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IN THE NATIONAL GREEN TRIBUNAL, SOUTHERN ZONE BENCH,
CHENNAI IN
ORIGINAL APPLICATION NO. 66 of 2017

IN THE MATTER OF:-

Vallapureddy Gari Govardhan Reddy & Ors. Applicants

VERSUS

Union of India & Ors. Respondents

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Date: 28.03.2025

Place: Vijayawada

Respondent No. 1

Me. Sarashwathy
[ME. SARASHWATHY]
Through.

(Counsel for Respondent No. 1)

Respondent No.

IN THE NATIONAL GREEN TRIBUNAL, SOUTHERN ZONE BENCH,
CHENNAI IN
ORIGINAL APPLICATION NO. 66 of 2017

IN THE MATTER OF:-

Vallapureddy Gari Govardhan Reddy & Ors.Applicants

VERSUS

Union of India & Ors.Respondents

ADDITIONAL AFFIDAVIT ON BEHALF OF MINISTRY OF ENVIRONMENT,
FOREST AND CLIMATE CHANGE

MOST RESPECTFULLY SHOWETH:-

I, Dr. MURALI KRISHNA CHIMATA, working as **Scientist 'E'** in the Sub-Regional Office of the Ministry of Environment, Forest and Climate Change, at Vijayawada (hereinafter referred to as 'MoEF&CC') the deponent herein do hereby solemnly affirm and state on oath as under:-

1. That I am duly authorized and competent to swear the present counter affidavit on behalf of MoEF&CC.
2. That the contents of the application, unless specifically admitted, are denied to the extent that they are inconsistent with submissions made hereinafter.

Ch. Murali Krishna

डॉ. मुरली कृष्ण चिमटा/Dr. Murali Krishna Chimata
वैज्ञानिक "ई"/Scientist "E"
भारत सरकार/Government of India
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
उप-कार्यालय, विजयवाड़ा-520 010
Sub-Office, Vijayawada-520 010

3. It is respectfully submitted that the present affidavit is being filed in compliance with the order dated 27/02/2025 passed by this Hon'ble Tribunal wherein the Hon'ble tribunal observed the following:

i. "5. Let the MoEF&CC file an additional report to state whether the agreement with NEERI has been entered into and the timeline within which they can complete the study."

b. The copy of the above-mentioned order is attached herewith and marked as **Annexure R/1**.

4. It is humbly submitted that the answering respondent has signed the Contract Agreement with CSIR-NEERI on 09/09/2024 providing a time-period of 24 months for conducting the study with the following terms of reference:

- a) *Study the process flow diagrams of PCC, Nano PCC and inorganic chemical industry analysing raw materials, transportation, energy use, emissions, etc., in the concerned industry.*
- b) *Obtain Lifecycle Inventory (LCI) to detail inputs and outputs of each activity in the product lifecycle, essential for LCA.*
- c) *Address data gaps in the inventory by incorporating information from existing literature, reports, or expert judgments.*
- d) *Perform LCA for PCC and Nano PCC using the GaBi tool, conducting Midpoint analysis as part of the ISO 14040 & ISO 14044 standards.*
- e) *Extend the LCA to encompass other inorganic chemicals (Category A), considering both conventional and nanoproducts, to establish a baseline understanding of their environmental footprints.*
- f) *Compare and contrast conventional and Nano-industry processes, evaluating midpoint impacts derived from the LCA analysis to discern potential environmental advantages or disadvantages.*

Ch. Murali Krishna

डॉ. मुरली कृष्ण चिमटा/Dr. Murali Krishna Chimata
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 Ministry of Environment, Forest and Climate Change
 उप-कार्यालय, विजयवाड़ा-520 010
 Sub-Office, Vijayawada

- g) *Interpret the results of the LCA, drawing meaningful insights and formulating practical recommendations based on the observed environmental implications.*
- h) *Additionally, perform an emission profile study within a 10 km radius of the Nano PCC industry, utilizing sophisticated analytical techniques to quantify Nano calcium levels, Establish a baseline for background concentration assessment.*
- i) *Carry out the Lagrangian Particle Dispersion (LPD) Modeling as an alternative method to explore nanoparticle dispersion behaviour in the atmosphere, providing insights into the dynamics and evaluating the impact of fugitive emissions.*

5. It is humbly submitted that the answering respondent has already released the 1st Installment i.e. 40% of Project Cost+ GST to CSIR-NEERI for Conducting Risk-Based Life Cycle Assessment of the Conventional and Nano Precipitated Calcium Carbonate Industry Midpoint Analysis Based Approach.

6. It is humbly submitted that CSIR-NEERI has submitted its draft inception report. The copy of the draft inception report is attached herewith and marked as **Annexure R/2**.

7. It is humbly submitted that the answering respondent in compliance of the order dated 27/02/2025 has requested Central Pollution Control Board (CPCB) and Andhra Pradesh Pollution Control Board (APPCB) to provide appropriate guidelines for the regulations of those industries involving Nano Technology. A Copy of the OM is attached herewith and marked as **Annexure R/3**.

8. That the present affidavit may kindly be taken on record and into consideration and the Hon'ble Tribunal may pass appropriate Order(s), direction(s) as deemed fit and proper under the facts and circumstances of the present case.


DEPONENT

डॉ. मुरली कृष्ण चिमटा/Dr. Murali Krishna Chimata
वैज्ञानिक "ई"/Scientist "E"
भारत सरकार/Government of India
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
उप-कार्यालय, विजयवाडा-520 010
Sub-Office, Vijayawada-520 010

VERIFICATION

Verified at Vijayawada on 28th day of March, 2025 that the contents of the above affidavit are correct to my knowledge and belief based on official records and nothing material has been concealed therefrom.

Ch. Murali Krishna

DEPONENT

डॉ. मुरली कृष्ण चिमटा/Dr. Murali Krishna Chimata
वैज्ञानिक "ई"/Scientist "E"
भारत सरकार/Government of India
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
उप-कार्यालय, विजयवाडा-520 010
Sub-Office, Vijayawada-520 010

Item No.03:

**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

[Through Physical Hearing (Hybrid Option)]

Original Application No. 66 of 2017 (SZ)

IN THE MATTER OF:

Vallapureddy Gari Govardhan Reddy and Ors.

...Applicant(s)

Union of India and Ors.

...Respondent(s)



Date of hearing: 27.02.2025.

CORAM:

HON'BLE Smt. JUSTICE PUSHPA SATHYANARAYANA, JUDICIAL MEMBER

HON'BLE Dr. SATYAGOPAL KORLAPATI, EXPERT MEMBER

For Applicant(s): Mr. A. Yogeshwaran.

For Respondent(s): Mrs. Madhuri Donti Reddy for R2 & R3.

ORDER

1. Respondent No.1/MoEF&CC has filed a memo dated 01.08.2024.

2. The present matter relates to the probable pollution that is likely to be caused on account of nano industries, including the Precipitated Calcium Carbonate Unit, etc.

3. Admittedly, the EIA Notification, 2006 does not find a mention about these Nano Technology Industries, whether to obtain prior Environmental Clearance or not. In this regard, a direction was issued to the MoEF&CC to make a thorough study, bring in the appropriate guidelines and include the Nano Technology Industries in the EIA Notification, 2006.

4. Pursuant to the same, the MoEF&CC has submitted the proposal to the National Environmental Engineering Research Institute (NEERI) and the same was approved by the competent authority. They are yet to sign the agreement with NEERI for this purpose.

5. Let the MoEF&CC file an additional report to state whether the agreement with NEERI has been entered into and the timeline within which they can complete the study.

6. We are passing this order in the matter of the year 2017 wherein the judgment was passed in 2022. Despite the passage of so many years, there is no complete progress made.

While a thorough study is being entrusted to NEERI, there should be some kind of regulations for those industries involving Nano Technology, for which, the MoEF&CC and the Central Pollution Control Board (CPCB) to join hands and issue guidelines pending the detailed study.

7. As already the pollution that may be caused in this regard is highlighted in the Original Application, we only direct the MoEF&CC and the CPCB to take a serious view on this matter, expedite the process and issue appropriate guidelines in consultation with the scientists of the APPCB before the NEERI report comes.

8. Let the Registry communicate this order to the MoEF&CC and CPCB by e-mail for compliance with the directions.

9. Post the matter on **02.04.2025**.

Sd/-
Smt. Justice Pushpa Sathyanarayana, JM

Sd/-
Dr. Satyagopal Korlapati, EM

O.A. No.66/2017(SZ)
27th February, 2025. AD.

Draft Inception report

Conducting Risk-Based Life Cycle Assessment of the Conventional and Nano Precipitated Calcium Carbonate Industry: Midpoint Analysis Based Approach



Submitted to

**Ministry of Environment, Forests and Climate Change
(MoEF&CC)**



**CSIR-National Environmental Engineering Research Institute, Nagpur
440020**



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1. Introduction

The life cycle assessment [LCA] methodology evaluates the products environment impact according to ISO standards 14040-44. To achieve this, the products life cycle is broken down into independent unit processes, each having a unit set of quantifiable inputs and outputs for energy and materials. LCA framework essentially consists of four steps, as show in **Figure 1**.

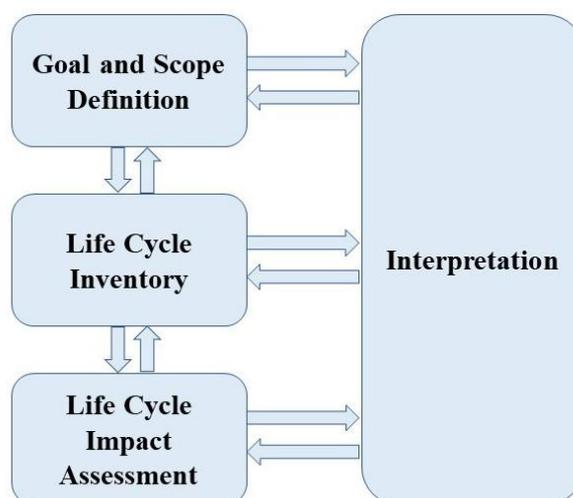


Figure 1:Basic Framework of LCA

1.1 Goal and Scope Definition

The initial step is to evaluating the environmental impact of a product or process is to define the studies aim and objectives. This involves specifying the intended application of the Life Cycle Assessment [LCA] and how its results will be utilized. A critical part of this process is establishing the Functional Unit [FU], which serves as the baseline for quantifying material, energy and emission flows throughout the product lifecycle. Additionally, defining the system boundary outline the processes included or excluded. There are four main options to define the system boundaries:

- a) **Cradle to Grave [C2Gv]:** Includes the material and energy production chain and all processes from the raw material extraction through the production, transportation, and use phase up to the product's end-of-life treatment.



- b) **Cradle to Gate [C2G]:** Includes all processes from the raw material extraction through the production phase [gate of the factory]; used to determine the environmental impact of the production of a product.
- c) **Gate to Grave [G2Gv]:** Includes the processes from the use and end-of-life phases [everything post-production]; used to determine the environmental impacts of a product once it leaves the factory.
- d) **Gate to Gate [G2G]:** Includes the processes from the production phase only; used to determine the environmental impacts of a single production step or process.

1.2 Life Cycle Inventory Analysis [LCI]

LCI involves the compilation and quantification of inputs and outputs for a given product system throughout its life cycle or single processes based on the scope of the study. It can assist organizations in comparing products or processes and environmental impacts, thereby guiding toward a better decision/policy formulation.

1.3 Life Cycle Impact Assessment [LCIA]

The Life Cycle Impact Assessment examines and evaluates the scope and importance of any potential environmental effects resulting from the LCI. This phase of LCA deals with the potential human health and environmental impacts that may result from the product or the process. It evaluates the same utilising various approaches outlined by international standards and produces the results in the form of numerous impact categories and indicators [mid-point or end-point]. The report presents the data in the form of twelve midpoint indicators [including eco-toxicity and resource depletion indicators] to evaluate the environmental impacts such as:

- a) **Global Warming Potential [GWP]:** It is the relative index of environmental impact caused by the atmospheric emissions associated with a product/process/service measured in reference to that caused by a unit mass of CO₂. In other words, the greenhouse effect of emissions is quantified in kg of CO₂.

- b) **Acidification Potential [AP]:** It measures the degree of acidification of land and water caused by acidic pollutants like SO_2 . Acid deposition is a worrying and environmentally unpleasant result. AP is a measure of the ability of the emission to potentially cause acid deposition and is measured in kg SO_2 equivalents.
- c) **Eutrophication Potential [EP]:** It determines the ability of the emissions to cause soil enrichment beyond the specified levels. . EP is measured in terms of kg PO_4 equivalents and indicates the degree of susceptibility of the adverse impact of the emission.
- d) **Ozone Depletion Potential [ODP]:** Ozone depletion potential indicates the relative ability to destroy ozone based on the input's reactivity and time. It is measured in terms of kg R-11 equivalents.
- e) **Abiotic Depletion Potential, Fossil [ADP, fossil]:** It refers to a few certain natural resources, such as mineral raw materials, crude oil, and metal-containing ores. The abiotic depletion potential, fossil comprises of fossil fuels such as crude oil, natural gas, coal resources. It is expressed as MJ.
- f) **Photochemical Ozone Creation Potential [POCP]:** Ozone is a trace gas that is considered harmful at ground level, despite having a protective function in the stratosphere. It is also known as summer smog. It is measured in kg Ethane- equivalents.
- g) **Human toxicity Potential [HTP] and Terrestrial Eco-toxicity Potential [TETP]:** HTP aims to estimate the negative impact of processes or products or any system on human health whereas TETP outlines the damaging effects on an ecosystem caused by the same. It is measured in 1, 4-dichlorobenzene [DCB] equivalents.

1.4 Interpretation

Life cycle interpretation is a systematic procedure for effectively identifying, quantifying, verifying, and evaluating data from the LCI and LCIA outcomes. Its primary objectives are to:



- Analyse the data;
- Draw conclusions based on the results;
- Clarify the study's/limitations, process's;
- Offer long-term remedies to prospective problems;

In the present report, life cycle assessment of conventional and nano products such as Calcium Carbonate, Nano-Precipitated Calcium Carbonate [N-PCC], and other Category A chemical as identified by MOFECC, is to be performed. LCA will give a clear understanding of the environmental impacts caused by conventional and nano products throughout its life cycle starting from extraction raw material to the its end of life. The goal and scope of the study was decided based on the feasibility of the study and intended comparison between the conventional nano products and Category-A inorganic products, considering both conventional and nano for category A product as well. The process simulation is to be performed using GaBi professional software developed by Think step AG, Germany [Gabi ts v8.7 software] and environmental impacts were calculated using several impact indicators Also, the greenhouse gases [GHG] emissions from the life cycle of products are segregated based on the scope 1, 2 and 3 emissions specified by GHG Protocol corporate standard.

2. Methodology

2.1 Goal and scope

The primary aim of this study is to conduct a detailed **Risk-based Life Cycle Assessment [RbLCA]** of the Nano industry, focusing on health and environmental impacts related to the sector. Given the complexities associated with Risk-based LCA, the approach has been specifically tailored to assess the **endpoint impacts** of the industry sector. In addition to the primary goal, the project will evaluate the environmental impacts of Precipitated Calcium Carbonate [PCC], Nano-Precipitated Calcium Carbonate [Nano-PCC], and type of other selected [Category-A industry] in discussion with MOFECC, establishing a baseline comparison, as identified by CSIR-NEERI and MOEFCC.



- The project will compare PCC and Category-A inorganic products, along with their nano counterparts-based production processes using a comprehensive LCA methodology, aligned with ISO 14040 & ISO 14044 standards.
- Assess environmental advantages or disadvantages of Nano PCC over conventional PCC.
- Conduct an emission profile study within a 10 km radius of the Nano PCC industry to measure Nano calcium levels and establish a baseline for background concentrations.
- Lagrangian Particle Dispersion [LPD] Modelling will be used as an alternative approach to study nanoparticle dispersion in the area.

Phase 2 Consideration: If the environmental footprint of Nano PCC is higher than that of conventional PCC, Phase 2 will focus on detailed health and environmental impact assessments, which is to be studied separately.

2.2 Functional Unit

A functional unit quantifies a system's purpose to enable consistent comparisons. In this study, adjustments will have to be made to align the units for conventional and nano products given the variation in the efficiency of the materials both on the development side and application side. Usually because of smaller size of the nano particles, the production process is complicated while on the application side, it has higher efficiency because of its size and hence it used in lesser quantity. Hence a uniform functional unit does not make sense in the case and based on efficiency, it will have to be decided for comparative purposes.

2.3 System boundary

The LCA study shall follow a cradle to grave approach, focussing on production, packaging, use and disposal and secondary impacts within the product lifecycle. It includes raw material extraction, transportation, usage and waste generation but accounts for all materials, chemicals and energy used during production.

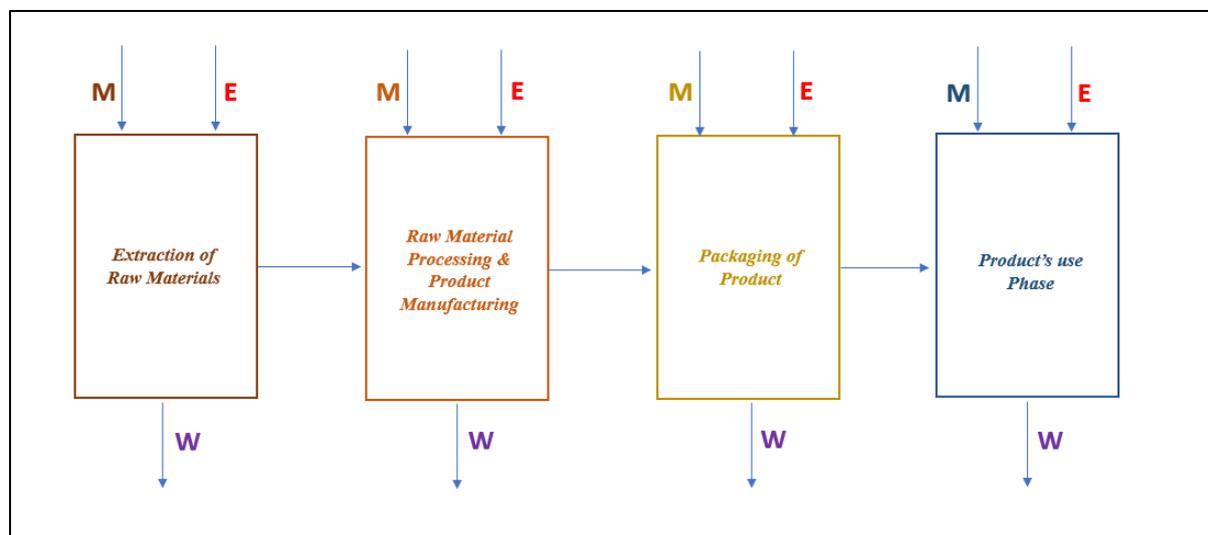


Figure 1: System boundary for LCA for nano and conventional products

Where, M and E = materials and energy inputs to processes

W = waste (gas, liquid or solid) output from processes

2.4 Life Cycle Inventory [LCI]

2.4.1 Data collection and approach

- Collect data from diverse and credible sources to ensure reliability and accuracy.
- Focussed on inputs, energy usage, process efficiency and environmental impacts for conventional and nano products.
- Used advanced tools, including Gabi professional software and databases [Indian, GLO, and EU-28] for data modelling and process simulation.

2.4.2 Process Modelling and Functional Units

- Conducted detailed modelling for conventional and nano products considering the above system boundary and functional unit



2.4.3 Methodology Highlights

- Adopted a cradle to grave lifecycle approach to assess processes for both types of product categories
- Normalized data to ensure comparability and environmental performance evaluations.

3. Process flowsheets for Category-A Industry as identified by MoEFCC

Using the available data, we will create process flowsheets for conventional and nano products as identified by MOFECC with the help of GaBi ts software.

- For each process, identify critical inputs such as raw materials, energy usage and emissions.
- Highlights process efficiencies and outputs, such as reduced CO2 emissions.
- Compare the environmental advantages and disadvantages of conventional and nano products
- Encourage capacity building and technological upgrades to produce Nano scale products efficiently.
- Integrate findings from process evaluations to refine manufacturing techniques and optimize outcomes.

Above mentioned points provides a step-by-step approach for understanding, designing and optimizing the production processes for both conventional and nano product industry.

4. Life Cycle Impact Assessment

The Life Cycle Impact Assessment (LCIA) for Category-A inorganic products shall be conducted using the CML-2015 method, which evaluates environmental impacts across categories like global warming potential, eutrophication potential, and human toxicity etc. The total environmental impact will calculate by aggregating the impacts from all processes across the various categories, providing an overall view of the product's footprint. Based on this data graphs will be generated, allowing us to identify the major hotspot areas with the highest environmental impacts. These insights will help to target specific stages of the process for improvement.

5. Comparative Analysis of conventional and nano products

In the comparative analysis of conventional PCC and Nano PCC, an understanding of impact generated by both the types of products shall be carried out. Furthermore a similar analysis shall be carried out for identified Category-A inorganic product as well from nano and conventional perspective. The report shall delineate and compare the environmental impacts, efficiency and performance of both types of products. This analysis will focus on key impacts categories such as global warming potential, eutrophication potential, human toxicity etc. Additionally, considering the material efficiency, production processes, and sustainability, the report shall identify the products offering better environmental benefits and performance improvements. The results will highlight the potential advantages of both the type of products in reducing environmental footprints while maintaining or improving effectiveness

6. Activity Plan: Next Steps Forward

- Collect industry-level data for Life Cycle Assessment (LCA) to ensure comprehensive analysis.
- Finalize the category A industry with MoEFCC to facilitate accurate and reliable data collection.
- Focus on inputs, energy usage, process efficiency, and environmental impacts for conventional and nano products
- Utilize advanced tools like Gabi Professional software and databases (Indian, GLO, EU-28) for data modelling and process simulation.
- Establish functional units for normalized comparisons of conventional PCC and Nano-PCC.
- Adopt a cradle to grave lifecycle approach to assess processes from raw material extraction production to packaging to final use and disposal
- Conduct an emission profile study within a 10 km radius of the Nano PCC industry to measure Nano calcium levels and establish baseline background concentrations.
- Use Lagrangian Particle Dispersion (LPD) Modelling to study nanoparticle dispersion in the area.



7. Conclusion and Recommendations

In the current case of products like precipitated calcium carbonate (PCC), LCA studies often reveal impacts that may be related to energy consumption and greenhouse gas emissions. PCC production can involve energy-intensive processes, and the source of raw materials (e.g., limestone) and manufacturing methods can influence the overall environmental footprint. PCC production can involve energy-intensive processes and might contribute to greenhouse gas emissions. Additionally, depending on the source of raw materials and manufacturing methods, there might be impacts on water consumption and land use. While specific impacts may vary, energy consumption and associated greenhouse gas emissions are often significant concerns for PCC and other inorganic materials.

Nano products offer wide variety of benefits but may possess unique properties that can lead to a range of environmental impacts throughout their lifecycle. Life Cycle Assessment (LCA) studies are crucial for understanding these impacts, which may often span categories like human health, eco toxicity, and resource depletion. Human health impacts can arise from the potential toxicity of certain Nano products, with concerns about inhalation, skin contact, or ingestion possibly leading to issues like respiratory problems or internal organ damage. Eco toxicity is another significant concern, as some nanomaterials might pose risks to aquatic organisms or other wildlife if released into the environment. These impacts can vary greatly depending on the specific Nano product, its size, shape, chemical composition, and how it is manufactured and used. Resource depletion, while a potential impact, is often less prominent compared to human health and Eco toxicity for many Nano products. However, the energy required for manufacturing and the use of certain raw materials can still contribute to environmental burdens.

The comparative analysis thus suggested here shall highlight the potential of both products from use and efficiency point of view and shall also compare life cycle based environmental impacts of both conventional and nano products for policy and decision making in order to make products human and environment friendly.

F. No. IA-L-11011/Pt/2020-IA.III (E-145032)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi – 110003

Dated: 25th March, 2025

OFFICE MEMORANDUM

Subject: O.A. No. 66 of 2017 titled Vallapureddy Gari Govardhan Reddy & Ors. vs. Union of India & Ors pending before the National Green Tribunal, Chennai – reg;

This is in reference to the above referred matter O.A. No. 66 of 2017 titled Vallapureddy Gari Govardhan Reddy & Ors. v. Union of India & Ors pending before the NGT, Chennai, wherein the Hon'ble court vide order dated 12.05.2022 (enclosed herewith), *inter-alia*, directed MoEF&CC to carry out a study on whether Nano industries including the Precipitated Calcium Carbonate require prior EC.

2. As directed by the Hon'ble NGT, the MoEF&CC has entrusted CSIR-NEERI for Conducting Risk-Based Life Cycle Assessment of the Conventional and Nano Precipitated Calcium Carbonate Industry Midpoint Analysis Based Approach. The Contract Agreement with CSIR-NEERI was signed on 09/09/2025 providing a time-period of 24 months for conducting the study with the following terms of reference:

- a. *Study the process flow diagrams of PCC, Nano PCC and inorganic chemical industry analysing raw materials, transportation, energy use, emissions, etc., in the concerned industry.*
- b. *Obtain Lifecycle Inventory (LCI) to detail inputs and outputs of each activity in the product lifecycle, essential for LCA.*
- c. *Address data gaps in the inventory by incorporating information from existing literature, reports, or expert judgments.*
- d. *Perform LCA for PCC and Nano PCC using the GaBi tool, conducting Midpoint analysis as part of the ISO 14040 & ISO 14044 standards.*
- e. *Extend the LCA to encompass other inorganic chemicals (Category A), considering both conventional and nanoproducts, to establish a baseline understanding of their environmental footprints.*
- f. *Compare and contrast conventional and Nano-industry processes, evaluating midpoint impacts derived from the LCA analysis to discern potential environmental advantages or disadvantages.*
- g. *Interpret the results of the LCA, drawing meaningful insights and formulating practical recommendations based on the observed environmental implications.*

- h. *Additionally, perform an emission profile study within a 10 km radius of the Nano PCC industry, utilizing sophisticated analytical techniques to quantify Nano calcium levels, Establish a baseline for background concentration assessment.*
- i. *Carry out the Lagrangian Particle Dispersion (LPD) Modeling as an alternative method to explore nanoparticle dispersion behaviour in the atmosphere, providing insights into the dynamics and evaluating the impact of fugitive emissions.*

3. Meanwhile, the Hon'ble NGT vide order dated 27/02/2025 (enclosed herewith) *inter-alia*, made the following directions,

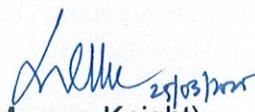
"...While a thorough study is being entrusted to NEERI, there should be some kind of regulations for those industries involving Nano Technology, for which, the MoEF&CC and the Central Pollution Control Board (CPCB) to join hands and issue guidelines pending the detailed study.

7. As already the pollution that may be caused in this regard is highlighted in the Original Application, we only direct the MoEF&CC and the CPCB to take a serious view on this matter, expedite the process and issue appropriate guidelines in consultation with the scientists of the APPCB before the NEERI report comes."

4. In this regard, the undersigned has been directed to request you to provide appropriate draft guidelines to the Ministry for the regulation of those industries involving Nano Technology till the report of CSIR-NEERI comes out, thereby ensuring the compliance of the orders of the Hon'ble NGT.

5. This is issued with the approval of the Competent Authority.

Encl: as above


 (Dr. J D Marcus Knight)
 Scientist E

To,

1. Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032. Email: mscb.cpcb@nic.in
2. Member Secretary, Andhra Pradesh Pollution Control Board, Plot.No.1, Prasanthi Nagar, Podalakur Road, Nellore, SPSR Nellore District-524004. Email: ronlr-ee1@appcb.gov.in

Copy for information to;

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2. Sr. PS to JS(RA)
3. Guard File