



HARYANA STATE POLLUTION CONTROL BOARD

C-11 Sector-6, Panchkula

Ph - 0172- 577870-73, Fax No. 2581201

E-mail- hspcbho@gmail.com

Office Order

Whereas Hon'ble National Green Tribunal (NGT) has issued the direction in several cases to impose the penalty on the non complying polluting units and has been directing CPCB, all SPCBs including Haryana to implement "Polluter Pays" Principal in right spirit and to recover environmental compensation from the polluting units and to use the same for restoration of environmental damages caused to the public;

Whereas, in the order of the Tribunal in *Pryavaran Surksha Samiti & Ors. Vs Union of India & Ors., Parveen Kakkar & Ors. Vs MoEF & Ors.* it was held that:

"11. Needless to say that it will be open to the SPCBs/Committees and CPCB to take coercive measure including recovery of compensation for the damage to the environment on 'Polluter Pays' principal as well as also to direct taking of such precautionary measures as may be....."

Whereas, in 63rd conference of Chairman and Member Secretary of PCBs/Committees held on 18.03.2019 it was decided that SPCBs/PCCs may frame their guidelines on environmental compensation based on CPCB's report circulated in the agenda of the said meeting and to provide their inputs on environmental compensation report if any in writing to CPCB, as per proceedings of the same circulated by CPCB vide letter no. B-12015/63/2019-AS-473 dated 10.04.2019;

Whereas, the matter was examined by Technical Advisory Committee (TAC) of the Board in its meeting held on 26.04.2019 wherein it was observed that the section 5 of Environment (Protection) Act, 1986, empowers the Ministry of Environment, Forest and Climate Change in Central Government, section 33-A of Water (Prevention and Control of Pollution) Act, 1974 and section 31-A of Air (Prevention and Control of Pollution) Act, 1981 empowers the State Pollution Control Boards to issue directions in writing to any person, officer or any other authority and such person, officer or authority shall be bound to comply with such directions which includes the power to direct --

- the closure, prohibition or regulation of any industry, operation or process; or
- stoppage or regulation of the supply of electricity or water or any other service.

Whereas, Central Government has already delegated the powers provided under section 5 of EPA, 1986 to the Haryana Government vide notification S.O. 152(E) dated 10.02.1988, which has also been delegated to the Chairmen of State Pollution Control Boards including the Chairman of HSPCB vide notification S.O. 23(E) dated 08.01.1997 for the violations of standards and rules relating to Hazardous Waste and vide notification no. S.O. 327(E) dated 10.04.2001 for the violations of standards and rules relating to Bio Medical Waste, Hazardous Chemicals, Industrial Solid Waste and Municipal Solid Waste including Plastic Waste; and,

Whereas, in the light of above and after detailed deliberation, the TAC recommended that the report of in-house committee of CPCB on methodology and guidelines for assessing the environmental compensation and utilization of the same, as provided in the agenda note of the above said 63rd conference of Chairman and Member Secretary of PCBs/Committees held on 18.03.2019, be adopted and accordingly the Board has decided to adopt the methodology given at **Annexure-1** for assessment, imposing, collection and utilization of environmental compensation from the polluting units in the State of Haryana;

Therefore, it is hereby ordered to adopt the said modalities/methodology for assessing, imposing and utilization of environmental compensation from the polluting units in the State of Haryana in the circumstances as mentioned.

These orders shall come into force with immediate effect.

Dated Panchkula, the

29th April, 2019

Endst. No. HSPCB/PLG/2019/

Ashok Kheterpal

Chairman

Dated:

A copy of the above is forwarded to the following for information please:-

- The Chief Secretary to Govt. Haryana, Chandigarh
- The Chairman, Central Pollution Control Board, East Arjun Nagar, New Delhi.
- The Additional Chief Secretary to Govt. Haryana, Department of Environment and Climate Change, Chandigarh.
- The Additional Chief Secretary to Govt. Haryana, Industries and Commerce Department, Chandigarh.
- The Additional Chief Secretary to Govt. Haryana, Public Health & Engineering Department, Chandigarh.
- The Principal Secretary to Govt. Haryana, Urban Local Bodies Department, Chandigarh.
- The Principal Secretary to Govt. Haryana, Irrigation Department, Chandigarh.
- The Principal Secretary to Govt. Haryana, Town and Country Planning Department, Chandigarh

Sr. Environmental Engineer-I (HQ)

For Chairman

Dated: 29-4-2019

Endst. No. HSPCB/PLG/2019/ 6073

A copy of the above is forwarded to the following for information and immediate necessary action:-

- All section Incharges in Head Office of the Board.
- All Regional officers of the Board in the field.
- Nodal Officer (IT) for uploading the order on the website of the Board.

Sr. Environmental Engineer-I (HQ)

For Chairman

Dated:

Endst. No. HSPCB/PLG/2019/

A copy of the above is forwarded to the following for information of the officers please:-

- P.S. to Chairman.
- P.A. to Member Secretary.

Sr. Environmental Engineer-I (HQ)

For Chairman

Methodology/modalities for assessing, imposing and utilization of environmental compensation from the polluting units in the State of Haryana**1. Cases for levying environmental compensation.**

- a) Units discharging the environmental pollutants in excess of the standards prescribed under EP Rules, 1986 and as prescribed in the consent granted to such units under Water Act, 1974/Air Act, 1981.
- b) Not complying with the directions issued, such as direction for closure due to non-installation of OCEMS, non-adherence to the action plans submitted etc.
- c) Intentional avoidance of data submission or data manipulation by tempering the Online Continuous Emission/ Effluent Monitoring system.
- d) Accidental discharges lasting for short durations resulting into damage to the environment.
- e) Intentional discharges to the environment including bypassing the pollution control devices -- land, water and air resulting into acute injury or damages to the environment.
- f) Injection of treated/partially treated/ untreated effluent to ground water.
- g) All violations of Graded Response Action Plan (GRAP) in Delhi NCR area.
- h) Failure of preventing the pollutants being discharged in water bodies and failure to implement Waste Management Rules.

2. Assessment and utilization of environmental compensation

- a) The assessment and utilization of environmental compensation funds will be done as per the methodology and guidelines provided by CPCB in the agenda note of the above said 63rd conference of Chairman and Member Secretary of PCBs/Committees held on 18.03.2019, copy of which is attached as **Annexure-A**.
- b) The assessment of the environmental compensation will be done by the concerned Regional Office or District Level Task Force constituted by the State as per the direction of Hon'ble NGT and detailed report in this regard will be submitted by Regional Office to Head Office within 15 days from the date of identification of violations.
- c) The environmental compensation assessment report submitted by Regional Office will be examined and finalized at Head Office level by a committee of officers headed by Member Secretary, consisting of Sr. Environmental Engineer-I (HQ), Sr. Scientist (HQ), District Attorney (HQ), Sr. Accounts Officer and concerned Branch Incharge in Head Office within 07 days from date of receipt of the said report in Head Office.
- d) The finalized report will be processed by the concerned branch incharge in Head Office to the authorities for final order for levy of the environmental compensation on the defaulting unit.
- e) The authority for issuing the direction for levy and deposition of environmental compensation will be the same as prescribed for issuing the direction under section 5 of Environment (Protection) Act, 1986, section 33-A of Water (Prevention & Control of Pollution) Act, 1974, section 31-A of Air (Prevention & Control of Pollution) Act, 1981.
- f) In case of failure of deposition of environmental compensation by the violator within 15 days of issue of the direction, legal action under the provisions of the relevant Acts under which direction issued, will be taken.
- g) A separate account for environmental compensation fund will be maintained by the Accounts Branch.
- h) The environmental compensation fund will be utilized for restoration of environmental damages caused in area of violation as per methodology/guidelines prescribed by CPCB in its report provided the agenda note of the above said 63rd conference of Chairman and Member Secretary of PCBs/Committees held on 18.03.2019.



**Report of the CPCB In-house Committee on
Methodology for Assessing Environmental
Compensation and Action Plan to Utilize the Fund**



CENTRAL POLLUTION CONTROL BOARD
"Parivesh Bhawan", East Arjun Nagar,
Delhi-110032

Table of Contents

Chapter-I: Environment Compensation to be levied on Industrial Units	3
1.1 Background	3
1.2 Constitution of the Committee	3
1.3 Methodology for Assessing Environmental Compensation	3
1.4 Action Plan for Utilization of Environmental Compensation Fund.....	6
Chapter-II: Environmental Compensation to be levied on all violations of Graded Response Action Plan (GRAP) in Delhi-NCR.	9
2.1 Amount for Environmental Compensation.....	9
2.2 Action Plan for Utilization of Environmental Compensation Fund.....	9
Chapter-III: Environmental Compensation to be levied in case of failure of preventing the pollutants being discharged in water bodies and failure to implement waste management rules. 10	
3.1 Background	10
3.2 Ideology of Environmental Compensation Formula.....	10
3.3 Environment Compensation for Discharge of Untreated/Partially Treated Sewage by Concerned Individual/Authority:	12
3.4 Environment Compensation to be Levied on Concerned Individual/Authority for Improper Solid Waste Management:.....	15
3.3 Action Plan for Utilization of Environmental Compensation Fund.....	16
3.4 Recommendations.....	16
Annexure-I.....	17
Annexure-II.....	23
Annexure-III.....	26
Annexure-IV	28
References.....	30

Abstract

Environmental compensation is a policy instrument for the protection of the environment which works on the Polluter Pay Principal. Environmental compensation has already been implemented in various countries, although limited in scope. Experiences from these implementations are mixed and tend to stress the importance of certain principles in order to achieve the overall objective of protection of the environment.

The Hon'ble National Green Tribunal through its various judgments has empowered the Central Pollution Control Board to lay down the methodology to assess and recover compensation for damage to the environment and utilize such amount in terms of an action plan for protection of the environment.

An attempt has been made by the CPCB in-house Committee to develop a methodology for assessing environmental compensation to be levied on concerned industry, authority, individual etc. for the protection of environment. Expert institutions/ NGOs like The Energy and Resources Institute, Centre for Science and Environment-India, Institute of Economic Growth etc. were also consulted to finalize the report. Overall objective is to develop self-sense of responsibility towards the environment and to make defaulters realize their mistake by imposing compensation, which will be utilized for the protection/restoration of the environment.

Although, this is the first attempt in India towards development of methodology for assessing environmental compensation, however, efforts have been made to simplifying the process so that regulatory institutions can easily adopt the methodology for implementation.

Chapter-I: Environment Compensation to be levied on Industrial Units

1.1 Background

The Hon'ble National Green Tribunal (NGT), Principal Bench in the matter of OA No. 593/2017 (WP (CIVIL) No. 375/2012, Paryavaran Suraksha Samiti & Anr. Vs. Union of India & Ors. directed Central Pollution Control Board (CPCB) that:

"The CPCB may take penal action for failure, if any, against those accountable for setting up and maintaining STPs, CETPs and ETPs. CPCB may also assess and recover compensation for damage to the environment and said fund may be kept in a separate account and utilized in terms of an action plan for protection of the environment. Such action plan may be prepared by the CPCB within three months" (Annexure-I).

1.2 Constitution of the Committee

In this context, Chairman, CPCB constituted a Committee under the Chairmanship of Shri A. Sudhakar, I/c WQM-I with Shri A. K. Vidyarthi, I/c WQM-II, Shri P. K. Gupta, I/c IPC-VI, Shri Nazimuddin I/c IPC-II and Dr. S. K. Paliwal, Scientist 'D' as members. The Committee was asked to deliberate on this issue and come up with a draft formulation before 15.9.2018.

1.3 Methodology for Assessing Environmental Compensation

The Committee discussed the issue on 4.9.2018, 13.9.2018, 17.9.2018 and 09.10.2018. A meeting was also held with Senior Officers of CPCB Head Office and Regional Directorates through video conferencing on 28.09.2018 to discuss the draft report and to seek comments/feedbacks. The comments/feedbacks received and deliberations of the Committee on the same are given in Annexure-II.

As per the Hon'ble NGT suggestion, CPCB has invited comments of 3 expert institution, namely, Centre for Science and Environment (CSE), Institute of Economic Growth (IEG) and The Energy Research Institute (TERI). CSE and IEG has provided their comments, however TERI has not provided any response.

A meeting to incorporate the comments of the expert institutions and to finalize the report, was held on 12/03/2019 under the chairmanship of Shri A. Sudhakar. The CPCB in-house committee on Environmental Compensation has deliberated on the comments and finalized the report accordingly. The Committee's deliberations are attached as Annexure-III.

It was deliberated for developing a formula for imposing environmental compensation on industrial units for violation of directions issued by regulatory bodies and this is the first attempt made. The committee discussed that environmental compensation should be based on "Polluter Pay Principle". The Committee decided to list the instances for taking cognizance of cases fit for violation and levy environmental compensation.

Cases considered for levying Environmental Compensation (EC):

- a) Discharges in violation of consent conditions, mainly prescribed standards / consent limits.
- b) Not complying with the directions issued, such as direction for closure due to non-installation of OCEMS, non-adherence to the action plans submitted etc.
- c) Intentional avoidance of data submission or data manipulation by tampering the Online Continuous Emission / Effluent Monitoring systems.
- d) Accidental discharges lasting for short durations resulting into damage to the environment.
- e) Intentional discharges to the environment -- land, water and air resulting into acute injury or damage to the environment.
- f) Injection of treated/partially treated/ untreated effluents to ground water.

1.3.1 In the instances as mentioned at *a, b and c* above, Pollution Index may be used as a basis to levy the Environmental Compensation. CPCB has published guidelines for categorization of industries into Red, Orange, Green and White based on concept of Pollution Index (PI). The Pollution Index is arrived after considering quantity & quality of emissions/ effluents generated, types of hazardous wastes generated and consumption of resources. Pollution Index of an industrial sector is a numerical number in the range of 0 to 100 and can be represented as follows:

$$PI = f(\text{Water Pollution Score, Air Pollution Score \& HW Generation Score})$$

Pollution Index is a number from 0 to 100 and increasing value of PI denotes the increasing degree of pollution *hazard from the industrial sector.*

CPCB has issued directions to all SPCBs/PCCs on 07.03.2016 to adopt the methodology and follow guidelines prepared by CPCB for categorization of industrial sectors into Red, Orange, Green and White.

The concept of Pollution Index, which was deliberated widely with all stakeholders and agreed, shall be used for calculating Environmental Compensation. This may help in implementation of such provision throughout the country, a successful initiative in vital field of industrial pollution control.

After considering various factors including the policy implementation issues, Committee has come up with following formula for levying the Environmental Compensation in instances as

mentioned at a, b and c including non-compliance of the environmental standards / violation of directions.

The Environmental Compensation shall be based on the following formula:

$$EC = PI \times N \times R \times S \times LF$$

Where,

- EC is Environmental Compensation in ₹
- PI = Pollution Index of industrial sector
- N = Number of days of violation took place
- R = A factor in Rupees (₹) for EC
- S = Factor for scale of operation
- LF = Location factor

The formula incorporates the anticipated severity of environmental pollution in terms of Pollution Index, duration of violation in terms of number of days, scale of operation in terms of micro & small/medium/large industry and location in terms of proximity to the large habitations.

Note:

- a. The industrial sectors have been categorized into Red, Orange and Green, based on their Pollution Index in the range of 60 to 100, 41 to 59 and 21 to 40, respectively. It was suggested that the average pollution index of 80, 50 and 30 may be taken for calculating the Environmental Compensation for Red, Orange and Green categories of industries, respectively.
- b. N, number of days for which violation took place is the period between the day of violation observed/due date of direction's compliance and the day of compliance verified by CPCB/SPCB/PCC.
- c. R is a factor in Rupees, which may be a minimum of 100 and maximum of 500. It is suggested to consider R as 250, as the Environmental Compensation in cases of violation.
- d. S could be based on small/medium/large industry categorization, which may be 0.5 for micro or small, 1.0 for medium and 1.5 for large units.
- e. LF, could be based on population of the city/town and location of the industrial unit. For the industrial unit located within municipal boundary or up to 10 km distance from the municipal boundary of the city/town, following factors (LF) may be used:

Table No. 1.1: Location Factor Values

S. No.	Population* (million)	Location Factor# (LF)
1	1 to <5	1.25
2	5 to <10	1.5
3	10 and above	2.0

**Population of the city/town as per the latest Census of India*

#LF will be 1.0 in case unit is located >10km from municipal boundary

LF is presumed as 1 for city/town having population less than one million.

For notified Ecologically Sensitive areas, for beginning, LF may be assumed as 2.0. However, for critically Polluted Areas, LF may be explored in future.

- f. In any case, minimum Environmental Compensation shall be ₹ 5000/day.
- g. In order to include deterrent effect for repeated violations, EC may be increased on exponential basis, i.e. by 2, 4, 8, 16.... times on each similar violation.

A sample calculation for Environmental Compensation is given at Table No. 1.2. It can be noticed that for all instances, EC for Red, Orange and Green category of industries varies from 3,750 to 60,000 ₹/day.

Table No. 1.2: A sample calculation for Environmental Compensation

Industrial Category	Red	Orange	Green
Pollution Index (PI)	60-100	41-59	21-40
Average PI	80	50	30
R-Factor	250		
S-Factor	0.5-1.5		
L-Factor	1.00-2.00		
Deterrent Factor	on exponential basis, i.e. by 2, 4, 8; 16.... times		
Environmental Compensation (₹/day)	10,000-60,000	6,250-37,500	5,000-22,500

1.3.2 In other instances i.e. *d, e and f*, the environmental compensation may contain two parts – one requires providing immediate relief and other long-term measures such as remediation. In all these cases, detailed investigations are required from expert institutions/organizations based on which environmental compensation will be decided. CPCB shall list the expert institutions for this purpose.

In such cases, comprehensive plan for remediation of environmental pollution may be prepared and executed under the supervision of a committee with representatives of SPCB, CPCB and expert institutions/organizations.

1.4 Action Plan for Utilization of Environmental Compensation Fund

The Committee discussed about the utilization of funds, which will be received by imposing Environmental Compensation. The following Action Plan is proposed to utilize the fund for protection of the environment.

1.4.1. When Environmental Compensation is calculated through the Pollution Index:

The amount received by imposing the Environmental Compensation to the industries / organization non-complying with the environmental standards / violating any CPCB's directions shall be deposited in a separate bank account. The amount accumulated will be utilized for Protection of Environment. The following schemes were identified, which may be considered for utilization of Environmental Compensation Fund:

- a. Industrial Inspections for compliance verification
- b. Installation of Continuous water quality monitoring stations / Continuous ambient air quality monitoring stations for strengthening of existing monitoring network
- c. Preparation of Comprehensive Industry Documents on Industrial Sectors / clean technology
- d. Investigations of environmental damages, preparation of DPRs
- e. Remediation of contaminated sites
- f. Infrastructure augmentation of Urban Local Bodies (ULBs) /capacity building of SPCBs/PCCs

The above proposed list may include other schemes also, depending upon the requirement.

Considering the availability of accumulated funds, CPCB will finalize the scheme, keeping in mind the priority, to utilize the funds of Environmental Compensation.

1.4.2. When Environmental Compensation is assessed based on actual damage to the environment by Expert Organization/ Agency:

The amount of Environmental Compensation under this case will be remediation costs, measures requiring immediate and short-term actions, compensation towards loss of ecology, etc., and will be utilized exclusively for the purpose at specific site, based on the detailed investigations by the Expert Organizations/ agencies.

1.5 Recommendations

The Committee made following recommendations:

- 1.5.1 To begin with, Environmental Compensation may be levied by CPCB only when CPCB has issued the directions under the Environment (Protection) Act, 1986. In case of a, b and c, Environmental Compensation may be calculated based on the formula "EC = PI x N x R x S x LF", wherein, PI may be taken as 80, 50 and 30 for red, orange and green category of industries, respectively,

and R may be taken as 250. S and LF may be taken as prescribed in the preceding paragraphs.

1.5.2 In case of d, e and f, the Environmental Compensation may be levied based on the detailed investigations by Expert Institutions/Organizations.

Chapter-II: Environmental Compensation to be levied on all violations of Graded Response Action Plan (GRAP) in Delhi-NCR.

2.1 Amount for Environmental Compensation

The CPCB In-house Committee also discussed that the EC shall also be levied on all violations of Graded Response Action Plan (GRAP) in Delhi NCR. The implementing agencies for each activity have been identified and the EC will be levied on these agencies. These violations attract graded amounts of EC depending on the state of ambient air quality, which is given in table below:

Table No. 2.1: Environmental Compensation to be levied on all violations of Graded Response Action Plan (GRAP) in Delhi-NCR.

Activity	State Of Air Quality	Environmental Compensation (₹)
Industrial Emissions	Severe +/-Emergency	Rs 1.0 Crore
	Severe	Rs 50 Lakh
	Very Poor	Rs 25 Lakh
	Moderate to Poor	Rs 10 Lakh
Vapour Recovery System (VRS) at Outlets of Oil Companies		
i. Not installed	Target Date	Rs 1.0 Crore
ii. Non-functional	Very poor to Severe +	Rs 50.0 Lakh
	Moderate to Poor	Rs 25.0 Lakh
Construction sites (Offending plot more than 20,000 Sq.m.)	Severe +/-Emergency	Rs 1.0 Crore
	Severe	Rs 50 Lakh
	Very Poor	Rs 25 Lakh
	Moderate to Poor	Rs 10 Lakh
Solid waste/ garbage dumping in Industrial Estates	Very poor to Severe +	Rs 25.0 Lakh
	Moderate to Poor	Rs 10.0 Lakh
Failure to water sprinkling on unpaved roads		
a) Hot-spots	Very poor to Severe +	Rs 25.0 Lakh
b) Other than Hot-spots	Very poor to Severe +	Rs 10.0 Lakh

2.2 Action Plan for Utilization of Environmental Compensation Fund

EC levied on all violations of Graded Response Action Plan (GRAP) in Delhi NCR will be deposited in the same fund and will be utilized in the same manner as mentioned in para 1.4.1 of Chapter-I of this report.

Chapter-III: Environmental Compensation to be levied in case of failure of preventing the pollutants being discharged in water bodies and failure to implement waste management rules

3.1 Background

The Hon'ble NGT in its order dated 06.12.2018 (Annexure-III) in the matter of Court of its own motion v/s State of Karnataka (Original Application No. 125/2017 and M.A. No. 1337/2018) has given following directions:

"Since failure of preventing the pollutants being discharged in water bodies (including lakes) and failure to implement solid and other waste management rules are too frequent and widespread, the CPCB must lay down specific guidelines to deal with the same, throughout India, including the scale of compensation to be recovered from different individuals/authorities, in addition to or as alternative to prosecution. The scale may have slabs, depending on extent of pollution caused, economic viability, etc. Deterrent effect for repeated wrongs may also be provided."

3.2 Ideology of Environmental Compensation Formula

In compliance of the directions of the Hon'ble Tribunal, the Committee deliberated on the issue of environmental compensation to be recovered from individuals/authorities in case of failure of preventing the pollutants being discharged in water bodies and failure to implement solid and other waste management rules. The Committee has suggested that environmental compensation in these cases should be comprised of two components i.e.

1. Cost saved/benefits achieved by the concerned individual/authority by not having proper waste/sewage management system; and
2. Cost to the environment (environmental externality) due to untreated/partially treated waste/sewage because of insufficient capacity of waste/sewage management/treatment facility.

Cost saved/benefits achieved by not having proper waste/sewage management system includes the interest on capital cost of the waste/sewage management facility and daily operation and maintenance (O&M) cost associated with the facility.

The Committee suggested that annual interest rate as 10% on loan amount, borrowed by concerned individual/authority for setting-up waste/sewage management facility, may be assumed as Capital Cost Factor for calculation of environment compensation. Further, as whole O&M cost is saved by concerned individual/authority for not managing required waste/sewage management system, 100% of the O&M cost saved may be considered as O&M cost factor.

Therefore, generalized formula for Environmental Compensation may be described as:

$EC = \text{Capital Cost Factor} \times \text{Marginal Average Capital Cost for Establishment of Waste or Sewage Management or Treatment Facility} \times (\text{Waste or Sewage Management or Treatment Capacity Gap})$
--

+ O&M Cost Factor x Marginal Average O&M Cost x (Waste or Sewage Management or Treatment Capacity Gap) x No. of Days for which facility was not available + Environmental Externality

Cost to the environment due to untreated/partially treated waste/sewage discharge by concerned individual/authority may be assumed as recommended by the committee, which is mentioned below:

Table No. 3.1: Environmental externality for untreated/partially treated sewage discharge

Sewage Treatment Capacity Gap (MLD)	Marginal Cost of Environmental Externality (Rs. per MLD/day)	Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. Per Day)
Up to 200	75	Min. 0.05 Max. 0.10
201-500	85	Min. 0.25 Max. 0.35
501 and above	90	Min. 0.60 Max. 0.80

Table No. 3.2: Environmental externality for improper municipal solid waste management

Municipal Solid Waste Management Capacity Gap (TPD)	Marginal Cost of Environmental Externality (Rs. per ton per day)	Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. Per Day)
Up to 200	15	Min. 0.01 Max. 0.05
201-500	30	Min. 0.10 Max. 0.15
501-1000	35	Min. 0.25 Max. 0.35
1001-2000	40	Min. 0.50 Max. 0.60
Above 2000		Max. 0.80

The Committee further decided to fix a cap for minimum and maximum cost for capital and O&M component for Environmental Compensation, which are given in below tables:

Table No. 3.3: Minimum and Maximum EC to be levied for untreated/partially treated sewage discharge

Class of the City/Town	Mega-City	Million-plus City	Class-I City/Town and others
Minimum and Maximum values of EC (Total Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 2000 Max. 20000	Min. 1000 Max. 10000	Min. 100 Max. 1000

Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 2 Max. 20	Min. 1 Max. 10	Min. 0.5 Max. 5
---	-------------------	-------------------	--------------------

Table No. 3.4: Minimum and Maximum EC to be levied for improper municipal solid waste management

Class of the City/Town	Mega-City	Million-plus City	Class-I City/Town and others
Minimum and Maximum values of EC (Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 1000 Max. 10000	Min. 500 Max. 5000	Min. 100 Max. 1000
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 1.0 Max. 10.0	Min. 0.5 Max. 5.0	Min. 0.1 Max. 1.0

The application of formula for calculation of EC may be further understood with the example of two typical cases.

3.3 Environment Compensation for Discharge of Untreated/Partially Treated Sewage by Concerned Individual/Authority:

BIS IS-1172:1993 suggests that for communities with population above 100,000, minimum of 150 to 200 lpcd of water demand is to be supplied. Further, 85% of return rate (CPHEEO Manual on Sewerage and Sewage Treatment Systems, 2013), may be considered for calculation of total sewage generation in a city. CPCB Report on "Performance evaluation of sewage treatment plants under NRCD, 2013", describes that the capital cost for 1 MLD STP ranges from 0.63 Cr. to 3 Cr. and O&M cost is around Rs. 30,000 per month. After detail deliberations, the Committee suggested to assume capital cost for STPs as Rs. 1.75 Cr/MLD (marginal average cost). Further, expected cost for conveyance system is assumed as Rs. 5.55 Cr./MLD (marginal average cost) and annual O&M cost as 10% of the combined capital cost. Population of the city may be taken as per the latest Census of India. Based on these assumptions, Environmental Compensation to be levied on concerned ULB may be calculated with the following formula:

EC = Capital Cost Factor x [Marginal Average Capital Cost for Treatment Facility x (Total Generation-Installed Capacity) + Marginal Average Capital Cost for Conveyance Facility x (Total Generation -Operational Capacity)] + O&M Cost Factor x Marginal Average O&M Cost x (Total Generation- Operational Capacity) x No. of Days for which facility was not available + Environmental Externality x No. of Days for which facility was not available

Alternatively;

EC (Lacs Rs.) = [17.5(Total Sewage Generation – Installed Treatment Capacity) + 55.5(Total Sewage Generation-Operational Capacity)] + 0.2(Sewage Generation-Operational

Capacity) x N + Marginal Cost of Environmental Externality x (Total Sewage Generation-
Operational Capacity) x N

Where;

N= Number of days from the date of direction of CPCB/SPCB/PCC till the required capacity systems are provided by the concerned authority

Note: In order to include deterrent effect for continuous violations, component of O&M in EC formula may be increased on exponential basis by 2, 4, 8, 16.... times on every six-months, beyond the time prescribed by authority for ensuring complete treatment of sewage of the city/town.

Table No. 3.5: Sample calculation for EC to be levied for discharge of untreated/partial treated Sewage

City	Delhi	Agra	Gurugram	Ambala
Population (2011)	1,63,49,831	17,60,285	8,76,969	5,00,774
Class	Mega-City	Million-plus City	Class-I Town	Class-I Town
Sewage Generation (MLD) (as per the latest data available with CPCB)	4195	381	486	37
Installed Treatment Capacity (MLD) (as per the latest data available with CPCB)	2500	220	404	45.5
Operational Capacity (MLD) (as per the latest data available with CPCB)	1900	140	300	24.5
Treatment Capacity Gap (MLD)	2295	241	186	12.5
Calculated EC (capital cost component for STPs) in Lacs Rs.	29662.50	2817.50	1435.00	0.00
Calculated EC (capital cost component for Conveyance System) in Lacs. Rs.	127372.50	13375.50	10323.00	693.75
Calculated EC (Total capital cost component) in Lacs Rs.	157035.00	16193.00	11758.00	693.75
Minimum and Maximum values of EC (Total Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 2000 Max. 20000	Min. 1000 Max. 10000	Min. 100 Max. 1000	Min. 100 Max. 1000
Final EC (Total Capital Cost Component) in Lacs Rs.	20000.00	10000.00	1000.00	693.75
Calculated EC (O&M Component in Lacs Rs./day)	459.00	48.20	37.20	2.50
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./day)	Min. 2 Max. 20	Min. 1 Max. 10	Min. 0.5 Max. 5	Min. 0.5 Max. 5
Final EC (O&M Component) in Lacs Rs./Day	20.00	10.00	5.00	2.50
Calculated Environmental Externality (Lacs Rs .Per Day)	2.0655	0.2049	0.1395	0.0094
Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. Per Day)	Min. 0.60 Max. 0.80	Min. 0.25 Max. 0.35	Min. 0.05 Max. 0.10	Min. 0.05 Max. 0.10
Final Environmental Externality (Lacs Rs. Per day)	0.80	0.25	0.10	0.05

3.4 Environment Compensation to be Levied on Concerned Individual/Authority for Improper Solid Waste Management:

It is known that estimated MSW generation is approximately 1.5 lakh MT/Day in India (MoHUA Report-2016). As per the principles of SWM Rules, 2016 and PWM Rules 2016, as amended in 2018, the total cost of Municipal Solid Waste management in a city/town includes cost for door to door collection, cost of segregation at source, cost for transportation in segregated manner, cost for processing of MSW and disposal through facility like composting, biomethanation, recycling, co-processing in cement kilns etc.

In view of above, it is estimated that the total cost of processing and treatment of MSW for a city having population size of 1 lakh and generating approximately 50 tons/day of MSW is Rs.15.5 Crores, including capital cost (one time) and O & M cost for one year. The expenditure for subsequent years would be only Rs. 3.5 crores/annum.

CPCB sponsored a survey to ascertain the status of municipal solid waste disposal in 59 cities/towns of India. The survey was conducted by the Environment Protection Training Research Institute (EPTRI), Hyderabad. As per the survey, it is estimated that solid waste generated in small, medium and large cities and towns is about 0.1 kg (Class-III), 0.3-0.4 kg (Class-II) and 0.5 kg (Class-I) per capita per day respectively. The committee opined that 0.6 kg/day, 0.4 kg/day and 0.3 kg/day per capita waste generation may be assumed for mega-cities, million-plus UAs/towns and Class-I UA/Towns respectively for calculation of environmental compensation purposes. Based on these assumptions, Environmental Compensation to be levied on concerned ULB may be calculated with the following formula:

$$EC = \text{Capital Cost Factor} \times \text{Marginal Average Cost for Waste Management} \times (\text{Per day waste generation} - \text{Per day waste disposed as per the Rules}) + \text{O\&M Cost Factor} \times \text{Marginal Average O\&M Cost} \times (\text{Per day waste generation} - \text{Per day waste disposed as per the Rules}) \times \text{Number of days violation took place} + \text{Environmental Externality} \times N$$

Where;

Waste Quantity in tons per day (TPD)

N= Number of days from the date of direction of CPCB/SPCB/PCC till the required capacity systems are provided by the concerned authority

Simplifying;

$$EC \text{ (Lacs Rs.)} = 2.4(\text{Waste Generation} - \text{Waste Disposed as per the Rules}) + 0.02 (\text{Waste Generation} - \text{Waste Disposed as per the Rules}) \times N + \text{Marginal Cost of Environmental Externality} \times (\text{Waste Generation} - \text{Waste Disposed as per the Rules}) \times N$$

Table No. 3.6: Sample calculation for EC to be levied for improper management of Municipal Solid Waste

City	Delhi	Agra	Gurugram	Ambala
Population (2011)	1,63,49,831	17,60,285	8,76,969	5,00,774
Class	Mega-City	Million-plus City	Class-I Town	Class-I Town
Waste Generation (kg. per person per day)	0.6	0.4	0.3	0.3
Waste Generation (TPD)	9809.90	704.11	263.09	150.23
Waste Disposal as per Rules (TPD) (assumed as 25% of waste generation for sample calculation)	2452.47	176.03	65.77	37.56
Waste Management Capacity Gap (TPD)	7357.42	528.09	197.32	112.67
Calculated EC (capital cost component) in Lacs. Rs.	17657.82	1267.41	473.56	270.42
Minimum and Maximum values of EC (Capital Cost Component) recommended by the Committee (Lacs Rs.)	Min. 1000 Max. 10000	Min. 500 Max. 5000	Min. 100 Max. 1000	Min. 100 Max. 1000
Final EC (capital cost component) in Lacs. Rs.	10000.00	1267.41	473.56	270.42
Calculated EC (O&M Component) in Lacs. Rs./Day	147.15	10.56	3.95	2.25
Minimum and Maximum values of EC (O&M Cost Component) recommended by the Committee (Lacs Rs./Day)	Min. 1.0 Max. 10.0	Min. 0.5 Max. 5.0	Min. 0.1 Max. 1.0	Min. 0.1 Max. 1.0
Final EC (O&M Component) in Lacs. Rs./Day	10.00	5.00	1.00	1.00
Calculated Environmental Externality (Lacs Rs. Per Day)	2.58	0.18	0.03	0.02
Minimum and Maximum value of Environmental Externality recommended by the Committee (Lacs Rs. per day)	Max. 0.80	Min. 0.25 Max. 0.35	Min. 0.01 Max. 0.05	Min. 0.01 Max. 0.05
Final Environmental Externality (Lacs Rs. per day)	0.80	0.25	0.03	0.02

3.3 Action Plan for Utilization of Environmental Compensation Fund

EC levied in case of failure of preventing the pollutants being discharged in water bodies and failure to implement waste management rules will be deposited in the same fund and will be utilized in the same manner as mentioned in para 1.4.1 of Chapter-I of this report.

3.4 Recommendations

1. The Committee recommended that to begin with, Environmental Compensation to be recovered from individuals/authorities in case of failure of preventing the pollutants being discharged in water bodies and failure to implement solid waste management rules may be calculated with the methodology described in the report.
2. If mixing of Bio-medical Waste and Hazardous Waste is found in Municipal Solid Waste than capital cost component of EC may be increased by a multiplication factor of 1.1 in case of Bio-medical Waste and by a multiplication factor of 1.25 in case of Hazardous Waste.
3. In order to include deterrent effect for repeated violations, component of O&M in EC formula may be increased on exponential basis by 2, 4, 8, 16... times on every six-months, beyond the time prescribed by authority for ensuring complete treatment of sewage/waste of the city/town.

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 593/2017
(W.P. [Civil] No. 375/2012)

In the matter of:

Paryavaran Suraksha Samiti & Anr.
Vs.
Union of India & Ors.

CORAM : HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE DR. JUSTICE JAWAD RAHIM, JUDICIAL MEMBER
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Present: Applicant: Mr. Rohit Prajapati, Applicant in person
Amicus Curiae: Mr. Jai A. Behadral, Adv.
Respondent No. Mr. Nishe Rajan Shonker, Adv. for State of Kerala
Mr. Tarunvir Singh Khehar, Ms. Guneet Khehar
Mr. Sandeep Mishra Adv. for GNCTD
Mr. Anil Shrivastava Mr. Rituraj Bswas and
Ms. Sujaya Bardhan, Adv. for State of Arunachal Pradesh
Mr. Jogy Scaria, Ms. Beena Victor, Adv. for Kerala State Pollution Control Board
Mr. Avijit Roy, Adv. for Assam Pollution Control Board
Mr. Leishangthem Roshmani Kh., Ms. Meibam Babina, Adv. for State of Manipur
Mr. Nikhil Nayyar, Mr. Dhananjay Bajjal, Adv. for APCCB and TSPCB
Mr. Mukesh Verma, Adv.
Mr. Tarunvir Singh Khehar, Adv., Mr. Sandeep Mishra and Ms. Guneet Khehar, Adv.
Mr. Dinesh Jindal, LO for DPCC
Ms. Aruna Mathur, Mr. Avneesh Arputham, Ms. Simraj Jeet and Ms. Annadha Arputham, Adv. for State of Sikkim
Mr. Raja Chatterjee, Mr. Piyush Sachdev, Ms. Abhinandini Yadav, Adv. and Adv. for State of WE
Mr. Edward Belho, AAG, Mr. K. Luikang Michael and Ms. Hoinethiam, Adv. for State of Nagaland
Ms. Enantoli Sema, Adv. for State of Nagaland and Pollution Control Board
Mr. M. Paikaray and Mr. A.K. Panda, Adv. for SPCB, Odisha
Mr. Dhruv Pal, Adv. for State of Gujarat
Mr. V.K. Shukla, Adv. for State of MP
Mr. Jayesh Gaurav, Adv. for R-47
Mr. Tayenjam Momo Singh, Adv. for Meghalaya Pollution Control Board
Mr. Shlok Chandra and Mr. Ritesh Kumar Sharma, Adv.
Mr. Gautam Singh and Mr. Shoab Alam, Adv. for State of Bihar
Ms. Aprajita Mukherjee, Adv.
Ms. G. Indira, Adv. for UT of Andaman & Nicobar
Mr. Balendu Shekhar, Mr. Sriansh Prakash and Mr. Rajkumar Maurya, Adv. for Ministry of Environment, Forest and Climate Change
Ms. Puja Kalra, Adv. for SDMC & NDMC
Mr. Anil Grover, AAG, Mr. Rahul Khurana and Mr. Mishal Vij, Adv. for State of Haryana and HSPCB

Ms. Yogmaya Agnihotri, Adv. and Ms. Prity, Adv. for CECE
 Ms. Sakshi Popli, Adv. for Ministry of Environment, Forest and Climate Change
 Mr. Shuvodeep Roy, Adv. and Mr. Rituraj Biswas, Adv. for State of Tripura & Tripura Pollution Control Board
 Mr. Shashank Bajpai and Mr. Shakun S. Shukla, Advs. for State of Odisha
 Ms. Asha Nayar Basu and Ms. Aradhita Ghosh Mandal, Advs.
 Ms. Priyanka Sinha, Adv. for State of Jharkhand
 Mr. Rajul Shrivastav, Adv. for MPPCB
 Mr. Pradeep Misra and Mr. Daleep Dhyani Advs. for UPPCB
 Mr. R. Rakesh Sharma and Mr. V. Mowli, Advs. for State of TN & TNPCB
 Mr. Shubham Bhalla, Adv.
 Mr. Shiv Mangal Sharma, AAG, Mr. Saurabh Rajpal, Mr. Adhiraj Singh, Ms. Shikha Sandhu and Mr. Vikrmjeet singh, Advs. for State of Rajasthan and Pollution Control Board
 Mr. G. M. Kawoosa, Adv. for State of J & K
 Mr. Divya Prakash Pande, Adv. For HPSPCB
 Mr. Manish Kumar, Adv.

Date and Remarks	Orders of the Tribunal
<p>Item No. 12 August 03, 2018 A</p>	<p>1. This matter was taken by this Tribunal in furtherance to the orders of the Hon'ble Supreme Court dated 22.02.2017 <i>Paryavaran Suraksha Samiti Vs. Union of India</i> (2017) 5 SCC 326, establishment and functioning of ETPs/CETP/STPs.</p> <p>2. Vide order dated 25.05.2017, Notice was issued to Central Pollution Control Board and all the States Pollution Control Boards/Committees and the Ministry of Environment, Forest and Climate Change. They were directed to file status-cum-compliance report in terms of the orders of the Hon'ble Supreme Court. Accordingly, various status reports have been filed. An affidavit has been filed by the Ministry of Environment, Forest and Climate Change dated 04th July, 2017 stating as follows:</p> <p>"4. That the answering Respondent is engaged in policy formulation, prescribing standards and its implementation through the Central Pollution Control Board (CPCB), State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) for UTs. This Ministry has written to all SPCBs and PCCs as well as to CPCB to ensure compliance of the judgment of the Hon'ble Supreme Court and to submit detailed compliance report.</p>

Item No.
12

August 03,
2018
A

5. That the CPCB has also followed up with all SPCBs and PCCs through letters and review meetings to ensure compliance of the aforementioned judgment and that the matter was also discussed in the 62nd Conference of the Chairmen and Member Secretaries of SPCBs and PCCs held on 27.06.2017. That 26 SPCBs/PCCs have submitted the compliance report, which has been summarized at Annexure-I.

6. That the CPCB has also carried out inspections of 17 categories of industries to verify compliance with its directions issued on online effluent/emission monitoring system and to cross-verify online results with manual sampling. During February-June, 2017, 64 industries were inspected and directions under section 5 of the Environment (Protection) Act, 1986 have been issued to 24 non-complying industries; 18 industries were complying; 8 were found closed and inspection reports of 14 industries are under process.

7. That the CPCB and NMCG through 11 technical institutions, inspected 751 industries located in the River Ganga main stem during March-April, 2017 to verify the status of installation and connectivity of industries discharging effluents as well as their compliance with the standards. Closure directions have been issued to 154 industries; show cause notices issue to 36 industries; 149 industries were found complying and direction issued to 91 self-closed Grossly Polluting Industries (GPI) to remain closed; 93 GPI units were found closed as per directions; 38 GPI units found operational in violation of closure directions and inspection reports of 190 industries are under process.

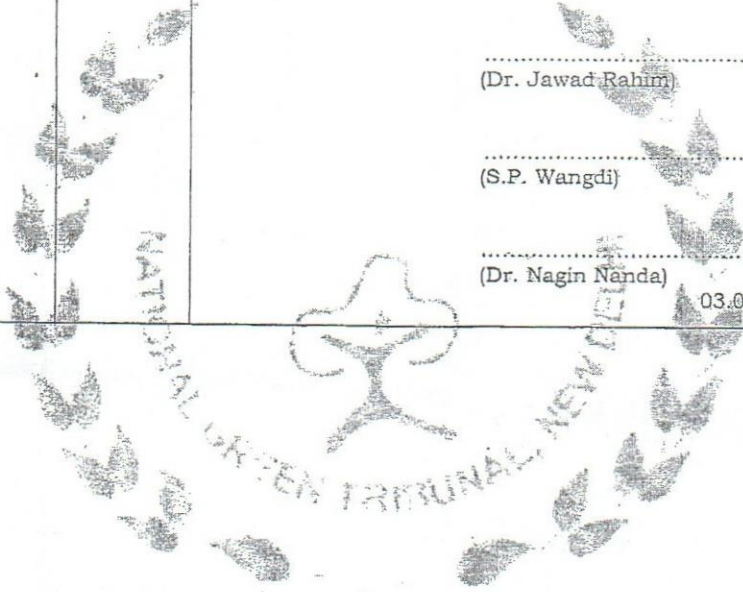
3. We have heard learned Amicus Curiae Sh. Jai A. Dehadrai and the learned counsel for Ministry of Environment, Forest and Climate Change, Central Pollution Control Board, various State Pollution Control Boards and the Pollution Control Committees.

4. Learned Amicus Curiae has drawn our attention to orders dated 04.07.2017, 18.09.2017 and 11.10.2017 of the Tribunal directing the State Pollution Control Boards to file a statement as to how many Industrial Units discharging trade effluents or causing emissions exist in the State, how many are having their own STPs, ETPs and/or connected to Common Effluent Treatment Plant

	<p>Item No. 12 August 03, 2018 A</p>	<p>(CETP), whether any such CETP or ETP or STP is properly functioning and treating the effluents as per prescribed limits or not.</p> <p>5. Learned Amicus Curiae submitted that contamination of water due to industrial effluents can lead to various diseases and adverse consequences on the aquatic organism due to decreased level of oxygen. The use of technology can help reduction of adverse consequences. However, the best solution is to prevent pollution by soil conservation and proper disposal of toxics and chemicals which may include chemical recycling.</p> <p>6. Having monitored the matter for the last more than one year on several dates, we are of the view that the matter requires continuous monitoring by statutory authorities as per directions which we proceed to issue today.</p> <p>(i) We direct the Central Pollution Control Board (CPCB) to forthwith prepare an action plan after looking into all the status reports. The action plans must have mechanism to ensure compliance or all the directions in the order of the Hon'ble Supreme Court. To enable this to be done, a Nodal officer must be identified to deal with the issue of CETPs/ETPs/STPs.</p> <p>(ii) A representative of the Ministry of Environment, Forest and Climate Change may be associated with the Nodal Officer of the CETP for monitoring. The Monitoring by the said two officers- the representative of the MoEF and the Nodal Officer of the CPCB must be held atleast once in a month and on the basis of such meeting and the feedback taken further follow up action must be taken and</p>
--	--	---

	<p>Item No. 12</p> <p>August 03, 2018 A</p>	<p>appropriate directions issued. This process may be a continuous process.</p> <p>(iii) It must be ensured that STPs, CETPs and ETPs are functional and meet the requisite standards.</p> <p>(iv) There is already a direction in the above judgment under which 50% of the funds for the purpose are to be provided by the Central Government, 25% by the States and remaining 25% to be arranged by way of loans which is to be re-paid by the user industries. Local bodies and the States have duties as clearly stipulated in the judgment. There has to be online monitoring system by each State to display emission levels in public domain in terms of paragraph 17 of the order of the Hon'ble Supreme Court.</p> <p>(v) A report of the steps taken may be placed on the website of the Central Pollution Control Board atleast once in three months. Deficiencies if any may also be so displayed.</p> <p>(vi) The Central Pollution Control Board may take penal action for failure, if any, against those accountable for setting up and maintaining STPs, CETPs and ETPs. Central Pollution Control Board may also assess and recover compensation for damage to the environment and the said fund be kept in a separate account and utilized in terms of an action plan for protection of the environment. Such action plan may be prepared by the Central Pollution Control Board within three months from today.</p> <p>(vii) A compliance report in terms of the above order may be furnished to this Tribunal within four months from today by e-mail at filing.ngt@gmail.com.</p>
--	---	---

	<p>Item No. 12</p> <p>August 03, 2018 A</p>	<p>(7) Proceedings are disposed of.</p> <p>However, the report received from the Central Pollution Control Board may be placed for consideration before this Tribunal on 04.09.2018.</p> <p>We place on record our appreciation for the services rendered by the learned Amicus Curiae.</p> <p>....., CP (Adarsh Kumar Goel)</p> <p>....., JM (Dr. Jawad Rahim)</p> <p>....., JM (S.P. Wangdi)</p> <p>....., EM (Dr. Nagin Nanda)</p> <p>03.08.2018</p>
--	---	---



Annexure-II

Comments Received from Various RDs on Draft Report for Environmental Compensation

S. No.	Item	RD Kolkata	RD Vadodara	RD Bengaluru	RD Lucknow	Committee Deliberations
1	Case- a, b & c	By-passing of effluent/emission should be given special consideration. EC levied on ROG categories of industries should be on the basis of inspection by CPCB, complaint verification and routine inspection.	Instead of "Compensation", "Penalty" word should be used. In case common facilities like CETPs, factor may be introduced based on member industries. Clarify the applicability of penalty in addition to closure directions for pro-longed and gross non-compliance.			The Committee discussed that the points highlighted by RD Kolkata are already the part of environmental compensation. However, as mentioned by RD Vadodara, word "Penalty" may be used for case a, b and c. For CETPs, a factor may be considered in future based on the capacity of the plant.
2	Case- d, e & f	Higher rates for irreparable damages crop, soil, health etc. Leakages/spillage should have different compensation value.	It should be mentioned that instances d, e & f shall be dealt for environmental compensation in line with the polluter pays principle, besides of environmental penalty for cases a, b and c.	Similar to "Guidelines on Liabilities for Environmental Damages due to Handling & Disposal of Hazardous Waste and Penalty", Guidelines may be prepared.		Suggestions made by RD Kolkata and Vadodara has already been taken care. Concept of environmental compensation is based on the philosophy of "polluters pay" and for grievance injury to environment, compensation will be charged as per the assessment of remediation cost, on case to case basis.
3	Pollution Index (PI)			Instead of average PI, Actual PI may be used.		Committee suggested that to make the implementation of EC simple and easy, use of average PI may be considered for calculation of EC.
4	R-factor	Should be based on pollution load. For ex. Amount of BOD/NOx etc. discharged.		May be classified based on the contribution of pollution load based on quantity of effluent, concentration, emissions	May be as per the category of industry, for ex. Red-500, Orange-300, Green-100.	As PI is based on the pollution load, suggestion of RDs are already taken care in the formula.
5	L-factor			May be redefined based on the features, activities involved and habitation.		L-factor may be covered in future as already indicated in the report.

Annexure-II

S. No.	Item	RD Kolkata	RD Vadodara	RD Bengaluru	RD Lucknow	Committee Deliberations
6	Defining period of violations for which EC will be levied		Duration of violations needs more clarity.	For industry having OCEMS, no. of days may be counted based on the recorded data. Industry without OCEMS- based on break down of ETP/APCD, disturbance of power supply or any failure of auxiliary machineries w.r.t. control system.	May be clearly defined as the period between the day of violation observed and the day of compliance verified by CPCB/SPCB/PCC.	The committee agreed that period of violation for which EC may be levied will be the period between the day of violation observed and the day of compliance verified by CPCB/SPCB/PCC.
7	Repeated Violations		Some number of days may be specified after which the penalty amount may get a factor of 1.5 or 2.		Multiplying factor for repeated violations may be included. For ex. 1 st Repetition- 25% 2 nd Repetition- 50% 3 rd Repetition- 100%	For habitual offenders, higher amount of penalty/compensation may be charged in future.
8	Utilization of fund	An environmental damage assessment cell may be created. Expertise in the field may be achieved by involving scientist/engineers and providing them training in country/abroad.	Amount should not be utilized for a) Industrial Inspections for compliance verification, b) Installation of Continuous water quality monitoring stations / Continuous ambient air quality monitoring stations for strengthening of existing monitoring network, c) Preparation of Comprehensive Industry Documents on Industrial Sectors / clean technology f) Funding to financially weaker municipalities for installation of STPs The amount should be utilized solely for damage assessment, remediation of affected sites, orphan contaminated sites and creating awareness. The purpose should not get inclined towards revenue generation.			RD Vadodara suggested that amount should be utilized only for remediation purpose. However, committee discussed that the proposal for utilization of fund is prepared considering the other aspects (i.e. direct and indirect) for protection of environment, which include research, monitoring etc. Suggestion of RD Kolkata may be considered in future.

9	Others	Higher EC for non-installation of pollution control measures. Expected sources should have different scoring methodology based on their weightage.	Thus, the functional fabric of CPCB shall remain intact.		The committee discussed that CPCB is already taking appropriate action including closure direction against the industries found operating without pollution control measures.
---	--------	---	--	--	---

Comments Received from Various Expert Institutions on the Report on Environmental Compensation

As per the Hon'ble NGT suggestion, CPCB has invited comments of 3 expert institution, namely, Centre for Science and Environment (CSE), Institute of Economic Growth (IEG) and The Energy Research Institute (TERI). CSE and IEG has provided their comments, however, TERI has not provided any response. The CPCB in-house committee on Environmental Compensation has deliberated on the comments and finalized the report accordingly. The Committee's deliberations are summarized in table below:

S. No.	Item	Comments of CSE	Comments of IEG	Committee's Deliberations
1	Cases 'e' and 'f'	-	Why cases 'e' and 'f' are left for later remediation and study?	There may be a varied damage to the environment as considered in cases 'e' and 'f'. Such damage assessment requires detailed case specific study and remediation measures. Therefore, whenever such case comes into the notice, Environmental Compensation may be levied based on the detailed investigation made by Expert Institutions/Organizations.
2	R-factor	R-factor should be Rs. 1,000/day.	Why R-factor is kept as 250, although the value ranges between 100 to 500?	In the Environmental Compensation policy, average value of the R-factor as 250 is recommended, keeping in view both its practicability as well as to make it significantly deterrent, which may be further revised in future.
3	L-factor	L-factor should be based on the population density of surroundings, instead of population of the nearby city/town. For critically polluted areas/ecologically fragile areas LF should be considered as 2.	For nearby city, having population less than 1 million, the LF is 1. This implies that we care only for populated regions only. Industries located in critically polluted and ecologically fragile area should be closed down.	Population density for surrounding of industrial units will be complex because it will vary depending on area used in calculation of population density as industrial units are generally away from population. More weightage is given to the higher population exposure to the risk. In case the industry is located in the city of population less than one million than the LF Factor will be 1. Depending on the local environmental conditions, the restrictions on expansion and modernization of industries in critically polluted areas are imposed as per the prevailing policy of the Government of India. Similarly, industries in ecologically fragile areas are permitted after careful examination, as per prevailing policy of MoEFCC/SPCB.

The Committee agreed that for notified ecologically fragile areas, LF may be considered as 2. However, LF for critically polluted areas may be explored in future.

S. No.	Item	Comments of CSE	Comments of IEG	Committee's Deliberations
4	S-factor	S-factor should be based on the turnover of the industrial unit.		Presently industrial units are classified into small, medium and large category (MSME Act, 2006) based on the data of assets/infrastructure available with them. The data for turnover of industrial units are not available with SPCBs/PCCs and S-factor based on turnover will complicate the procedure for calculation of EC. This may be considered in future when SPCBs/PCCs will have such type of data.
5	Level of non-compliance	For different level of non-compliance such as gross, moderate and low, a factor for 'intensity of violation', IV-factor should be incorporated in the formula.		Pollution Index (PI) itself covers the potential of environmental pollution as its calculation considers variation in pollution load. To keep the formula simple for better implementation, the IV factor may not be considered as there are different environmental parameters such as environmental standards and for each standard calculation of level of violation and its weightage will be a tedious task, which may bring difficulty in implementation of EC concept. Such schemes may be considered separately.
6	Utilization of fund		Incentives to regulators where no violations are observed and incentives to public for reporting violations may be provided.	
7	GRAP		Size of the construction sites more than 20,000 sqm. area are considered for EC. Although, small sites cumulatively impact significantly. Illegal dumping of municipal solid waste regardless of the place should be penalized.	As per the EIA Notification, 2006, building construction projects more than 20,000 sqm. area are required to have environmental clearance, therefore, the same cut-off is maintained here. Issue of illegal dumping of municipal solid waste is being covered in separate report of EC.

their performance should be recorded and considered favourably or otherwise for their career progression.

xv. Similar exercise as (xiv) may be undertaken to identify officers responsible for failure in the past. Such exercise may be completed within three months from today.

xvi. Since failure of preventing the pollutants being discharged in water bodies (including lakes) and failure to implement solid and other waste management rules are too frequent and widespread, the CPCB must lay down specific guidelines to deal with the same, throughout India, including the scale of compensation to be recovered from different individuals/authorities, in addition to or as alternative to prosecution. The scale may have slabs, depending on extent of pollution caused, economic viability, etc. Deterrent effect for repeated wrongs may also be provided.

xvii. MoEF&CC may specify limit for phosphorus in soaps and detergents to prevent damage to the environment and public health.

27. The above amount in the present case has been determined having regard to the estimated cost of setting up of STPs, based on the data available, which has been assessed with the assistance of the learned Counsel for the parties.

28. We have nominated Justice Santosh Hegde on information being provided during the hearing that he is agreeable to undertake the above job.

29. Justice Hegde will be entitled to a token honorarium of Rs. 2.5 Lakh per month from the date he assumes the charge. Justice Hegde will be entitled to assistance of persons of his choice for which remuneration will be paid by the SPCB, Karnataka as may be determined by Justice Hegde.

References

1. Bureau of Indian Standards. 1993. IS1172:1993 (Reaffirmed 2002). *Code of Basic Requirements for Water Supply, Drainage and Sanitation (Fourth Revision)*. New Delhi: BIS.
2. Census of India. 2011. Census of India's website. [Online]. [Accessed 15 February 2019]. Available from: http://censusindia.gov.in/2011-prov-results/paper2/data_files/India2/1.%20Data%20Highlight.pdf.
3. Central Pollution Control Board. 2013. *Performance Evaluation of Sewage Treatment Plants under NRCD*. Delhi: CPCB.
4. Central Pollution Control Board. 2016. *Graded Response Action Plan for Delhi & NCR*. Delhi: CPCB.
5. Central Pollution Control Board. 2016. *Final Document on Revised Classification of Industrial Sectors Under Red, Orange, Green and White Categories*. Delhi: CPCB.
6. CPHEEO. 2013. *Manual on Sewerage and Sewage Treatment Systems – 2013*, New Delhi: Ministry of Urban Development, Government of India.
7. CPHEEO. 2016. *Manual on Municipal Solid Waste Management – 2016*. New Delhi: Ministry of Urban Development, Government of India.
8. Ministry of Micro, Small and Medium Enterprises. 2006. *The Micro, Small and Medium Enterprises Development Act, 2006*. 2nd October, 2006, vide notification No. S.O. 1154(E) dated 18th July, 2006, see *Gazette of India, Extraordinary Part II sec.3(ii)*, Government of India.
9. *Plastic Waste Management Rules, 2016*. (G.S.R. 320 (E) [18-03-2016]). New Delhi: Ministry of Environment Forest and Climate Change, Government of India.
10. *Solid Waste Management Rules, 2016*. (S.O. 1357(E) [08-04-2016]). New Delhi: Ministry of Environment Forest and Climate Change, Government of India.