CAN SMART AND SUSTAINABLE WASTE MANAGEMENT LEAD TO WEALTH CREATION POST COVID 19?

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CHALLENGES DUE TO THE 'NEW NORMAL'

- Personal protective gear is not new to the waste management sector – face mask, gloves, gum boots were essential items
- The present pandemic has made their requirement more stringent
- Physical distancing (social distancing) has brought in the design issues, much higher space requirement and the need to innovate in terms of process, equipment and machinery, positioning of the personnel inside the waste processing plant
- Space and affordability would be the main constraints
- With the present system and level of technologies there will be severe constraints
- Discomfort and additional cost due to additional gear, sanitization measures

MUNICIPAL SOLID WASTE MANAGEMENT

- According to our waste management rules and the actual contracts there is almost no profit margin in collection and transport (stiff competition)
- Similarly, as per SWM rules, 2016, sanitary landfills will not generate methane (no biodegradable waste allowed in landfill), so no revenue from energy
- Small amount can be earned by sale of recyclables if segregation at source is practiced
- The record of actual performance of waste management plants in terms of longevity with efficient management has been dismal
- Count waste processing plants which have been working continuously for more than 10 years with even a reasonable capacity (although the concession agreements are for 15-25 years)

MUNICIPAL SOLID WASTE MANAGEMENT …. CONTD.

- Let us see if there is any way to make money out of waste management projects or at least to make them no loss projects
- Here we must remember what we discussed in the 1st slide – that the incidence of COVID 19 has brought in considerable constraints
- So the design aspects need to be thoroughly looked into for any new plants with the 'new normal'
- For existing plants innovative approach to solve these issues
- Private operators should have detailed discussion with the ULBs and in the interest of the city the ULBs should cooperate
- What can be 'smart' about waste management ? It comprises resilience in design and systemic process, HR and management

- Very important from the point of resource utilization, saving natural resources and saving energy (production of new products need more energy than recycling in a scientific manner), thus reducing carbon footprint
- One of our main concern here is creation of wealth (revenue)
- Sale of recycled C&D waste products has a small positive revenue (GSB, recycled fine aggregates, manufactured sand etc)
- From this point of view other mineral waste resources have benefited from IS 383: 2016 and 2019. Manufactured sand (manufactured fine aggregates) have been approved for: recycled concrete aggregate, Iron slag aggregate, steel slag aggregate, copper slag aggregate and bottom ash from thermal power plant
- Earlier, these did not have identity, standard and legitimate market

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

C & D WASTE MANAGEMENT .... CONTD.

- Detailed legitimate activities pertaining to management of C&D waste and guideline are provided in the C&D Waste Management Rules, 2016 and the Municipal Solid Waste Guidelines (MoH&UA)
- I would like to dwell upon one very important futuristic consideration in these rules - '**deconstruction**'
- This would be the best step for minimizing wastage of material and labor
- Proud moment for India – the 'dry process' and 'wet process' for C&D waste was indigenously developed in Delhi (Burari plant, 2000 TPD) from 2009-2014 by my team in IL&FS Environmental Infrastructure and Services Ltd. 'Wet process' for C&D waste processing was used for the first time on commercial scale across the globe. This was followed by another plant of 500 TPD
- However marketing remains a challenge

BIOMEDICAL WASTE MANAGEMENT

- PPE has suddenly descended on our lives in a big way – from the individual and the households to public spaces and more seriously for the 'Corona Warriors' (health care personnel, sanitation workers and law and order personnel)
- This means a large number and quantity / volume of PPE is getting disposed everyday from the above sources
- Since the use has become universal, it would be necessary to look into and categorize according to the source and probability of infection to minimize unnecessary overloading of the disposal systems
- We have enough regulations (Biomedical waste mgt Rule, 2016, SWM Rules 2016 and the latest Guidelines from CPCB (18th April), BIS is preparing a standard for disposal of PPE
- The basic issue is implementation – with sincerity, honesty and proper understanding

PLASTICS WASTE MANAGEMENT

- Plastics waste has slowly invaded the world like a slow and sure pandemic
- With the COVID 19, there would be increasing quantity (volume is a bigger concern) of plastics (PPE kits, other equipment)
- The most glaring evidence is the marine litter – simply bewildering us
- Lots of data and lots of reports have been churned out but on the ground there is no palpable impact
- **WHY ?**
- Very little has been attempted on ground
- Take up the low hanging fruits first, act fast, the technologies and even bits of market are available

PLASTICS WASTE MANAGEMENT …. … CONTD.

- In September 2018, the Ministry of Housing and Urban Affairs, GoI got prepared and launched a report entitled ‘Guidelines on usage of Refuse Derived Fuel in various industries’
- This was an attempt to utilize about one third of MSW by studying the ground situation and making standards and grades for the RDF produced so that the consumer industries, mainly cement industry could use it and pay for it, which would also benefit the waste management industry
- Thus the waste management industry could make RDF of grade I and II and sell to the cement industry
- Secondly, using some grades of plastics in making black top roads is well known, although very little practiced. CPCB guideline 2006
- The 3rd utilization is conversion into liquid fuel (like LDO). Proper planning must for deciding scale of this conversion and some regional facility for purification through fractionation, appropriate tax regime and marketing

- E-waste management is a complex issue
- It is burgeoning, material use changing fast with change in technology, less and less amount of precious metals
- Competition with the informal sector where there is no consideration for health of the workers and the environment
- Due to these factors the e-waste processing plants have never faced a fair weather and were forced to down grade capacity (uncompetitive) or even close shop
- Practical analysis of the situation is necessary followed by careful planning of processing projects, it is a global business and should be planned accordingly – very tough

E-WASTE MANAGEMENT

(ELECTRONIC AND ELECTRICAL WASTE MANAGEMENT)

MANAGEMENT OF NON-INDUSTRIAL HAZARDOUS WASTE

- Here I basically mean the household hazardous waste and such waste generated in offices, markets and institutes
- The MSW 2016 rules has clearly defined and prescribed certain measures. However, this aspect does not appear to be adequate, e.g., disposal of sanitary pads, bandages and other home health care products
- The toughest part is the collection of this grade whereas most ULBs are unable to collect 2 fractions (wet and dry) in a regular and systematic manner
- In the context of COVID 19, especially, disposal of infected masks and other material during home quarantine is going to create a huge issue and is a ticking bomb for the waste workers and the environment in general

Thank You