

Promoting Alternate Fuel Utilization in India



SUMMARY OF ROUNDTABLE DISCUSSIONS

Draft Verison 1.0

JULY 2014



Confederation of Indian Industry



Confederation of Indian Industry
CII-Sohrabji Godrej Green Business Centre



Introduction

Confederation of Indian Industry (CII) in association with Cement Manufacturers Association (CMA) is working on an initiative to increase use of “Alternative Fuels & Raw materials (AFR)” in Indian Cement Industry. As a part of the initiative CII is working on the project “Facilitate Development of Framework to Promote Alternate Fuel Utilization in India” and is partially supported by Shakti Sustainable Energy Foundation (SSEF), a part of Climate Works Foundation.

The main objective of this project is to accelerate AFR initiatives and increasing usage of AFR in the Indian Cement Industry through capacity building, data availability and facilitating exchange of waste by working closely with Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs), thereby reducing environmental impacts of waste generation and raw material usage.

We have conducted round table discussions in eight cement intensive states namely Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Andhra Pradesh, Chhattisgarh, Tamil Nadu and Karnataka. (List of participants attached as annexure 1)

The objective of the Roundtable discussions is to bring waste generators, TSDF, CETP, suppliers and cement plants together in presence of State PCB officials & other stakeholders. This will help in sharing of information on waste distribution and availability, trail runs for co-processing in the state, difficulties with inter-state transfer of hazardous waste, etc.

LIST OF AFR ROUND TABLE DISCUSSIONS HAPPENED IN VARIOUS STATES

S no	State	Date
1	Rajasthan	27 th December 2013
2	Gujarat	21 st January 2014
3	Maharashtra	28 th January 2014
4	Madhya Pradesh	29 th January 2014
5	Andhra Pradesh	25 th February 2014
6	Chhattisgarh	28 th February 2014
7	Tamil Nadu	18 th March 2014
8	Karnataka	28 th March 2014



At this moment we want to convey our special thanks to the Pollution control board officials who generously shared their expertise and time in the round table discussions.

Dr D N Pandey	Member Secretary	Rajasthan State Pollution Control Board
Mr Rajeev Kumar Mital	Member Secretary	Maharashtra Pollution Control Board
Dr N P Shukla	Chairman	Madhya Pradesh Pollution Control Board
Mr Sanjay Kumar	Member Secretary	Andhra Pradesh Pollution Control Board
Dr Ayi Vaman N Acharya	Chairman	Karnataka State Pollution Control Board

We would like to take this opportunity to thank the Expert group, which consists of PCB officials from all the 8 states. They provide us the technical expertise and guidance required for accelerating the AFR utilization in Indian Industries. We also thank you for the detailed technical presentations made during the round table discussions.

Dr Vijai Kumar Singhal	SEE	Rajasthan State Pollution control board
Dr K Karthikeyan	JCEE	Tamil Nadu Pollution Control Board
Mr R P Tiwari	SE	Chhattisgarh Environmental Conservation Board
Mr A RamChand	CEE	Andhra Pradesh Pollution Control Board
Mr V M Motghare	Joint Director	Maharashtra Pollution Control Board
Mr PS Bundela	Regional Officer	Madya Pradesh Pollution Control Board
Mr S Venkatesh Shekar	SEO	Karnataka State Pollution Control Board
Mr J K Vyas	SEE	Gujarat Pollution Control Board

We take this opportunity to thank our supporter of the project Shakti Sustainable Energy Foundation (SSEF). Thank you for your continued trust in us.

We would like to thank our Chairman **Mr Ulhas V Parlikar**, who led the AFR project in fore front and especially guiding us throughout the project. Thank you Sir

Finally we thank all stake holders, namely cement plants, waste generators, Suppliers, TSDF's, CETP's, Foundations for their participation and valuable contribution to AFR.

This report is the summary of round table discussion happened in eight states in the presence of state pollution control board official to discuss the opportunities and barriers in promoting co processing.

We strongly believe that, this report on round table discussion will create an impact in increasing alternate fuel utilization in India.

We look forward to your continued support on promoting AFR utilization in India.



QUANTITY OF HAZARDOUS WASTE IN EIGHT STATES*

S no	State	Waste generators (No)	Waste Generation Quantity (MT/Annum)*
1	Rajasthan	545	7,85,192
2	Gujarat	7751	17,92,787
3	Maharashtra	5511	18,05,292
4	Madhya Pradesh	1346	4,50,529
5	Andhra Pradesh	3222	10,86,740
6	Chhattisgarh	193	2,90,000
7	Tamil Nadu	3067	4,81,759
8	Karnataka	3512	2,45,092
Total		25147	69,37,391

1. Inventory of Hazardous Waste Generating Units in Rajasthan & Action Taken Report (Up to 30.6.2013)
2. National Inventory of Hazardous Wastes Generating Industries & Hazardous Waste Management in India February 2009 Central Pollution Control Board Hazardous Waste Management Division, Delhi.
3. Region wise Inventory of Hazardous Waste Generations as on 31st March 2012, MPCB Website
4. Inventory of Hazardous Waste Generated in Madhya Pradesh, 2010-2011
5. Presentation on Waste Availability for Co processing & Initiatives taken by APPCB to promote Waste Utilization, APPCB (As per April 2010 Data)
6. Presentation by CECB, 28th Feb 2014
7. List of Hazardous Waste Generating units in Tamilnadu as on 31.03.2014, March 18th 2014
8. Waste Availability for Co processing & Initiatives taken by KSPCB to promote Waste Utilization (As of Feb 2014)



KEY RECOMMENDATIONS FROM ROUNDTABLE DISCUSSIONS

1. Support required from policy makers for further enhancing co processing

- a. Time requirement for conducting the trial run, approval process (typically 8-12 months) is not encouraging the co processing.
- b. The regulation on Hazardous Wastes (Management, Handling and Trans boundary Movement) doesn't encourage transfer of hazardous waste from one State to another State. A one-time NOC or at least 2-year valid NOC to be provided to Generators and Cement- Kilns for inter-state boundary movement of HW.
- c. It is recommended to have an online model of approval system for co processing AFR, to fasten up the co processing initiatives in the country. A consistent and common methodology should be developed for the permitting process across all States in the country. Detailed information should be made available on the portal state wise, like
 - i. Online approval for co-processing AFR
 - ii. Online approval for transportation of Hazardous waste
 - iii. List of waste generators and co-processors (Including contact details)
 - iv. List of materials approved for co-processing
 - v. List of approved waste transporter
 - vi. Physical and chemical properties of waste
 - vii. Procedures to be followed for co-processing approvals from PCB
 - viii. Procedure to be followed for transporting Hazardous Waste
- d. R&D cell can be set up in every state PCB especially for testing different types of waste. This cell will hold the power for Declaring / allocating wastes for co processing / incineration / land fill based on the environmental impact.
- e. To reduce the approval time, authorization power to State PCB instead of CPCB for wastes that has been already cleared and trial conducted.



- f. Waste mapping like geographical mapping can be done to identify the fuel availability for the cement plants and will also help the waste generators to dispose their wastes.
 - g. As Co processing results in conservation of natural resources like coal, it should be treated similar to electrical energy conservation activities by agencies like MNRE.
 - h. Notification for banning of land filling of wastes if cement plants are available within 100 km radius of waste generation like fly ash notification can be released to promote co-processing
2. The government has to establish a financial model that is viable for both the waste processing units as well as cement plants.
 3. A common pre processing facility in every state has to be developed, including all stake holders for promoting AFR utilization in India.
 - a. During the Roundtable discussion Karnataka State PCB also stressed this point of common preprocessing facility, to convert waste in to fuel.
 - b. Existing TSDF's can become collection centers, which can pre process the different types of wastes and can supply to Co-processing units.
 4. Municipal solid waste should be segregated at source and sent to waste processing industries or pre processing units directly.
 - a. Public private partnerships can be established between state governments and cement industries to collect, segregate and process municipal solid waste.
 - b. Waste collection and handling model of GOA city corporation can be replicated by other cities for effective handling of MSW
 5. Formation of expert group representing waste generators, cement plants, preprocessing facilities and other stake holders to promote Co-processing.
 6. **Pre- qualification criteria for cement plant to Co-Process**
 - A cement plant which fulfills the co-processing prequalification criteria should be issued a permit to co-process all types of waste, as long as it remains within maximum permissible emission levels.



- Each cement plant which fulfills the criteria's defined below should be "certified" and must be allowed to receive permit to co-process all types of wastes.
 - a. Online continuous emissions monitoring system, connected to the relevant PCB or CPCB server to monitor, record and demonstrate, to the stake holders and authorities, that there is no significant impact on the emissions from the cement plant while undertaking co-processing operation.
 - b. In order to ensure proper traceability of wastes taken up for co-processing, each plant have a dedicated laboratory for wastes profile identification, acceptance procedures with comprehensive program for quality assurance (QA) and quality control (QC).
 - c. Health and safety structure in place in the plant to identify, evaluate, monitor and control potential health hazards, implement Emergency Response Plan for ensuring appropriate measures to handle possible on-site emergencies and coordinate off-site response, etc.
 - d. Half yearly Offline monitoring of Heavy Metals and Dioxin / Furan emissions from the kiln stack of the cement plant undertaking co-processing to monitor and demonstrate that the same are not impacted significantly due to the co-processing operation.
 - e. Properly designed Storage shed with impervious floor and appropriate fire fighting facility for storing waste materials safely in the plant.
 - f. Appropriately designed feeding system for feeding AFR in the kiln.
 - g. Yearly conduct of a plant specific Co-processing and Pre-processing audit by an independent expert to identify and correct the gaps.
 - h. So far 70 + trial runs are already conducted in the country for different waste streams and got approved from PCB. All cement plants which meets the qualification should be allowed to co-process the same wastes without any further trial runs.
- Financial incentives/Recognition/tax exemptions for cement plant can be provided once they exceed certain level of AFR substitution
- Specific trial run should be required only for wastes containing critical hazardous constituents such as POPs.



- For cement plants not meeting the above criteria should be permitted to obtain the co-processing permit as per the procedure defined in the CPCB guidelines on co processing of 2010.

The above recommendations will facilitate better solutions for managing wastes from society and industry and will assure smooth, safe and environment friendly co-processing operation at cement plants. This approach will also help in our national mission on GHG reduction and intensifying energy efficiency.

Draft for Comments

**ANNEXURE -1****LIST OF PARTICIPANTS IN AFR ROUND TABLE DISCUSSIONS**

ROUND TABLE DISCUSSION AT JAIPUR, RAJASTHAN			
S.no	Name	Designation	Company
1	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geocycle India	
2	Dr D N Pandey	Member Secretary,	Rajasthan State Pollution control board.
3	Dr Vijai Kumar Singhal	Senior Environmental Engineer	Rajasthan State Pollution control board.
4	Ms Neela Narasimhan	Deputy Manager - AFR	ACC
5	Mr Nitin Nalavde	Mgr – AFR	ACC
6	Mr Mukul Garg	Manager - AFR	Ambuja Cement
7	Mr Manoj Agarwal	Area Manager	Ambuja Cement
8	Mr Satish Saini	AGM - Environment	Ambuja Cement
9	Mr Sandeep Kapoor	DGM - AFR (Delhi Office)	Ambuja Cement
10	Mr S S Gupta	(Vice President - Production & QC)	Binani Cement
11	Dr Harikrushna Patnaik	GM - Environment	Cairn India Ltd
12	Dr Bhoma Ram Jat	Manager – Environment	Cairn India Ltd
13	Mr A K Sisodia	DGM (Production)	JK Cement works
14	Mr Dinesh Kumar	GM (Production)	JK Cement works
15	Mr N S Anjana	Asst. Manager	JK Cement works
16	Mr Himanshu Singh	Engineer	Shriram cement works
17	Mr Akash Joshi	Engineer	Shriram cement works
18	Mr A L Sharma	Manager - MSW Processing Plant	Ultra tech cement
19	Mr Kuldeep Singh	Manager - Projects	Ultra tech cement
20	Mr Pravin Pandya	Section Head (Environment)	Ultra tech cement
21	Mr Mahesh Gupta	GM – Production	Mangalam cement
22	Mr Sorabh Singhal	Student	Cardiff University
23	Mr P V Kiran Ananth	Sr Counsellor	CII GBC
24	Mr K MuraliKrishnan	Sr Counsellor	CII GBC
25	Ms A Sowjanya	Executive officer	CII GBC
26	Mr V Kannan	Counsellor	CII GBC



ROUND TABLE DISCUSSION AT AHMEDABAD, GUJARAT

S.no	Name	Designation	Company
1	Mr D J Yadav	Chairman - CII Gujarat energy and Environment panel & Director-	Arvind Accel Limited
2	Mr M G Kagzi	Deputy Environmental Engineer	Gujarat pollution control board
3	Mr K S Venkatagiri	Principal Counsellor	CII Godrej GBC
4	Mr Shailesh Patwari	Chairman	Naroda Enviro Projects Ltd
5	Mr Kartik Andharia	Sr. Officer QA	Excel Industries Limited
6	Mr Amrut Rathod	Marketing Executives	Excel Industries Limited
7	Mr Rajender Datrika	Asst. Manager	Vapi Waste & Effluent Management Company Limited
8	Mr Balveer Singh	EXECUTIVE-EHS	SABERO ORGANICS GUJARAT LIMITED
9	Ms Shreedevi	Proprietor	H L Enterprise
10	Ms Phani Trivedi	Founder	Waste Pro
11	Mr RAJIV Goel	PROJECT MANAGER	JAYPEE GUJARAT CEMENT PLANT
12	Mr Sandeep Patel	CEO	NEPRA Resource Management Pvt. Ltd
13	Mr Dhruvin Patel	Director	Lets recycle
14	Mr Biplab Paul	Director	NEPRA Resource Management Pvt. Ltd
15	Mr H L Jain	Advisor Marketing and Sales	Hi-Bond Cement
16	Mr Vipul Chaturvedi Managing Director	Managing Director	Npbiologics
17	Mr B U Suryam	DGM	Ultratech Cement
18	Mr Milan Pandya	Manager	ambuja cement
19	Mr Manish Pandya Manager	Manager	ambuja cement
20	Mr Madan Prakash General Manager	General manager	Sanghi cement
21	Mr Viral Shah Manager	Manager	Tata Motors
22	Mr M G Jadeja	Sr General Manager	Hi-Bond Cement
23	Mr Keyur Vaghasiya	Asst Engineer	GPCB
24	Mr Dhaval Meuva	Asst Engineer	GPCB
25	Mr V Kannan	Counsellor	CII GBC



ROUND TABLE DISCUSSION AT MUMBAI, MAHARASHTRA			
S.no	Name	Designation	Company
1	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geocycle India	
2	Mr Rajeev Kumar Mital	Member Secretary,	Maharashtra Pollution control board.
3	Mr V M Motghare	Senior Environmental Engineer	Maharashtra Pollution control board.
4	Mr Sabyasachi Ghosh	Senior Manager - EHS	Asian Paints Ltd
5	Mr Pradeep More	Manager - EHS	Asian Paints Ltd
6	Mr Masum Ahmed	Manager - EHS	Asian Paints Ltd
7	Mr Rajeev Kulkarni	Commercial EHS Manager	Cadbury India Ltd
8	Mr Prasad S Joshi	Zonal Sustainability Head	Hindustan Coca-Cola Beverages Pvt. Ltd
9	Mr Gopi Raman	System Manager - Wada Plant	Hindustan Coca-Cola Beverages Pvt. Ltd
10	Ms Nikita Narkar	Environment Manager	Hindustan Coca-Cola Beverages Pvt. Ltd
11	Ms Vaishali Dangale	Environment Team Leader - Pune Plant	Hindustan Coca-Cola Beverages Pvt. Ltd
12	Mr G M Wagh	HEAD - Safety, Health & Environment	Mahindra & Mahindra
13	Mr Nitin Vaidya	General Manager	Mahindra & Mahindra Ltd
14	Mr Vinaay Bedekar	Manager	Mahindra & Mahindra Ltd
15	Mr Vikrant Aher	Assist Manager	Mahindra & Mahindra Ltd
16	Mr Ramesh Deshmukh	Sr Manager	Mattel Toys India Pvt. Ltd.
17	Mr Dinkar N Adhav	Chief Operating Officer	Mumbai Waste Management Ltd, Taloja - (RAMKY Group)
18	Mr Somnath Malgar	(MBD Head)	Mumbai Waste Management Ltd, Taloja - (RAMKY Group)
19	Mr BK Modi	Asst. VP	UltraTech Cement Ltd
20	Mr Jalendu Desai	Dy Manager	UltraTech Cement Ltd
21	Mr Subodh Kumar Singh	AGM-Environment	Volkswagen India Pvt. Ltd.
22	Mr Jayesh Sule	Manager External Affair	Volkswagen India Pvt. Ltd.
23	Ms Sharmistha	Chief Manager –Business Development	ACC



24	Mr Joshi Vivek	AGM	TATA Motors Pune
25	Mr Umesh Joshi	Member	CII Environment Panel Western Region
26	Dr N R Ninka	General Manager Tech	TTCWMA
27	Mr Sreevatsan	Site Manager	TTCWMA
28	Mr Sambhaji Patade	Manager EHS	3M India Ltd
29	Mr K MuraliKrishnan	Sr Counsellor	CII GBC
30	Ms A Sowjanya	Executive officer	CII GBC

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ROUND TABLE DISCUSSION AT BHOPAL, MADHYA PRADESH			
S.no	Name	Designation	Company
1	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geo Cycle India	ACC Ltd
2	Dr N P Shukla	Chairman	Madhya Pradesh pollution control Board
3	Mr P S Bundela	Regional Officer	Madhya Pradesh pollution control Board
4	Mr R K Shrivastava	Superintending Engineer	Madhya Pradesh pollution control Board
5	Mr V K Ahirwar	Superintending Engineer	Madhya Pradesh pollution control Board
6	Mr D K Kohli	Managing Director	D K Insulation Industries & past Chairman, CII Bhopal
7	Mr Sunil Vyas	AFR cell	Ultratech Cement Ltd.
8	Mr Sohail	AFR cell	Ultratech cement
9	Mr SR Saini	AVP (TPP)	Birla cement
10	Mr R S Sarupria	VP (Environment)	Jaypee cement
11	Mr R S Soni	VP (Production)	Jaypee cement
12	Prof. Sameer Sood	Professor	NIFT
13	Ms Leena	Director	Prabuddha ventures
14	Mr Sunil Gupta		
15	Mr Vivek Chaturvedi		Siddha shri Stone crushing
16	Mr Sandeep sharma		ACC
17	Dr Praveen Kothari		MPPCB
18	Mr Sahil Bohra		ACC
19	Mr S.I ALI	Incharge	Sorthate society
20	Ms Sonal		Dk Insulations
21	Mr K Muralikrishnan	Sr Counsellor	CII-GBC
22	Mr V Kannan	Counsellor	CII-GBC
23	Ms A Sowjanya	Executive officer	CII-GBC
24	Mr Sunil Sharma	Executive officer	CII- Bhopal



ROUND TABLE DISCUSSION AT HYDERABAD, ANDHRA PRADESH			
S.no	Name	Designation	Company
1	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geo Cycle India	ACC Ltd
2	Mr Sanjay Kumar	Member Secretary	Andhra Pradesh pollution control Board
3	Mr A Ramchand	Chief Environment Engineer	Andhra Pradesh pollution control Board
4	Mr K S Venkatagiri	Dy Executive Director	CII Godrej GBC
5	Mr M Narayana Reddy	President	Bulk Drug Manufacturer's Association, AP
6	Mr S Purushotham	Manager EHS	Asian Paints Ltd
7	Mr Rajendra Reddy	Sr Manager	Asian Paints Ltd
8	Mr K S R Naidu	Director Technical	Clair Engineers Pvt Ltd
9	Mr Arvind K Sharma	AGM (Management Systems)	JSW Cement Ltd
10	Mr Ch S Nageswara Rao	Plant Head	Kesoram Cement
11	Mr B Suresh	Sr Manager (Env)	My Home industries Ltd
12	Mr D Kameswara Rao	Sr DGM	Penna Cements Ind Ltd
13	Mr Sunil Deshmukh	VP (Operations)	Piramal Enterprises Ltd
14	Mr K Seshagiri Rao	Head NWM	Ramky Enviro Engineers Ltd
15	Mr Tirupathi Reddy	Business Head	Ramky Enviro Engineers Ltd
16	Mr Sivanaga Madhu	Business Head	Ramky Enviro Engineers Ltd
17	Mr G Siva Ram Prasad	AGM (Process)	The KCP Limited
18	Mr P Madhav Rao	GM (Procurement, RM&PM)	Vasavadatta Cement
19	Mr Gopi Ranganathan	Sr GM (Tech)	Zuari Cement
20	Mr Suresh Deolalkar	Consultant	
21	Mr Anand Vinay	Sr Engineer (Process)	Clair Engineers Pvt Ltd
22	Mr C Balanagalah	Unit Head	Rain Cements Ltd
23	Mr M Murumkar	Sr General Manager	Geocycle India – ACC Ltd
24	Mr V V B Reddy		J S W Cement
25	Mr R Nagaraju	Unit Head Penna Cements Ltd	
26	Mr Ashok Kumar	Head EHS	Piramal Health Care Ltd
27	Mr Malaji Nagarjuna E	E (Hazardous Waste Management)	APPCB
28	Mr R. Sreeramulu	Senior Environmental Engineer	APPCB
29	Mr PVBLG Sastry	Environmental Engineer	APPCB
30	Mr M.V.N.Prasad	Senior Environmental Engineer	APPCB



31	Mr Ramesh Gupta	Environmental Engineer	APPCB
32	Mr C.Krishna Moorthy	Senior Environmental Engineer	APPCB
33	Mr M V Balasubramanyam	Environmental Engineer	APPCB
34	Mrs T Kavitha	DEO - HWM	APPCB
35	Mr S Venkatesh	EE CFO	APPCB
36	Mr R.V.R. Murthy	VP (Operations)	Orient Cement Limited
37	Mr K Muralikrishnan	Sr Counsellor	CII-GBC
38	Mrs A Sowjanya	Executive officer	CII-GBC

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ROUND TABLE DISCUSSION AT RAIPUR, CHHATTISGARH

S.no	Name	Designation	Company
1	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geocycle India	ACC Ltd
2	Mr R P Tiwari	Superintendent Engineer	Chhattisgarh Environment Conservation Board
3	Mr Vinay Kapur	DGM Environment & Energy	ACC Ltd Jamul Cement Works
4	Mr Rajendra Kabra	Sr VP (Works)	Ambuja Cements Ltd
5	Mr G N Jadhao	VP	Ambuja Cements Ltd
6	Mr Lalit Kumar Singhania	Consultant	Indus Technical and Financial Consultants Ltd
7	Mr Ravindra Khamparia	DGM-Optimisation	Lafarge India Pvt Ltd – Arasmeta Cement Works
8	Mr Jeso Johnson	Dy Manager	Industrial Ecology Lafarge India Pvt Ltd – Arasmeta Cement Works
9	Mr Vinay Kale	AGM-Env	Sonadih Cement Plant/Lafarge India Pvt Ltd
10	Mr Krishan Choudhary	Process Manager	Sonadih Cement Plant/Lafarge India Pvt Ltd
11	Mr Tomonash Biswas	Joint Executive President	UltraTech Cement Limited/Hirmi Cement Works
12	Mr P K Panigrahy	General Manager	UltraTech Cement Limited/Hirmi Cement Works
13	Ms Smriti Vishwakarma	Dy Manager	Geo cycle India ACC Limited
14	Mr K Muralikrishnan	Sr Counsellor	CII- Godrej GBC
15	Mrs A Sowjanya	Executive officer	CII- Godrej GBC



ROUND TABLE DISCUSSION AT CHENNAI, TAMILNADU

S.no	Name	Designation	Company
1	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geocycle India	ACC Ltd
2	Mr Jayakumar T C Ethiraju	JCEE	TNPCB
3	Dr K Karthikeyan	JCEE	TNPCB
4	Dr S Selvan	JCEE	TNPCB
5	Ms Vanitha	AE	TNPCB
6	Mr Pratyush U	Manager EHS	Asian Paints
7	Mr R Murugesan	Divisional Manager	Brakes India
8	Mr R Vishnu chandran	Senior Engineer	Brakes India
9	Mr P Dhanapalan	Sr. Manager (Environment)	Chettinad Cement Ariyalur Works
10	Mr N Senthilkumar	Sr. Manager (Quality Assurance)	Chettinad Cement Ariyalur Works
11	Mr A C Karthikaiselvan	Manager (Operations)	Chettinad Cement Ariyalur Works
12	Mr A V Senthilvel	Sr. Manager (Environment)	Chettinad Cement Karikkali Works
13	Mr P Sivakumar	DGM (OPS)	Chettinad Cement Karikkali Works
14	SMR S M Balasubramanian	Zonal Supply chain head	Coca Cola
15	Mr Anil Bajaj	Unit Head	Dalmia cement- Ary Unit
16	Mr Venkatachalam	Sr.Manager	Dalmia cement- Ary Unit
17	Mr Nareshkumar	Dy.Manager	Dalmia cement- Ary Unit
18	Mr P Balaji	Assistant Manager	Dalmia Cement - DPM unit
19	Mr N Venkatasubramaniyan	Sr Engineer	Dalmia Cement - DPM unit
20	Mr P Soundararajan	Unit Head	GEPIL
21	Mr Bala Subramanian	General manager	GEPIL
22	Mr D Siva Gurunathan	Advisor	India cement
23	Mr SP Meyappan	Vice President (Materials)	India cement
24	Mr S Senthilraj	General Manger	India cement
25	Mr Ramadoss	Executive Director	Industrial Waste Management Association
26	Mr Sanjay Chandran	Unit Head	Murugappa group
27	Mr R Gladson Baskaran	Team Leader (EHS & Integrated Utilities)	Saint Gobain Glass India Limited



28	Mr Sridhar	Manager EHS Corporate	Sundaram Fasteners
29	Mr RG Segaran	General Manager	TNWML
30	Mr Uday Kumar	Deputy Manager	TNWML
31	Mr Ashwani Kumar	Vice president(Operations)	CCCL
32	Ms Swathi Y	Deputy Manager	ACC Ltd
33	M Jagadeesan	DGM - Operations	CCCL - Puliur
34	Mr. Milind M Murumkar	Sr. General Manager	Geo Cycle
35	Mr K Muralikrishnan	Sr Counsellor	CII- Godrej GBC
36	Mr V Kannan	Counsellor	CII- Godrej GBC

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ROUND TABLE DISCUSSION AT BANGALORE,KARNATAKA			
S.no	Name	Designation	Company
1	Mr S Chandrasekhar	Managing Director	Bhoruka Power corporation Ltd
2	Dr Ayi Vaman N Acharya	Chairman	KSPCB
3	Mr Vijayakumar	Member Secretary	KSPCB
4	Mr S Venkatesh Shekar	SEO	KSPCB
5	Mr Ulhas V Parlikar	Chairman - CII Initiative on Increasing AFR Usage in Cement Industry & Director - Geo Cycle India	ACC Ltd
6	Mr Sai Golla	ASQ - CMQ/OE, Senior General Manager - Quality, Environment , Health , Safety and Sustainability	3M India Limited
7	Mr Sheril Christopher		3M India Limited
8	Mr Venkatesh	Sr Manager	L &T
9	Mr B Rajesh	EO	KSPCB
10	Mr Kiran Kumar	HOD- Environment	At&S
11	Mr Shantha Kumar	EO	KSPCB
12	Mr Jitander Kumar	Plant Head	Heidelbergcement India Limited
13	Mr M Mohan Rao	GM (Production)	Heidelbergcement India Limited
14	Mr D V Venkateshwararao	Manager - Facilities Planning	Larsen & Toubro Limited
15	Mr P N Jayaram	Asst. Manager - Safety	Larsen & Toubro Limited
16	Mr R Naganna	T officer	Hoylam milk
17	Mr K Prasad	Manager – Environment	Vicat cement
18	Mr Yoggha	Manager	reckitt benckiser india
19	Mr Ramesh	Sr Engineer	Brakes India
20	Ms Nidhi Nair	Dy Manager	ACC
21	Ms Sarika Noopur	Dy Manager	ACC
22	Mr Kannan	Assistant Manager	SAP Labs
23	Mr Biju Kumar	Manager	Ashok Leyland
24	Mr Nagraj H S	Manager EHS	BASF India Ltd
25	Mr Bhaskar		Century
26	Mr Lakshmanan	SEO	KSPCB
27	Ms Viji Karthikeyan	EO	KSPCB



28	Ms Esha Sar	Co-ordinator	CSI WBSCD
29	Mr Ashok AGM GODREJ	AGM	Godrej
30	Mr V V Kulkahu	AGM	Ramco
31	Mr Achar	Sr Manager	BPL
32	Mr Balakrishna	Manager	Rane
33	Mr Veera reddy	Manager	Century Eco Solutions
34	Mr Shiv Sharma	Chief Manager	ACC
35	Mr Ramesh Kumar	SEO	KSPCB
36	Mr K Srinivas	Director	Eco Green
37	Mr K M Lingam	SEO	KSPCB
38	Mr Udaya Kumar	SEO	KSPCB
39	Mr S V Noyoo Raj	Director	BPL
40	Ms Vijayalakshmi	EO	KSPCB
41	Mr G Thirumurthy	EE	CPCB
42	Mr Udaya Kumar	Engineer	Nestle India Limited
43	Mr Abraham Chacko	Sr Manager	Schneider Electric India
44	Mr Dayanand	Assistant Manager	TVS motors
45	Mr Muralidhar	EO	KSPCB
46	Mr K S Venkatagiri	DED	CII-GBC
47	Ms Sowjanya	DD	CII-GBC
48	Mr G Ramesh	Liaison officer	Vasavadatta cement
49	Mr Ali Bin Mohammed	Sr Manager	Vasavadatta cement