

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is entered on the day of 03rd of June, 2018 at New Delhi.

Between

The Ministry of Environment, Forest and Climate Change, Government of India, Indira Paryavaran Bhavan, New Delhi 110003 (hereinafter referred to as "MoEF&CC") which expression shall where the context so admits include its successors and permitted assigns) of one part.

And

The Energy and Resources Institute, Darbari Seth Block, IHC Complex, Lodhi road, New Delhi - 110 003 registered as a society under the Societies Registration Act, 1860 (hereinafter referred to as "TERI" which expression and shall unless otherwise provided include its representatives, successors and assigns) of the second part.

Whereas both the parties agree to the following terms and conditions:

Article 1 – Background

India has been witnessing rapid transformation due to economic growth and development over the last two decades. This has alleviated poverty, increased migration to cities and towns for exploring economic opportunities, and demand for various goods and services. The implications are increased pressure on natural resources and the environment. Growing population, rising aspirations of growing middle class, increased per-capita income will further drive demand for resources for the economy in the future.

The need to delink economic growth and human well being from ever-increasing consumption of natural resources and the resultant environmental impacts is now evident in the policy community globally and many countries have initiated policies to facilitate a "decoupling". Despite India's low per capita consumption of materials (like biomass, fossil fuel, minerals and metals), aggregate consumption of material in the country is among the highest in the world. In 2009, India was the third largest consumer of material (4.8 billion tonnes) after China (21.5 billion tonnes) and USA (6.1 billion tonnes). India accounted for 7.1 percent of global material consumption; 10.6 percent of global biomass consumption; 6.6 percent of global fossil fuel consumption; 5.8 percent of global

non-metal mineral consumption; and 2.3 percent of global metal consumption. Between 2010 and 2020, India's demand for various materials is estimated to increase from US \$1.4 trillion to US \$5 trillion.

Meeting this demand for materials will be a daunting challenge. Apart from limited endowments of many materials, many of the country's resources are locked up in ecologically or socially sensitive areas. India is already a net importer of resources, dominated by fossil fuel and metals. Further import dependence will increase the vulnerability of the economy to global geo-political and economic risks apart from adversely affecting the trade balance.

Despite an improvement over the last three decades, India's material productivity remains lower than the global average. India's resource productivity during 1980 and 2009 may have improved by more than three times the global average of 27%, yet it was less than the rates achieved by countries such as China (118%) and Germany (139%). The rate of recycling in India is also low (20-25%) when compared to the other developing and developed countries like Europe where the rate of recycling is over 70 percent. Further, material recovery at the end of life stage is concentrated in the informal sector, which has implications on the scale of operation, technology choice and product quality of the recovered materials.

Article 2: Supporting the 'Resource Efficiency' Cell & objectives

Improving the efficiency of resource use will be key for India to sustain high growth and enhanced wellbeing. Resource efficiency encompasses a wide variety of technology, process, policy and institutional issues along the various stages (design, manufacturing, refurbishment, and end-of-life) of product life cycles, including the three 'R's - reduce, reuse, and recycle, and across multiple resource groups, thus necessitating a coordinated approach to strategy and action that brings together different stakeholders across multiple sectors. The Ministry of Environment Forest and Climate Change (MoEFCC) is uniquely positioned to take the resource efficiency agenda forward through its reach and influence over a wide range of stakeholders and different Ministries, leveraging the Environment (Protection) Act and Rules made thereunder, which is the major legislative instrument currently available for driving resource use efficiency. The second part will support the first part in meeting its objectives as under:

Key objectives of the Cell:-

- (i) Provide a platform to mainstream resource efficiency in public policy;
- (ii) Facilitate coordinated thinking among the different line ministries that are relevant for promoting resource efficiency in the use of materials in the country, such as Mining, Steel, Road Transport, Highways and Shipping, Petroleum & Natural Gas, Heavy Industry, Micro, Small and Medium Enterprises, Information Technology, Consumer Affairs, Housing and

Urban Affairs, New and Renewable Energy, and Science and Technology. It would ensure a “systems“ thinking based on materials, products and processes; and

- (iii) Enable the preparation of an overarching resource efficiency policy for India as well as coordinated sectoral policies and regulatory mechanisms and identify opportunities for R&D and public-private partnerships

Article 3: TERI’s intellectual and administrative role in supporting the ‘Resource Efficiency’ Cell

- (i) Prioritize sectors/resources where efficiency improvements can have a significant impact on resource use given current or projected market conditions and level of technological development, and also vulnerabilities in terms of resource security. Sectors that are likely to be important include industrial manufacturing, electronics and construction sectors and various waste streams (e-waste, plastic waste and packaging waste etc.) covering a range of material such as various metals (e.g. Aluminium, Lithium, rare earths) and their alloys, plastics etc. Some of these areas, such as automobiles, are relatively better studied from the perspective of resource efficiency in the value chain, as compared to others. The list of priority sectors will be periodically reviewed and updated.
- (ii) Provide intellectual support to policy making on resource efficiency in prioritized sectors/resources in relation to materials, products and processes through analysis of data and issues related to the economic, technological, institutional, and policy environment in India by undertaking/commissioning relevant studies, depending on the existing state of knowledge;
- (iii) Undertake assessments in the short run on the status and resource efficiency opportunities in key economic sectors like, electric mobility, renewable energy (e.g. solar PVs), packaging, marine resources, as well as materials like, iron and steel, copper, plastics, agri residue, lithium and permanent magnets, etc.
- (iv) Undertake presentations and reports, and recommendations to MoEFCC and to stakeholder Ministries and Departments through mechanisms that may be created by MoEFCC, or on the request of a Ministry/Department;
- (v) On behalf of the MoEFCC, undertake consultation with stakeholders including Industry Associations and experts to seek inputs, disseminate policies and business opportunities, and facilitate B2B engagement;
- (vi) Develop a website which would facilitate the dissemination of documents and information generated by the RE cell as well as serve as an online repository of best practices (in terms of policies, processes and technologies) across the key sectors; and

(vii) Support educational and vocational training to targeted groups across the life-cycle stages of products.

Article 4 – Mutual engagement will include:

- (i) MoEF&CC and TERI will jointly identify the projects of mutual interest and discuss the same before proceeding further on any specific projects.
- (ii) Both parties shall cooperate with each other on project-to-project basis for which detailed financial and other terms and conditions will be entered into by both the parties.
- (iii) Both parties will jointly identify financial resources and facilitate financing of mutually identified projects.
- (iv) Although, there may be endeavour to work together, however, the parties shall be free to work independently with other organizations as well, in the areas of mutual cooperation as identified in Para 1 above.
- (v) No party to this MoU shall incur any liability, financial or otherwise, on behalf of the other party, without prior written consent of the other party.
- (vi) MoEF&CC and TERI may decide mutually all other matters and projects that have not been specially mentioned or provided in this MoU.

Article 5 – Validity

This MoU shall be valid for five years from the date of its execution. However, agreements concluded under this MoU shall be valid till end of contracting obligations and responsibilities of the concerned parties. The validity of this MoU can be further extended with the mutual consent of the parties in writing.

Article 6 - Termination

This MoU can be terminated by either party by serving one month's notice in writing, without assigning any reason, subject to completion of assignments in hand.

Article 7 – Dispute Resolution

Any dispute about the interpretation or implementation or implementation of this MoU will be resolved through consultation between the parties.

Article 8 - Governing Law

Laws of India shall govern this MoU.

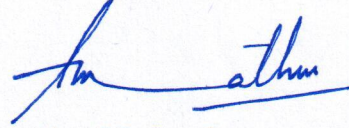
In witness thereof, the undersigned duly authorized thereto have signed this Memorandum of Understanding.



[C K Mishra]

Secretary

Ministry of Environment, Forest and Climate
Change (MoEF&CC), GoI, New Delhi

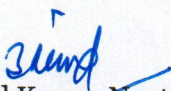


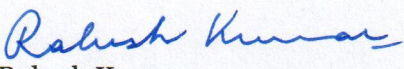
[Dr. Ajay Mathur]

Director General

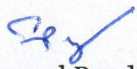
TERI - The Energy and Resources Institute,
New Delhi

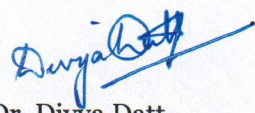
WITNESSED BY:

- 
1. Arvind Kumar Nautiyal
Director (SICOM), MoEF&CC
Jal Wing, 6th Floor, Indira Paryavaran
Bhawan, Jor Bag Road, Aliganj, New Delhi
110 003,

- 
2. Rakesh Kumar
Director (IC&SD), MoEF&CC
Jal Wing, 2nd Floor, Indira Paryavaran
Bhawan, Jor Bag Road, Aliganj, New Delhi
110 003,

WITNESSED BY:

- 
1. Dr. Suneel Pandey,
Director, Environment and Waste
Management Division,
The Energy and Resources Institute
(TERI) 6C, Darbari Seth Block, India
Habitat Center Complex, Lodhi Road,
New Delhi, Delhi 110003

- 
2. Dr. Divya Datt,
Director, Integrated Policy Analysis
Programme
The Energy and Resources Institute
(TERI) 6C, Darbari Seth Block, India
Habitat Center Complex, Lodhi
Road, New Delhi, Delhi 110003