National Solid Waste Association of India

SOUTHERN CHAPTER

One day workshop on
Business Opportunities &
Entrepreneurship in Waste Management

Outcome of the Conference

Sponsors: -

TSPCB

Inaugural Session

S Sampath, Chairman of Southern Chapter NSWAI welcomes participants and delegates

Welcome Address by Dr. A.K. Sahu, Founder & President –NSWAI

NSWAI has signed a MOU with Administrative College of India ASCI

NSWAI released the Second edition of Waste Monitor Magazine.

From left to Right: S Sampath, Dr.A.K.Sahu, Prof S Chary, Dr.Prasad Modak, Dr.Lakshmi Raghupathy, Ajay Pradhan, Nithin Despande and Ashish Deosthali

First Session

Chairperson: Mr.Ashish Deosthali, Addl D G, All India Local self Govt

Speakers: -

Dr. Prasad Modak, Exec. President Env Management Centre LLP- "Circulary economy in waste management"

Excerpts from his presentation

- 75% of the world population lives where the consumption of resources exceeds the available resources
- Cradle to Cradle concept introduced a lifecycle concept for resources
- Though we realize that waste management is important, there is no push from a business perspective
- In Japan, new laws were established which incorporated the community into waste management
- Germany realized that having a resource lifecycle and reusing resources is key to stay at the top of any business
- The core features in a Circular Economy are: Avoid, Reduce, Redesign, Repair, Refurbish, Reuse, Recycle, Recover, Remanufacture, in the order of priority

- Coupling - the relation between development and waste produced
- India - high coupling, EU - moderate decoupling, Japan - high decoupling
- Present Circular Economy has incorporated recycling, but not product design
- The heavy investments required do not provide a business motivation for a CE yet

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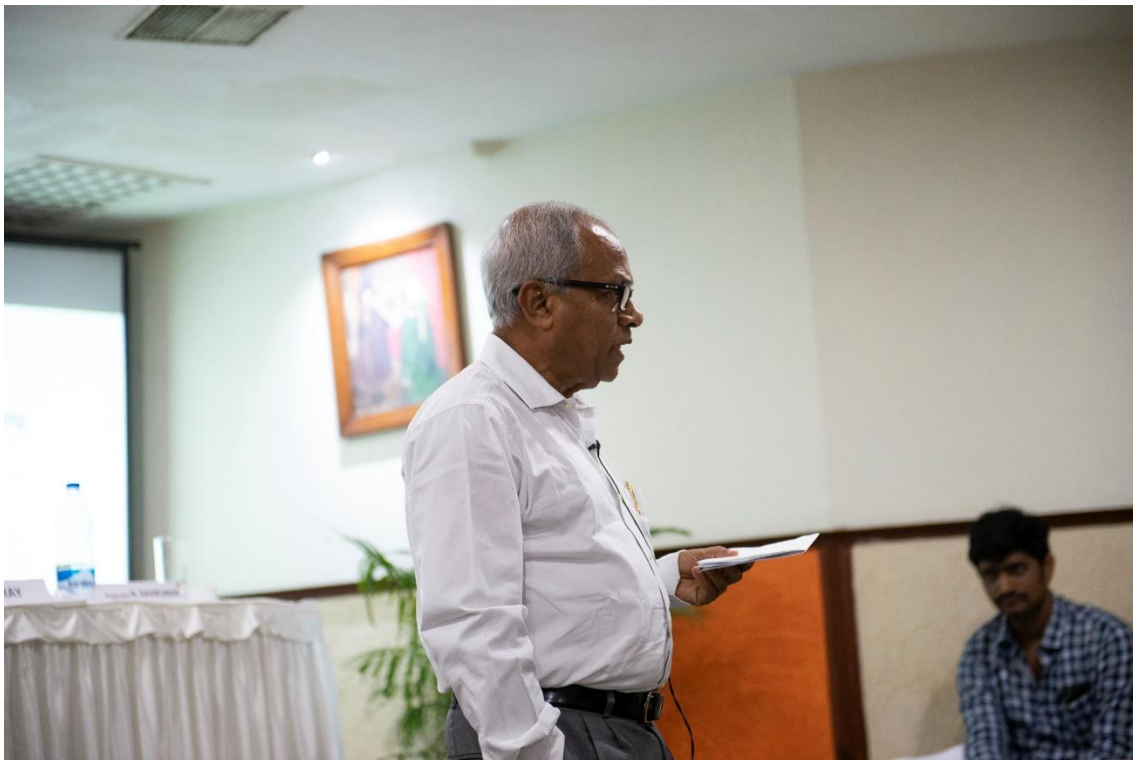
Prof. Srinivas Chary, Director CEEUG & ID, ASCI - "Opportunities in Feacal Recycling"

Dr.Lakshmi Raghupathy-ex-Director, MEOF- GOI – "Ewaste Recycling"

Mr S. K. Ray - Indian Centre For Plastic in the Environment – “Opportunities in plastics waste economy”



Excerpts from his presentation

- Indian Center for Plastic in the Environment Representative
- CE - framework for an economy that is restorative and regenerative in design
- Our material use over time has shifted like, Copper, Gold, Bronze, Glass, Iron, Paper, Plastics
- Our population has increased 3 times in the previous 7 decades, but plastic demand has increased ~200 times
- Methods of separating wastes of different types: Segregated waste is sent to mechanical recycling for upcycling or downcycling. Partially segregated waste is chemically processed or undergoes feed stock recycling, monomerisation is predominant. Mixed waste is used for recovering energy through incineration, pyrolysis or for construction of roads.
- Only 10-15% of plastic is recycled when compared to 50-60% of paper and 80-90% of iron
- Recycling plastic has a high energy saving potential as it is recyclable at a relatively low temperature of 200-250 degree Celsius
- Responsible usage of plastic isn't realized in the society yet

Padmashri Nara Ravikumar, All India VP – DICCI – “Opportunities in Waste management”

Excerpts from his presentation

- His work in DICCI promoted entrepreneurship among ~10,000 dalits in the waste management sector
- Mechanisation of sewage pipe cleaning was initiated after 2 people died due to overflowing of sewage pipes while cleaning them
- Scavengers were given training and taught how to apply for tenders. They received a contract from HMDA and were granted 19 Lakhs for a 24 Lakhs project from SBI
- The ~2000 daily complaints were almost nullified after these initiatives
- 500 meters of sewage pipes are cleaned regardless of whether or not they're blocked
- Delhi Jal Board, Punjab and Varanasi adopted similar strategies

Mr. Bhushan Deshmuk - Variate Pune Waste To Energy Private Limited

Excerpts from his presentation

- Variate Pune Waste To Energy Private Limited
- They produce a compact processor(s) which can process 20 tons up to 800 tons per day.
- The processes in order are: Incineration -> Combustion -> Urea scrubbing -> Boil Drum (Steam turbines) -> Sulphur Recovery -> Back filter -> Activated carbon scrubbing
- A full plan occupies less than 1 acre
- By product fly ash is used for making bricks
- Very low SO2 and NO2 production
- It is an automated plant needing less than 30 workers at a time and can work up to 330/365 days
- It can handle upto 70% moisture content in the waste

Second Session

Chairperson : Dr. A.K. Sahu, President and Founder NSWAI

Mr. S. Sampath., Director -Pyrogreen Energy Pvt Ltd –" Low value plastics waste to fuel / Energy"

Excerpts from his presentation

- Plastics can be used as a fuel for Pyrolysis, incineration and RDF (Reuse Derived Fuel)
- Low micron covers can't be inserted into the extruder, so higher micron bags are encouraged
- Multi-layer packaging is harder to process
- Polymers -> monomers -> hydrocarbons -> heated -> condesed to make oil
- The non condensable gas is used back in the heating process
- This ensures the toxicity in the non condensable gases is nullified
- This oil has a calorific value of about 10,200

Dr.M.Muthukumar, National Research Centre on Meat “Animal waste management”

Excerpts from his presentation

- Slaughter House Waste Management
- ~65% of total animal biomass is non-consumable
- The waste includes organs, blood, urine, water for washing, dung
- The proteins can be extracted from the non-edible parts
- Rendering - removing fats from animal tissue
- Rendering results in Tallow (Liquid part which can be used to make bio diesel)
- At ~70 degrees Celsius, enzyme activation takes place and manure formation is sped up exponentially
- The waste water from slaughter houses is first treated physically to remove any solid components, then is processed biologically (through aerobic and anaerobic processes) and then disinfected

V.Ravishankar, VP, Hitachi Zosen India "Case Study - waste to energy Jabalpur plant"

Excerpts from his presentation

- Hitachi Zosen (Hitz)
- All mixed Municipal solid waste can be converted to produce Electricity
- Waste is held for 5-6 days and then sent to the incinerator to reduce the moisture levels
- The ash is treated, flue gas is removed
- Even low calorific waste can be incinerated without auxiliary fuel
- Any plant should take into account the climate conditions for building, regulatory approvals of the region, competency of local contractors and consider various erection sequences according to the conditions

Prof.G.Murthy Rtd. Andhra University “Organic and food waste to Bio-gas”

Excerpts from his presentation

- Biogas from 75 million cows will meet the kerosene and LPG requirement of about 100 crore people
- Cow dung increases the Carbon content in the soil
- Carbon rich soil has a high water retention capacity
- 1kg of Carbon holds about 40kg of water


S.SAMPATH
V.RAVISHANKAR
Dr.A.K SAHU
Our First Reference Plant in India's – Essel Infra, Jabalpur
Hitz
Hitachi Zosen

Third and Final Session

Chairperson : Mrs Aqeela Siddiqui- VP Samkitec Resources

Mr. T.M Murali, Chairperson FICCI, Telengana "Municipal solid waste to ethanol/ methanol"

Excerpts from his presentation

- Syngas produced from Municipal Solid Waste can be processed to form Ethanol/Gasoline
- Collection and segregation of MSW is a challenge in our Country

Dr.Sanjay Joshi NSWAI Mumbai “Bio Medical Waste Management”

<u>Excerpts from his presentation</u>

- Business Opportunities in Biomedical Waste Management
- Introduction of disposables in hospitals increased illegal practices like inappropriate recycling, reusing, etc.
- Only 10-15% of medical waste is hazardous
- Since this waste is mixed with all other waste, the entire collection is deemed hazardous
- Medical waste management came as far as color coding different types of medical wastes

Mr.Nayani Aditya Madhav, Green Waves “Green Mitti - Upscaling of waste”

Mr. Bhola Mandal, Business Director, Messe Muenchen I Pvt. Ltd. “IFAT international exhibition”

Conclusions:-

- This one day workshop concluded with discussions about various opportunities available in the area of Waste Management for the young and budding entrepreneurs.

- It was emerged that there are various technologies available to convert different type of waste into some valuable products. There is so much untapped potential in this space.

- Every technology has its merit and demerits. This seminar focused on scientific way of material recovery, recycling, usage to make value from the waste adopting right technologies.

- This workshop also focused on various government policies and rules in the area of Waste management.

Key Takeaways:

- Waste management is the need of the hour now
- A Circular economy has to be established to maintain a lifecycle for the resources consumed
- Recyclability has to be considered from the product design stage
- A CE needs to have a motivation from the Business aspect
- The community has to be involved in segregation of waste from the beginning as it is easy for recycling/upcycling/downcycling
- There are processes/machines which can extract energy efficiently from non-segregated waste from dump yards

Concluding Remarks – by Dr. A. K. Sahu

Vote of Thanks – by Mr S. Sampath

Thank you