20	0	50	R-O	Mainly air polluting. Air pollution score is normalized to 100
41.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Brass Dross „ Copper Dross„ Copper Oxide Mill Scale„ Copper Reverts, Cake & Residues„ Waste Copper and copper alloys in	10	-	10	20	-	20	10	50	R-O	Mainly air polluting.

		dispersible form,, Slags from copper processing for further processing or refining ,, Insulated Copper Wire,, Scrap/copper with PVC sheathing including ISRI-code material namely "Druid" ,, Jelly filled Copper cables ,, Zinc Dross-Hot dip Galvanizers SLAB,, Zinc Dross-Bottom Dross,, Zinc ash/Skimming arising from galvanizing and die casting operations,, Zinc ash/Skimming/other zinc bearing wastes arising from smelting and refining,, Zinc ash and residues including zinc alloy residues in dispersible from ,,										
42.	35	Industry or processes involving foundry operations	-	-	-	20	-	20	-	50	R-O	i. This score is valid for the foundries having capacity < 5 MT/hr as such units require the coal/coke @ < 500 kg/hr. ii. The units having capacity of 5 MT/hr and more, the coal/coke consumption will be more than 500 kg/hr and the normalized score will be 62.5 and classified accordingly as Red.
43.	40	Lime manufacturing (using lime kiln)	-	-	-	20	-	20	-	50	R-O	Mainly air polluting
44.	41	Liquid floor cleaner, black phenyl, liquid soap, glycerol mono-stearate manufacturing	20	--	20	20	--	20	--	50	O-O	Both air and water pollution are generated.

45.	42	Manufacturing of glass	10	-	-	20	-	20	-	50	R-O	i. Mainly air polluting (melting at 1500ºC and refining . ii. In case of lead glass , the score of A1 will be 25 and accordingly the normalized scores will be 62.5 i.e. Red .
46.	43	Manufacturing of iodized salt from crude/ raw salt	12	--	12	20	--	20	--	50	O-O	Boiling in Evaporators (multiple effect evaporators), centrifuging, iodization with KIO3 mixing . Mainly air polluting. Air pollution score is normalized to 100.
47.	42	Manufacturing of mirror from sheet glass	--	--	--	20	--	20	--	50	O-O	Evaporator & furnace for heating the metal to be applied as reflector on mirror. Mainly air polluting.
48.	44	Manufacturing of mosquito repellent coil	--	--	--	20	--	20	--	50	O-O	Mainly air polluting. Toxic fumes are expected.
49.	46	Manufacturing of Starch/Sago	25	-	25	15	-	15	-	50	R-O	i. Water and air polluting industry. Boiler is used for steam generation. ii. Water & air pollution scores are normalized to 100
50.	46	Mechanized laundry using oil fired boiler	20	--	20	20	--	20	--	50	O-O	Both air and water pollution are generated.
51.	47	Modular wooden furniture from particle board, MDF< swan timber etc, Ceiling tiles/ partition board from saw dust, wood chips etc., and other agricultural waste using synthetic adhesive resin, wooden box making (With boiler)	--	--	--	20	--	20	--	50	O-O	1. Mainly air polluting. Boiler as well as VOCs from use of adhesives. 2. Without boiler, it will be a Green category industry.
52.	50	New highway construction project	-	-	-	20	-	20	-	50	R-O	Mainly air polluting project.

53.	51	Non-alcoholic beverages(soft drink) & bottling of alcohol/non alcoholic products	20	-	20	15	5	20	-	50	R-O	i. Both air and water polluting. Score is normalized with air & water pollution. This score is valid for industries having waste-water generation < 100 KLD. ii. For the units having waste-water generation > 100 KLD the , normalized score would be 62.5 and categorized as Red.
54.	49	Paint blending and mixing (Ball mill)	20	--	20	20	--	20	10	50	O-O	Both air and water pollution are generated.
55.	62	Paints and varnishes (mixing and blending)	20	0	0	20	0	20	0	50	**G-O**	Waste-waters as well as fumes of VOCs due to solvents, pigments, varnishes.
56.	51	Ply-board manufacturing(including Veneer and laminate) with oil fired boiler/ thermic fluid heater(without resin plant)	0	--	0	20	--	20	--	50	O-O	Mainly air polluting because of use of boiler. AP score is normalized to 100
57.	52	Potable alcohol (IMFL) by blending, bottling of alcohol products	20	--	20	--	--	--	--	50	O-O	Mainly water polluting. WP score is normalized to 100.
58.	54	Printing ink manufacturing	20	--	20	20	--	20	--	50	O-O	1. Pigments, binders and solvents are used. 2. Boiler is also used. 3. Emissions of VOCs take place.
59.	70	Printing press	20	0	20	20	0	20	0	50	**G-O**	Colored waste-waters containing dyes and VOC emissions are generated.
60.	59	Reprocessing of waste plastic including PVC	20	--	20	20	--	20	--	50	O-O	Large quantities of wash-water and fugitive emissions are generated.
61.	61	Rolling mill (oil or coal fired) and cold rolling mill	10	--	10	20	--	20	--	50	O-O	Mainly air polluting. Air pollution score is normalized to 100. Others - cooling water and recyclable waste oils etc. are generated.
62.	67	Spray painting, paint baking, paint shipping	--	--	--	20	--	20	10	50	O-O	Mainly air polluting. Emissions of VOCs and HC are generated.

63.	72	Steel and steel products using various furnaces like blast furnace /open hearth furnace/induction furnace/arc furnace/submerged arc furnace /basic oxygen furnace /hot rolling reheated furnace	10	-	10	20	-	20	10	50	R-O	i. Mainly air polluting. In the emissions, oxides of manganese, nickel etc. are also present. ii. Air pollution score is normalized to 100.
64.	73	Stone crushers	-	-	-	20	-	20	-	50	R-O	Mainly air polluting. Air pollution score is normalized to 100.
65.	75	Surgical and medical products including prophylactics and latex	20	-	20	20	-	20	-	50	R-O	Both air as well as water polluting. Air and water pollution scores are normalized to 100.
66.	85	Tephlon based products	0	0	0	20	0	20	0	50	**G-O**	Due to spraying applications, emissions (HC) are generated
67.	70	Thermocol manufacturing (with boiler)	--	--	--	20	--	20	--	50	O-O	Polystyrene is heated. Mainly air polluting with boiler.
68.	82	Tobacco products including cigarettes and tobacco/opium processes	20	-	20	20	-	20	-	50	R-O	Such industries generate both air as well as water pollution. These scores are normalized to 100.
69.	72	Transformer repairing/ manufacturing (dry process only)	--	--	--	20	--	20	10	50	O-O	Mainly air polluting because of ovens, shot-blasting etc.
70.	73	Tyres and tubes vulcanization/ hot retreating	10	--	10	20	--	20	--	50	O-O	Mainly air polluting . Emissions of PM, VOCs and obnoxious odour are generated.
71.	83	Vegetable oil manufacturing including solvent extraction and refinery /hydrogenated oils	20	-	20	15	5	20	10	50	R-O	i. All sorts of pollution are generated. ii. This score is valid for plants having waste-water generation < 100 KLD. iii. If the waste-water generation is more than 100 KLD, the unit shall be classified as Red.
72.	74	Wire drawing and wire netting	20	--	20	--	--	--	--	50	O-O	Mainly water polluting. WP score is normalized to 100.

73.	21	Dry cell battery (exduding manufacturing of electrodes) and assembling & charging of acidlead battery on micro scale	30	--	30	15	--	15	10	55	O-O	Water and air polluting both.
74.	50	Pharmaceutical formulation and for R & D purpose (For sustained release/ extended release of drugs only and not for commercial purpose)	20	--	20	20	--	20	15	55	O-O	i. All sorts of pollution are generated. ii. R&D activities are to be shifted to Red category.
75.	78	Synthetic resins	20	-	20	20	-	20	15	55	R-O	All sorts of pollution are generated.
76.	79	Synthetic rubber excluding molding	20	-	20	20	-	20	15	55	R-O	i. Most synthetic rubber is created from two materials, styrene and butadiene. Both are currently obtained from petroleum. ii. Process is similar to a part of Petrochemical plants.
77.	9	Cashew nut processing	25	--	25	20	--	20	--	56	O-O	Normal water and air polluting.
78.	12	Coffee seed processing	25	--	25	20	--	20	--	56	O-O	Normal water & air polluting industry.
79.	57	Parboiled Rice Mills	25	-	25	20	-	20	-	56	R-O	i. Rice Mills are generating both air and water pollution. Waste-waters are having high strength in respect of BOD. ii. This is the normalized air & water pollution score for units having waste-water generation < 100 KLD and fuel consumption less than 12 MTD. iii. For units having waste-water generation > 100 KLD or fuel consumption > 12 MTD or both , the unit shall be classified as Red.

80.	29	Foam manufacturing	--	--	--	20	--	20	15	58	O-O	i. Raw material is polyurethane, latex etc. ii. Emissions of VOCs and HAPs. CH3Cl2 and similar compounds as blowing agents. iii. Outdated raw materials and spoiled slots are discarded as HW.
81.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Used Oil – As per specifications prescribed from time to time.	10	0	10	20	0	20	15	58.33	R-O	Mainly air polluting and hazardous waste generating industry. Air pollution & HW scores are normalized to 100
82.	34	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Waste Oil ---As per specifications prescribed from time to time.	-	-	-	20	0	20	15	58.33	R-O	Mainly air polluting and hazardous waste generating industry. Air pollution & HW scores are normalized to 100.
83.	56	Producer gas plant using conventional up drift coal gasification (linked to rolling mills glass and ceramic industry refectories for dedicated fuel supply)	--	--	--	20	--	20	15	58.33	O-O	Mainly air polluting & tar (HW) generating. SO2, CO, NOx are generated. Tar is the by-product and utilized by other industries in co-processing.

Note :

i. Under the column Revised Category, the full forms of the abbreviations are as follows :

a. R-R means original category was Red and revised category is also Red

b. R-O means original category was Red and revised category is Orange

c. O-O means original category was Orange and revised category is also Orange

d. O-G means original category was Orange and revised category is Green

e. O-W means original category was Orange and revised category is White

f. G-O means original category was Green and revised category is Orange

g. G-G means original category was Green and revised category is also Green

h. G-W means original category was Green and revised category is White

ii. *There are specific remarks in respect of some of the industrial sectors. These sectors are either merged with other relevant sectors or deleted due to duplication / vague category. The overall details are as follows:*

Sl No.	Original Sl No.	Industry Sector	Original Category	Remarks
1	24	Excavation of sand from the river bed (excluding manual excavation)	O	Since such types of activities cause ecological disturbances, the instructions issued by the government from time to time be followed. To be categorized by MoEF&CC.
2	39	Infrastructure Development Project	O	Vast variety of such projects come under such category. This is to be decided by the concerned SPCB in line of EIA Notification , 2006.
3	53	Power press	O	Very vague term hence deleted. Such types of general engineering units have already been covered.

Table G-4 : Final List of Green Category of Industrial Sectors

Sl. No.	Orgnl Sl. No.	**Industry Sector**	W1	W2	W	A1	A2	A	H	W+A+H	Revised Category	Remarks
1.	2	Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions from buffing operations.
2.	6	Ayurvedic and homeopathic medicines (without boiler)	10	--	10	--	--	--	--	25	**G-G**	Small quantities of waste-waters are generated from washing operations.
3.	8	Bakery /confectionery /sweets products (with production capacity <1tpd (with gas or electrical oven)	10	--	10	--	--	--	--	25	**G-G**	Small quantities of waste-waters are generated from washing operations.
4.	6	Bi-axially oriented PP film along with metalizing operations	10	--	10	--	--	--	--	25	**O-G**	Mainly extrusion process involving Cooling water recirculation
5.	10	Biomass briquettes (sun drying) without using toxic hazardous wastes	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions from pulverization / mixing operations.
6.	13	Blending of melamine resins & different powder, additives by physical mixing	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions from pulverization / mixing operations.
7.	15	Brass and bell metal utensils manufacturing from circles(dry mechanical operation without re-rolling facility)	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions from buffing operations.
8.	16	Candy	10	--	10	10	--	10	--	25	**G-G**	Small quantities of waste-water and minor

												PM emissions are generated.
9.	17	Cardboard or corrugated box and paper products (excluding paper or pulp manufacturing and without using boilers)	--	--	--	10	--	10	--	25	**G-G**	This score is valid with Small gas / electricity operated oven / furnace for making glue.
10.	18	Carpentry & wooden furniture manufacturing (excluding saw mill) with the help of electrical (motorized) machines such as electrical wood planner, steel saw cutting circular blade, etc.	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions from cutting operations.
11.	19	Cement products (without using asbestos / boiler / steam curing) like pipe ,pillar, jafri, well ring, block/tiles etc.(should be done in closed covered shed to control fugitive emissions)	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions from mixing operations.
12.	20	Ceramic colour manufacturing by mixing & blending only (not using boiler and wastewater recycling process)	--	--	--	10	--	10	--	25	**G-G**	Minor air pollution due to some fugitive PM emissions.
13.	11	Chilling plant, cold storage and ice making	10	--	10	--	--	--	--	25	**O-G**	Cooling water recirculation only.
14.	13	Coke briquetting (sun drying)	--	--	--	10	--	10	--	25	**O-G**	Mainly air polluting industry. Sources of air pollution (PM) are pulverizes and mixers. Air pollution score is normalized to 100.
15.	28	Cotton spinning and weaving (small scale)	--	--	--	10	--	10	--	25	**G-G**	Minor PM emissions from spinning process.
16.	17	Dal Mills	--	--	--	10	--	10	--	25	**O-G**	Some fugitive emissions of PM.

17.	29	Decoration of ceramic cups and plates by electric furnace	--	--	--	10	--	10	--	25	**G-G**	Fumes of enamels. Minor air pollution.
18.	19	Digital printing on PVC clothes	--	--	--	10	--	10	--	25	**O-G**	Minor emissions / odour generations are expected.
19.	25	Facility of handling, storage and transportation of food grains in bulk	--	--	--	10	--	10	--	25	**O-G**	Some fugitive emissions of PM during handling of grains.
20.	36	Flour mills (dry process)	--	--	--	10	--	10	--	25	**G-G**	Fugitive dust emissions.
21.	41	Glass , ceramic, earthen potteries, tile and tile manufacturing using electrical kiln or not involving fossil fuel kiln	--	--	--	10	--	10	--	25	**G-G**	Minor fugitive emissions only.
22.	34	Glue from starch (physical mixing) with gas / electrically operated oven /boiler.	--	--	--	10	--	10	--	25	**O-G**	Some fugitive emissions of PM during mixing of raw materials.
23.	42	Gold and silver smithy (purification with acid smelting operation and sulphuric acid polishing operation) (using less or equal to 1 litre of sulphuric acid/ nitric acid per month)	--	--	--	10	--	10	--	25	**G-G**	Minor fumes from cleaning process.
24.	36	Heat treatment with any of the new technology like ultrasound probe , induction hardening , ionization beam, gas carburizing etc.	10	--	10	10	--	10	--	25	**O-G**	• Cooling waters and minor heat fumes. • Finalization of categorization subject to field verification.
25.	46	Insulation and other coated papers (excluding paper or pipe manufacturing)	--	--	--	10	--	10	--	25	**G-G**	Minor fumes due to application of poly-urethane
26.	49	Leather foot wear and leather products (excluding tanning and hide processing except cottage scale)	--	--	--	10	--	10	--	25	**G-G**	Minor fumes due to use of adhesives / gums.

27.	50	Lubricating oil, greases or petroleum based products (only blending at normal temperature)	--	--	--	10	--	10	--	25	**G-G**	Minor fumes at the time of transfers from one container to other.
28.	54	Manufacturing of pasted veneers using gas fired boiler or thermic fluid heater and by sun drying	--	--	--	10	--	10	--	25	**G-G**	1. Minor fumes due to application of gums / adhesives / pastes etc. 2. This score is valid only for gas fired boiler.3. The units having coal fired boilers shall be categorized as Orange.
29.	59	Oil mill Ghani and extraction (no hydrogenation / refining)	10	--	10	--	--	--	--	25	**G-G**	Small quantities of floor washings & equipments washings are generated.
30.	48	Packing materials manufacturing from non asbestos fibre, vegetable fibre yarn	--	--	--	10	--	10	--	25	**O-G**	Some fugitive emissions of PM are expected.
31.	65	Phenyl/toilet cleaner formulation and bottling	--	--	--	10	--	10	--	25	**G-G**	Minor fumes of VOCs in the work zone
32.	67	Polythene and plastic processed products manufacturing (virgin plastic)	10	--	10	10	--	10	--	25	**G-G**	Cooling water & emissions due to mixing of raw materials.
33.	68	Poultry, Hatchery and Piggery	--	--	--	10	--	10	--	25	**G-G**	Obnoxious odour containing H_2S, CH_4 etc. and fugitive PM emissions
34.	69	Power looms (without dye and bleaching)	--	--	--	10	--	10	--	25	**G-G**	Minor emissions of PM.
35.	71	Puffed rice (muri) (using gas or electrical heating system)	--	--	--	10	--	10	--	25	**G-G**	Minor emissions of PM.
36.	57	Pulverization of bamboo and scrap wood	--	--	--	10	--	10	--	25	**O-G**	Some fugitive emissions of PM are expected.
37.	72	Ready mix cement concrete	--	--	--	10	--	10	--	25	**G-G**	PM emissions.
38.	73	Reprocessing of waste cotton	--	--	--	10	--	10	--	25	**G-G**	PM emissions.
39.	60	Rice mill (Rice hullers only)	--	--	--	10	--	10	--	25	**O-G**	PM emissions are generated. Mainly air

												polluting. AP score is normalized to 100
40.	62	Rolling mill (gas fired) and cold rolling mill	10	--	10	10	--	10	--	25	**O-G**	Mainly air polluting. AP score is normalized to 100
41.	75	Rubber goods industry (with gas operated baby boiler)	--	--	--	10	--	10	--	25	**G-G**	Some PM emissions and obnoxious odour.
42.	63	Saw mills	--	--	--	10	--	10	--	25	**O-G**	Mainly air polluting. PM and noise are generated.
43.	77	Soap manufacturing (hand made without steam boiling / boiler)	10	--	10	--	--	--	--	25	**G-G**	Small quantities of waste-water are generated.
44.	80	Spice grinding (upto-20 HP motor)	--	--	--	10	--	10	--	25	**G-G**	Small quantities of fugitive emissions of raw materials.
45.	66	Spice grinding (>20 hp motor)	--	--	--	10	--	10	--	25	**O-G**	Mainly air polluting. Fugitive emissions of PM.
46.	81	Steel furniture without spray painting	--	--	--	10	--	10	--	25	**G-G**	Obnoxious gases from welding as well as noise pollution.
47.	82	Steeping and processing of grains	10	--	10	--	--	--	--	25	**G-G**	Washing waters are generated.
48.	86	Tyres and tube retreating (without boilers)	--	--	--	10	--	10	--	25	**G-G**	Due to applications of binding gum / adhesives / cement, some obnoxious fumes may generate.
49.	22	Chilling plant and ice making without using ammonia	12	--	12	--	--	--	--	30	**G-G**	Cooling water and brine water circuits. Spillages / blow down may take place
50.	26	CO2 recovery	12	--	12	--	--	--	--	30	**G-G**	Normal water pollution from scrubbing action
51.	32	Distilled water (without boiler) with electricity as source of heat	12	--	12	--	--	--	--	30	**G-G**	TDS as distillation residues

52.	45	Hotels (up to 20 rooms and without boilers)	12	--	12	--	--	--	--	30	**G-G**	This score is valid for hotels having overall waste-water generation less than 10 KLD.
53.	53	Manufacturing of optical lenses (using electrical furnace)	12	--	12	--	--	--	--	30	**G-G**	Small quantities of waste-waters containing TDS, SS are generated.
54.	58	Mineralized water	12	--	12	--	--	--	--	30	**G-G**	RO Rejects.
55.	68	Tamarind powder manufacturing	12	--	12	15	--	15	--	33.75	O-G	• Dried tamarind fruits - cleaned and after soaking them in water they are boiled in steam jacketed kettle for about 40-45 minutes. Then pulp is extracted in pulper and dried in drum type drier and on cooling, the final product is packed. • Generates small quantities of waste waters and air emissions. Joint score is normalized to 100.
56.	15	Cutting, sizing and polishing of marble stone	15	--	15	--	--	--	--	37.5	O-G	Mainly water polluting . Water pollution score is normalized to 100.
57.	22	Emery powder (fine dust of sand) manufacturing	--	--	--	15	--	15	--	37.5	O-G	Air polluting. PM emissions take place during various stages of grindings of naturally occurring minerals.
58.	25	Flyash export, transport & disposal facilities	-	-	-	15	-	15	-	37.5	R-G	• This is mainly air polluting activity. • This is the normalized score based on air pollution.
59.	48	Mineral stack yard / Railway sidings	15	-	15	15	-	15	-	37.5	R-G	• Mainly air pollution due to loading, unloading, storage and transportation of the minerals.

												• Waste-water generation mainly during rains only.
60.	54	Oil and gas transportation pipeline	-	-	-	10	5	15	-	37.5	R-G	• Contains small gas based power plants up-to 5 MWs. • Air pollution score is normalized to 100. • In case , if these power plants are bigger / liquid fuel / oil based, scores will be calculated accordingly.
61.	64	Seasoning of wood in steam heated chamber	--	--	--	15	--	15	--	37.5	O-G	Air pollution due to use boiler for supply of steam. Air pollution score is normalized to 100.
62.	84	Synthetic detergent formulation	--	--	--	15	--	15	--	37.5	**G-G**	• This score is valid for the industries which are not manufacturing LABSA. It is procured from outside. • Small quantities of emissions are generated from mini boiler. • Air pollution score is normalized to 100.
63.	69	Tea processing (with boiler)	--	--	--	15	--	15	--	37.5	O-G	With boiler, it is an orange category industry. Without boiler, it will be green category industry.

Note :

i. *Under the column Revised Category, the full forms of the abbreviations are as follows :*
   a. *R-R means original category was Red and revised category is also Red*
   b. *R-O means original category was Red and revised category is Orange*
   c. *O-O means original category was Orange and revised category is also Orange*
   d. *O-G means original category was Orange and revised category is Green*
   e. *O-W means original category was Orange and revised category is White*
   f. *G-O means original category was Green and revised category is Orange*
   g. *G-G means original category was Green and revised category is also Green*
   h. *G-W means original category was Green and revised category is White*

ii. *There are specific remarks in respect of some of the industrial sectors. These sectors are either merged with other relevant sectors or deleted due to duplication. The overall details are as follows :*

Sl No.	Original Sl No.	Industry Sector	Original Category	Remarks
1	47	Jobbing and Machining	G	Vague category to be deleted, as such activities have already been covered in other categories.
2	66	Reel manufacturing	G	Already covered in other categories. Hence, deleted
3	1	Assembling of acid lead batteries (up to 10 batteries per day excluding lead plate casting)	G	Already covered in Orange category. Hence, deleted
4	5	Automobile fuel outlets (only dispensing)	G	Minor air pollution due to some fugitive emissions during fuel filling operations. May be exempted from the purview of Consent management.
5	30	Diesel generator sets (15 KVA to 1 MVA)	G	• Normal operation – 12 hrs a day. • Consumption of diesel = 1680 litres for 1 MVA DG set at full load @ 0.21 litres / KVA / hr. • Stand-alone DG Sets having total capacity 1 MVA or less and equipped with acoustic enclosures alongwith adequate stack height may be exempted from the purview of Consent management. Higher capacity DG sets have already been covered under Red / Orange categories .

Table G-5: Final List of White Category of Industries

Sl. No.	Orgnl Sl. No.	**Industry Sector**	W1	W2	W	A1	A2	A	H	W+A+H	Revised Category
1.	3	Assembly of air coolers /conditioners ,repairing and servicing	--	--	--	--	--	--	--	--	**G-W**
2.	4	Assembly of bicycles ,baby carriages and other small non motorizing vehicles	--	--	--	--	--	--	--	--	**G-W**
3.	7	Bailing (hydraulic press)of waste papers	--	--	--	--	--	--	--	--	**G-W**
4.	9	Bio fertilizer and bio-pesticides without using inorganic chemicals	--	--	--	--	--	--	--	--	**G-W**
5.	11	Biscuits trays etc from rolled PVC sheet (using automatic vacuum forming machines)	--	--	--	--	--	--	--	--	**G-W**
6.	12	Blending and packing of tea	--	--	--	--	--	--	--	--	**G-W**
7.	14	Block making of printing without foundry (excluding wooden block making)	--	--	--	--	--	--	--	--	**G-W**
8.	21	Chalk making from plaster of Paris (only casting without boilers etc. (sun drying / electrical oven)	--	--	--	--	--	--	--	--	**G-W**
9.	25	Compressed oxygen gas from crude liquid oxygen (without use of any solvents and by maintaining pressure & temperature only for separation of other gases)	--	--	--	--	--	--	--	--	**G-W**
10.	27	Cotton and woolen hosiers making (Dry process only without any dying / washing operation)	--	--	--	--	--	--	--	--	**G-W**
11.	31	Diesel pump repairing and servicing (complete mechanical dry process)	--	--	--	--	--	--	--	--	**G-W**
12.	33	Electric lamp (bulb) and CFL manufacturing by assembling only	--	--	--	--	--	--	--	--	**G-W**

13.	34	Electrical and electronic item assembling (completely dry process)	--	--	--	--	--	--	--	--	**G-W**
14.	23	Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)	--	--	--	--	--	--	--	--	**O-W**
15.	35	Flavoured betel nuts production/ grinding (completely dry mechanical operations)	--	--	--	--	--	--	--	--	**G-W**
16.	37	Fly ash bricks/ block manufacturing	--	--	--	--	--	--	--	--	**G-W**
17.	38	Fountain pen manufacturing by assembling only	--	--	--	--	--	--	--	--	**G-W**
18.	39	Glass ampules and vials making from glass tubes	--	--	--	--	--	--	--	--	**G-W**
19.	40	Glass putty and sealant (by mixing with machine only)	--	--	--	--	--	--	--	--	**G-W**
20.	43	Ground nut decorticating	--	--	--	--	--	--	--	--	**G-W**
21.	44	Handloom/ carpet weaving (without dying and bleaching operation)	--	--	--	--	--	--	--	--	**G-W**
22.	48	Leather cutting and stitching (more than 10 machine and using motor)	--	--	--	--	--	--	--	--	**G-W**
23.	51	Manufacturing of coir items from coconut husks	--	--	--	--	--	--	--	--	**G-W**
24.	52	Manufacturing of metal caps containers etc	--	--	--	--	--	--	--	--	**G-W**
25.	55	Manufacturing of shoe brush and wire brush	--	--	--	--	--	--	--	--	**G-W**
26.	57	Medical oxygen	--	--	--	--	--	--	--	--	**G-W**
27.	60	Organic and inorganic nutrients (by physical mixing)	--	--	--	--	--	--	--	--	**G-W**
28.	61	Organic manure (manual mixing)	--	--	--	--	--	--	--	--	**G-W**
29.	63	Packing of powdered milk	--	--	--	--	--	--	--	--	**G-W**
30.	64	Paper pins and u clips	--	--	--	--	--	--	--	--	**G-W**
31.	58	Repairing of electric motors and generators (dry mechanical process)	--	--	--	--	--	--	--	--	**O-W**
32.	74	Rope (plastic and cotton)	--	--	--	--	--	--	--	--	**G-W**

33.	76	Scientific and mathematical instrument manufacturing	--	--	--	--	--	--	--	--	**G-W**
34.	78	Solar module non conventional energy apparatus manufacturing unit	--	--	--	--	--	--	--	--	**G-W**
35.	79	Solar power generation through solar photovoltaic cell, wind power and mini hydel power (less than 25 MW)	--	--	--	--	--	--	--	--	**G-W**
36.	83	Surgical and medical products assembling only (not involving effluent / emission generating processes)	--	--	--	--	--	--	--	--	**G-W**

Note : Under the column Revised Category, the full forms of the abbreviations are as follows :

a. *R-R means original category was Red and revised category is also Red*
b. *R-O means original category was Red and revised category is Orange*
c. *O-O means original category was Orange and revised category is also Orange*
d. *O-G means original category was Orange and revised category is Green*
e. *O-W means original category was Orange and revised category is White*
f. *G-O means original category was Green and revised category is Orange*
g. *G-G means original category was Green and revised category is also Green*
h. *G-W means original category was Green and revised category is White*

Annexure

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
(पर्यावरण एवं वन मंत्रालय, भारत सरकार)
(MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

No. B-29012/ESS/CPA/2015-16

19.08.2015

Sub: "Harmonization of Classification of industries under Red / Orange / Green / White Categories".

During the Conference of the Environment Ministers of States held in New Delhi during April 06-07, 2015, it was resolved to adopt pollution potential criteria for categorization of Red, Orange & Green categories of industries and that a Committee be constituted with State representatives. Further, in the 59th Conference of Chairmen & Member Secretaries of Pollution Control Boards/PCCs held in New Delhi on April 08, 2015, it was agreed to constitute a Committee to look into categorization system of industries based on their respective pollution potential index.

2. Accordingly, a Committee comprising the Chairmen of CPCB, APPCB, TNPCB, MPPCB, MPCB, PPCB, WBPCB and MS, CPCB was constituted vide CPCB OM dated 23.04.2015 to review & classify industrial sectors into different categories based on criteria of respective pollution potential indices.

3. The existing Red (85 sectors) , Orange (73 sectors) and Green (86 sectors) industrial sectors have been assessed as per the proposed formula by a group of Scientists from CPCB . For this purpose , concerned Engineers / Scientists from the Member SPCBs of the Committee were also involved & consulted during May28-29, 2015.

4. After careful examination and consideration of the suggestions of concerned stake-holders the "Draft Document on Revised Concept of Categorization of Industrial Sectors " is prepared by the Committee .

In this context, the Undersigned is directed to forward a copy of the " Draft Document on Revised Concept of Categorization of Industrial Sectors to all the SPCBs, PCCs and concerned Ministries for their comments. Accordingly, the same is enclosed herewith and all the SPCBs, PCCs and concerned Ministries are, hereby requested to provide their comments by 04.09.2015. The comments may kindly be sent through hard copy as well as soft copy at e-mail: nkgupta.cpcb@nic.in , nkgcpcb@hotmail.com .

Encl : As above

[N.K. Gupta]
Incharge - ESS

To:

1. All the State Pollution Control Boards / Pollution Control Committees
2. The Secretary, Ministry of Micro Small and Medium Enterprises, New Delhi
3. The Secretary, Ministry of Heavy Industries & Public Enterprises, New Delhi
4. The Advisor & Incharge , CP Division, MoEFCC, New Delhi
5. CPCB Website

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केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT FOREST & CLIMATE CHANGE GOVT OF INDIA

CPCB/IPC-VI/ROGW/ 6519-6564 Date: 30.11.2023

To,

The Member Secretary
SPCBs/PCCs
(as per the list)

Sub: Harmonization of Classification of Industrial Sectors into Red, Orange, Green and White Categories, regarding Tyre Pyrolysis Oil (TPO) industries.

Sir,

This is with reference to the CPCB Directions issued u/s 18(1)(b) of the Air and Water Act on 07.03.2016, regarding 'Harmonization of classification of industrial sectors under Red/Orange/Green/White categories', wherein CPCB has categorized 242 industrial sectors into red, orange, green & white categories and directed all SPCBs/PCCs for its adoption and implementation.

Subsequently, CPCB has categorized the additional eleven industrial sectors, namely, (i) Scrapping Centre (ii) Used Cooking Oil Collection Centre (iii) Compressed/Refined Biogas (iv) Railway Stations, (v) Dairy Farms & (vi) Gaushalas, (vii) Building and Construction Projects, having built-up area up to 20,000 m² and waste water generation ≥ 50 KLD, (viii) Construction and Demolition (C&D) Waste Processing Plants, and (ix) Gold Assaying & Hallmarking Centres, (x) Semiconductor Manufacturing Industries, (xi) Sand/riverbed material mining from riverbed and its floodplains.

Now, CPCB Committee on categorization of industrial sectors, in its meeting held on 23.10.2023, categorized 'Tyre Pyrolysis Oil (TPO) industries, the details of which are given at **Annexure-I**.

All SPCBs/PCCs are directed to adopt and implement the categorization of Tyre Pyrolysis Oil (TPO) industries.

o/c

Yours faithfully,

(Bharat Kumar Sharma)
Member Secretary

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
निर्गत N Singh
दिनांक 01/12/2023

Encl.: as above.

Copy to:

1 The Additional Secretary (CP Division)
Ministry of Environment, Forests
& Climate Change,
Indira Paryavaran Bhawan,
Jor Bagh Road,
New Delhi -110 003

2 All Regional Directors,
CPCB
(as per list)

3 Div. Head, WM-III,
CPCB, Delhi

4 Div. Head-IT,
CPCB, Delhi : with a request to upload this letter on CPCB website

(Bharat Kumar Sharma)

Annexure-I

Categorization of Tyre Pyrolysis Oil (TPO) Industries

Sl. No.	Industrial Sector	W1	W2	W	A1	A2	A	H	PI	Category	Remarks
91	Tyre Pyrolysis Oil (TPO) industries- applicable for advance batch automated process/ continuous TPO units.	-	-	-	15	5	20	10	50	Orange	i. Air pollution potential is due to (i) combustion of fuels (wood, pyro-gas, pyro-oil, etc.) to heat pyrolysis chamber, (ii) fugitive emission of pyro-gases, (iii) release of excess pyro gases, (iv) fugitive emission from handling of carbon residue, and (v) odour nuisance. ii. As the sector is mainly air polluting and generates hazardous waste, scores are normalized to 100. iii. Units are required to follow Standard Operating Procedure (SOP) issued by CPCB/MoEF&CC for production of pyrolysis oil from waste tyres.

To:

Address List of Member Secretaries, SPCBs/PCCs			
1.	The Member Secretary Andhra Pradesh Pollution Control Board D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre, Chalamvari Street, Kasturibaipet, Vijayawada- 520007 (Andhra Pradesh)	2.	The Member Secretary Arunachal Pradesh State Pollution Control Board Paryavaran Bhawan, Yupia Road, Papu Nalah, Naharlagun – 791110 (Arunachal Pradesh)
3	The Member Secretary Assam Pollution Control Board Bamunimaidan, Guwahati – 781021 (Assam)	4	The Member Secretary Bihar State Pollution Control Board Parivesh Bhawan, Plot No.N-B/2, Patliputra Industrial Area Patna-800010 (Bihar)
5.	The Member Secretary Chhattisgarh Environment Conservation Board Paryavas Bhawan, North Block, Sector-19 Atal Nagar, Raipur– 492 002 (Chhattisgarh)	6.	The Member Secretary Goa State Pollution Control Board Nr. Pilerne Industrial Estate, Opp. Saligao Seminary, Saligao ,Bardez,- 403511(Goa)
7.	The Member Secretary Gujarat Pollution Control Board Paryavaran Bhavan, Sector-10A, Gandhinagar– 382043 (Gujarat)	8.	The Member Secretary Haryana State Pollution Control Board C-11, Sector 6, Panchkula- 134109 (Haryana)
9	The Member Secretary Himachal Pradesh State Pollution Control Board Paryavaran Bhavan, Phase III, New Shimla – 171009	10	The Member Secretary J&K State Pollution Control Board, Parivesh Bhawan, Forest Complex, Gladni, Narwal, Transport Nagar, Jammu- 180004 Jammu & Kashmir (J&K)
11.	The Member Secretary Jharkhand State Pollution Control Board T.A Building, HEC Campus, P.O. Dhurwa Ranchi – 834004 (Jharkhand)	12.	The Member Secretary Karnataka State Pollution Control Board Parisara Bhavan, #49, Church Street, Bengaluru –-560 001 (Karnataka)
13.	The Member Secretary Kerala State Pollution Control Board Plamoodu, Pattom P.O Thiruvananthapuram-695004 (Kerala)	14.	The Member Secretary Maharashtra Pollution Control Board Kalpataru Point, 3rd& 4th floor, Opp. PVR Cinema, Sion Circle (E), Mumbai- 400022 (Maharashtra)
15	The Member Secretary Manipur Pollution Control Board Lamphelpat, Imphal West D.C. Office Complex – 795004 (Manipur)	16	The Member Secretary Mizoram State Pollution Control Board New Secretariat Complex, Khatla, Thlanmual Peng, Aizwal Mizoram- 796001
17	The Member Secretary Meghalaya State Pollution Control Board Arden, Lumpyngngad, Shillong – 793014	18.	The Member Secretary Madhya Pradesh State Pollution Control Board Paryavaran Parisar, E-5 Arera Colony Bhopal – 462016

19.	The Member Secretary Nagaland State Pollution Control Board Signal Point, Dimapur, Nagaland – 797112	20	The Member Secretary Odisha State Pollution Control Board Paribesh Bhawan A-118, Nilakanta Nagar, Unit –VIII, Bhubaneshwar – 751012.
21	The Member Secretary Punjab State Pollution Control Board Nabha Road, ITI Rd, Adarsh Nagar, Prem Nagar,Patiala - 147001.	22	The Member Secretary Sikkim State Pollution Control Board Department of Forest, Environment & Wildlife Management Government of Sikkim, Deorali, Gangtok, -737102 (Sikkim)
23.	The Member Secretary Rajasthan State Pollution Control Board A-4 Institutional Area, Jhalane Dungri Jaipur – 302004. (Rajasthan)	24.	The Member Secretary Telangana State Pollution Control Board Paryavaran Bhavan A-3, Industrial Estate, Sanath Nagar, Hyderabad – 500 018 (Telangana)
25	The Member Secretary Tripura State Pollution Control Board Parivesh Bhawan Pt. Nehru Complex, Gorkhabasti P.O., Kunjaban, Agartala, Tripura - 799 006	26	The Member Secretary Tamil Nadu Pollution Control Board No. 76, Mount Salai, Guindy, Chennai – 600032 (Tamil Nadu)
27.	The Member Secretary Uttarakhand Pollution Control Board Gaura Devi Bhawan, 46 B IT Park Sahastradhara, Dehradun- 248001 Uttarakhand	28.	The Member Secretary Uttar Pradesh Pollution Control Board Building No. TC-12V Vibhuti Khand, Gomti Nagar, Lucknow– 226010. (Uttar Pradesh)
29.	The Member Secretary Andaman & Nicobar Islands Pollution Control Committee Department of Science & Technology Dollyganj Van Sadan, Haddo P.O., Port Blair-744102 (Andaman & Nicobar)	30	The Member Secretary Chandigarh Pollution Control Committee. ParyavaranBhawan Madhya Marg, Sector - 19 B, Chandigarh – 160019. Chandigarh
31.	The Member Secretary Delhi Pollution Control Committee 4th & 5th Floor, ISBT Building, Kashmere Gate, Delhi - 110006.	32.	The Member Secretary Daman, Diu & Dadra Nagar Haveli Pollution Control Committee 1st Floor, Udhyog Bhavan Bhenslore, Dunetha Nani Daman, Daman – 396210
33.	The Member Secretary Lakshadweep Pollution Control Committee Lakshadweep Administration Department of Science, Technology & Environment Kavarati – 682555. (Lakshadweep)	34.	The Member Secretary Puducherry Pollution Control Committee Department of Science, Technology & Environment 3rd Floor, Housing Board Complex, Anna Nagar, Nellithope, Puducherry – 605 005
35.	The Member Secretary West Bengal Pollution Control Board Paribesh Bhavan Canteen, 10A, Sector III, Bidhannagar, Kolkata- 700106 West Bengal		

Copy to:

Address list of Regional Directors, CPCB			
1.	The Regional Director (Kolkata) Central Pollution Control Board 502, Southend Conclave 1582, Rajdanga Main Road Kolkata-700107	2.	The Regional Director (Vadodara) Central Pollution Control Board Parivesh Bhawan, Opp. Ward No. 10 VMC Office Subhanpura, Vadodara – 390 023 Gujarat
3.	The Regional Director (Shillong) Central Pollution Control Board BSNL NE- 1, Telecom Circle CTO Building Ground Floor Shillong-793001	4.	The Regional Director (Bhopal) Central Pollution Control Board 3rd Floor, Sahkar Bhawan North T.T Nagar Bhopal- 462003
5.	The Regional Director (Lucknow) Central Pollution Control Board Ground Floor, PICUP Bhawan Vibhuti Khand, Gomti Nagar Lucknow- 226020	6.	The Regional Director (Bengaluru) Central Pollution Control Board 1st & 2nd Floors, Nisarga Bhawan A-Block, Thimmaiah Main Road 7th D Cross, Shivanagar Opposite Pushpanjali Theatre Bengaluru-560010
7.	The Regional Director (Chandigarh) Central Pollution Control Board BSNL Exchange, 2nd Floor Sector 49-C, Chandigarh-160047	8.	The Regional Director (Chennai) Central Pollution Control Board 77-A, Second Floor South Avenue Road, Ambattur Industrial Estate, Ambattur Taluk, Thiruvallur District, Chennai - 600 058
9.	The Regional Director (Pune) Central Pollution Control Board Row House No. 1, Nisarg Vihar, Near Mitcon International Public School, Balewadi, Pune-411045		

Re: Status of Compliance of order dated 07.11.2022 by the Hon'ble NGT, PB in OA no. 400/2019 titled as ' Social Action for Forest & Environment (SAFE) vs. Union of India

From : Vinod Singh <vinodsingh.77@gov.in> Wed, Jan 17, 2024 05:38 PM

Subject : Re: Status of Compliance of order dated 07.11.2022 by the Hon'ble NGT, PB in OA no. 400/2019 titled as ' Social Action for Forest & Environment (SAFE) vs. Union of India

To : Anand Kumar <anand.cpcb@nic.in>

Cc : Ved Prakash Mishra <mishra.vp@gov.in>, Aman Kohli <aman.kohli@govcontractor.in>

Sir,

I am directed to refer to the trailing email and to communicate that Rule 21 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 specifies the Responsibilities of authorities under Schedule VII. Wherein the responsibilities of CPCB has inter-alia been to (i) Prepare and update guidelines to prevent or minimise the generation and handling of hazardous and other wastes and (ii) Prepare and update guidelines/ Standard Operating Procedures (SoPs) for recycling, utilization, pre-processing, co-processing of hazardous and other wastes.

In view of the above, there is no need of any approval from the Ministry for the above SOP. However, the same was put up in file and has been seen by AS (HSMD).

with regards,

Dr. Vinod K. Singh
Scientist 'E'/Additional Director
Hazardous Substance Management Division,
Ministry of Environment, Forest and Climate Change,
Room No. J-232, Jal Wing, IInd Floor,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi - 3
Tel: 011-20819342

From: "Anand Kumar" <anand.cpcb@nic.in>
To: "Vinod Singh" <vinodsingh.77@gov.in>
Cc: "Ved Prakash Mishra" <mishra.vp@gov.in>
Sent: Wednesday, January 17, 2024 11:27:16 AM
Subject: Re: Status of Compliance of order dated 07.11.2022 by the Hon'ble NGT, PB in OA no. 400/2019 titled as ' Social Action for Forest & Environment (SAFE) vs. Union of India

Dear Sir
With reference to the trailing mail regarding compliance of the Hon'ble NGT Order dated 07-11-2022 and 07-11-2023 in the matter of OA no. 400/2019
for finalizing revised SOP, this is to inform that the existing SOP has been revised after conducting extensive study of seven (07) Tyre Pyrolysis Oil Units (TPO Units) comprising of three (03) advance batch automated tyre pyrolysis units, three (03) existing batch TPO units and one (01) continuous tyre pyrolysis unit under the guidance of expert committee comprising of experts from NEERI and IIT Delhi. Findings of study carried out by SPCB in 70 TPO units were also incorporated in the SOP. Further the revised SOP was presented before the expert committee comprising of experts from NEERI, IIT Delhi

and DH WM-III. The comments of the committee members were incorporated. The revised SOP placed in public domain for comments. The comments from stakeholders were also incorporated and the draft was sent to experts for comments. After incorporating the comments the revised SOP was approved by the Chairman, CPCB.

The revised SOP is attached for your ready reference and further action.

Thanks & Regards

Anand Kumar
Director &
Divisional Head, Waste Management III Division
Central Pollution Control Board
Parivesh Bhawan, East Arjun Nagar
Delhi - 32
E-Mail ID- anand.cpcb@nic.in
Mobile No. 9818255368

From: "Vinod Singh" <vinodsingh.77@gov.in>
To: "Anand Kumar" <anand.cpcb@nic.in>
Sent: Tuesday, January 16, 2024 12:51:18 PM
Subject: Fwd: Status of Compliance of order dated 07.11.2022 by the Hon'ble NGT, PB in OA no. 400/2019 titled as ' Social Action for Forest & Environment (SAFE) vs. Union of India

with regards,

Dr. Vinod K. Singh
Scientist 'E'/Additional Director
Hazardous Substance Management Division,
Ministry of Environment, Forest and Climate Change,
Room No. J-232, Jal Wing, IInd Floor,
Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi - 3
Tel: 011-20819342

From: "amankohli moef" <amankohli.moef@gmail.com>
To: "MS, CPCB" <mscb.cpcb@nic.in>
Cc: "Vinod Singh" <vinodsingh.77@gov.in>, "Ved Prakash Mishra" <mishra.vp@gov.in>
Sent: Monday, November 20, 2023 5:17:17 PM
Subject: Status of Compliance of order dated 07.11.2022 by the Hon'ble NGT, PB in OA no. 400/2019 titled as ' Social Action for Forest & Environment (SAFE) vs. Union of India

Dear Sir/Ma'am,
This refers to the OA no. 400/2019 which was disposed of vide order 7.11.2022 with instructions to CPCB & MoEF&CC for finalizing revised SOP.
This ministry vide letter to CPCB dated 05.12.2022 requested for necessary action in the matter.
An execution Application no. 39/2023 has been filed alleging non-compliance of order dated 7.11.2022.

Vide order dated 7.11.2023 NGT has issued notice in the above-mentioned EA no. 39/2023.

In view of the above, please find the letter dated 20.11.2023 and kindly do the needful.

--

Thanks & Regards,
Adv. Aman Kohli
Associate (Legal)

Ministry of Environment, Forest & Climate Change

Government of India