ENVIRONMENT SECTOR IN INDIA -Challenges & Opportunities

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**Outline of the Presentation...** 

> Challenges in Environment Sector in India

> Opportunities in the Green Sector

**>** SME Sector some factual data

> Way forward

# Challenges

- Municipal Solid Waste
- Bio Medical Waste (BMW)
- Plastic waste
- Electronic waste
- Hazardous waste
- Construction and Demolition Waste
- Wastewater generation and treatment
- Air Pollution
- Water Stress

#### Municipal Solid Waste (MSW)

- 377 million urban people live in 7,935 towns and cities and generate 62 million tonnes of municipal solid waste per annum.
- Only 43 million tonnes (MT) of the waste is collected, 11.9 MT is treated and 31 MT is dumped in landfill sites as per the World Bank study.
- As per UNDP, upto 40% of food produced in India is wasted, around INR 50,000 crores worth of food produced is wasted every year.

#### Construction and Demolition (C&D) waste

- Construction industry India in generates about 10-12 million tons of waste annually.
- There is very little progress in the implementation of C&D waste Management & Handling Rules, 2016.

#### **Bio Medical Waste (BMW)**

- Gross generation of BMW in India is 484 TPD from 1, 68,869 health care facilities (HCF), of which about 447 tons is treated.
- In India there are 198 Common Bio-Medical Waste management Facilities (CBMWF) in operation and 28 are under • construction.
- 21,870 HCFs have their own treatment facilities and 1,31,387 HCF are using the CBMWFs (as per MoEF&CC)

#### **Electronic waste**

- In 2016, 44.7 million metric tons of e- There are about 36,165 number of waste was generated globally.
- There are about 140 recyclers and dismantlers in India with

Installed Capacity – 350,000 tpa Average capacity – 600-7000 tpa E-waste Generated – 800,000 mtpa

#### Plastic waste

- Every year, 500 billion plastic bags are used around the world, 13 million tonnes of plastic leak into the ocean, 100, 000 marine animals are killed by plastics, and 83 % of tap water are found to contain plastic particles (African Development Bank (AfDB),
- plastic consumption in India was 8 MT/annum, out of which about 5.7 MT of plastics is converted into waste annually. Per capita generation of plastic waste has been estimated at 5.7 kg/annum (CPCB, 2008)

#### Hazardous waste

- hazardous waste generating industries
- About 6.2 million metric tons of hazardous waste is generated annually
- Of which 0.4 million metric tons (6.45%) are disposed by incineration
- 2.7 million metric tons (43.55%) go for final disposal in secured land fill

#### Wastewater generation and treatment

- The total sewage generation in India is 61754 MLD, of which untreated is 38791 MLD.
- A total 193 common Effluent treatment facilities and 920 STPs are there in India , of which Telangana State has 18 STPs .
- Telangana is contributing 1671 MLD (3%) of the total Sewage generation in India and the treatment is limited to 685.5 MLD.
- About 38000 million liter per day of sewage is generated. Treatment capacity exists for only about 12000 million liter per day in metropolitan cities, class I and II towns.
- 15,644 millions liter per day of sewage is generated from 35 metropolitan cities (more than 10 Lac Population), and treatment capacity exists for only 8040 MLD (51%).
- Among the Metropolitan cities, Delhi has the maximum treatment capacity that is 2330 MLD (30% of the total treatment capacity of metropolitan cities)

Source: Order Of The National Green Tribunal Regarding Effluent Discharge Standards For Stps, 30/04/2019 Updated on 8th May, 2019.

# World country/region ranking

#### Sorted by estimated average PM2.5 concentration (µg/m³)

1	Bangladesh	97.1
2	Pakistan	74.3
3	India	72.5
4	Afghanistan	61.8
5	Bahrain	59.8
6	Mongolia	58.5
7	Kuwait	56.0
8	Nepal	54.2
9	United Arab Emirates	49.9
10	Nigeria	44.8
11	Indonesia	42.0
12	China Mainland	41.2
13	Uganda	40.8
14	Bosnia & Herzegovina	40.0
15	Macedonia	35.5
16	Uzbekistan	34.3
17	Vietnam	
18	Sri Lanka	32.0
19	Kosovo	30.4
20	Kazakhstan	29.8
21	Peru	28.0
22	Ethiopia	27.1
23	Thailand	26.4
24	Bulgaria	25.8
25	Iran	25.0

26	Chile	24.9
27	South Korea	24.0
28	Serbia	23.9
29	Poland	22.4
30	Croatia	22.2
31	Turkey	21.9
32	Macau	21.2
33	Mexico	20.3
34	Czech Republic	20.2
35	Hong Kong	20.2
36	Cambodia	20.1
37	Romania	18.6
38	srae	18.6
39	Taiwan	18.5
40	Slovakia	18.5
41	Cyprus	17.6
42	Lithuania	17.5
43	Hungary	16.8
44	Brazil	16.3
45	Austria	15.0
46	Italy	14.9
47	Singapore	14.8
48	Philippines	14.6
49	Ukraine	14.0
50	Colombia	13.9

51	Puerto Rico	13.7
52	Belgium	13.5
53	France	13.2
54	Germany	13.0
55	Japan	12.0
56	Netherlands	11.7
57	Switzerland	11.6
58	Russia	11.4
59	Luxembourg	11.2
60	Malta	11.0
61	United Kingdom	10.8
62	Spain	10.3
63	Ireland	9.5
64	Portugal	9.4
65	USA	9.0
66	Canada	7.9
67	New Zealand	7.7
68	Norway	7.6
69	Sweden	7.4
70	Estonia	7.2
71	Australia	6.8
72	Finland	6.6
73	Iceland	5.0

#### **Air Pollution Impacts on Health**

- 1.2 million deaths in the country can be attributed to air pollution as per Lancet Planetary Health, nation wide survey conducted last year.
- According to a Washington Post report (paywall) published last month, On average, people in India have their life expectancy cut short by 5.3 years due to air pollution
- Those in two districts east of Delhi—Hapur and Bulandshahr—have their life expectancy reduced by 12 years, which is the greatest reduction in life expectancy due to air pollution anywhere in the world.

A CONTRACTOR OF THE OWNER	Apr 2015-Oct 2015		Apr 2016-Oct 2016	
Cause of disease	No of Claims	Average claimed amount (₹)	No of Claims	Average claimed amount (र)
Air pollution	1,302	69,535	1,479	78,036
Drinking water	2,451	24,020	3,345	25,261
Indoor air pollution	847	34,312	818	33,826
Major environmental component	2,525	35,170	2,803	40,516
Sanitation	15	39,976	10	32,762
Water pollution	497	45,331	528	60,225
Total claims/average claim amount	7,637	41,391	8,983	45,104

Source: ICICI Lombard General Insurance

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#### HEALTH UNDER ATTACK

Air pollution: The fifth leading cause of death in India. It results in about 620,000 premature deaths triggered by stroke, chronic obstructive pulmonary disease (COPD), ischemic heart disease, lower respiratory infections and trachea, bronchus and lung cancer, among others.

# Water Resources Scenario - INDIA

2.45% of World's Land Area Total Precipitation (rainfall + snowfall) 4% of World's • 4000 BCM **Renewable Water** Resources Total water availability 17.5% of World's • 1869 BCM Population Water Availability – **Total utilizable water resources** 1545 1123 BCM (28%) cum/person/year Scarcity - 1000 • **Ground Water** Surface water 690 BCM 433 BCM **Current utilization Current utilization** undia WRIS of SW Of GW 450 BCM (65%) 231 BCM (58%) Presently meets the demand but is Inadequate for future demand



# **Key-Schemes from Gol**

# Credit Guarantee Fund Trust for Micro & Small Enterprises (CGTMSE).

• Objective: To make available collateral free credit facility to new and existing Micro & small businesses

## **Export Promotion of Capital Goods (EPCG).**

• Objective: To allow import of capital goods on zero duty subject to meeting export obligations.

#### Credit Linked Capital Subsidy Scheme (CLCSS).

• Objective: To facilitate technology up-gradation. To enable beneficiary enterprises to avail institutional credit towards the purchase of machinery and technologies

#### Lean Manufacturing\* (National Manufacturing Competitiveness Programme).

- Objective: To make accessible the use of various Lean Manufacturing techniques to SMEs and thus improve their manufacturing competitiveness.
- \*Minimization of waste within a manufacturing system without sacrificing productivity

#### Marketing Development Assistance (MDA) Scheme.

• Objective: To help & encourage SMEs to tap & develop overseas market.

# Make in India

**Make in India**, a type of Swadeshi movement covering 25 sectors of the economy, was launched by the Government of India on 25 September 2014 to encourage companies to manufacture their products in India and enthuse with dedicated investments into manufacturing.

## **Ease of Doing Business**

- Ranking: The Ease of Doing Business (EODB) index
- Getting Electricity: India's ranking on this parameter has improved from 99 in 2015 to 70 in 2016. The number of days taken to get a permanent electricity connection for a business is just 53 days, which is less than the average time taken in South East Asian and OECD

## Innovation and Make in India

- India ranked as the 57th most innovative nation in the world; Up 3 places from 2017.
- FDI Equity Inflows witnessed a growth of 63% while FDI Inflow hit the 55% mark (Over the corresponding period previous to it).
- For the first time, India crossed the USD 50 Billion mark in FY 2015 16 with USD 55.45 Billion in FDI, due to the investment friendly policies and opening up of FDI allowance in various sectors.
- The highest FDI inflow of USD 60.8 Billion in 2016 17, was also witnessed during this period.

# Achievements

- India's rank jumped by 23 positions from 2018 and is placed at 77 in World Bank's Ease of doing business
- Five times more growth in major ports' traffic between 2014-18, compared to 2010-14.
- Six-fold increase in Government spending on telecommunications infrastructure and services in the country from Rs 9,900 crores (US\$ 1.41 billion) during 2009-14 to Rs 60,000 crores (US\$ 8.55 billion) (actual + planned) during 2014-19..
- Highest ever revenue was generated by Indian IT firms at US\$ 167 billion in 2017-18.

# **FDI - Sectors**

- 49% FDI under automatic route permitted in Insurance and Pension sectors
- Foreign investment up to 49% in defence sector permitted under automatic route.
- The foreign investment in access of 49% has been allowed on case to case basis with Government approval in cases resulting in access to modern technology in the country or for other reasons to be recorded
- 100% FDI under Government route for retail trading, including through e-commerce, has been permitted in respect of food products manufactured and/or produced in India100%
- FDI allowed in Asset Reconstruction Companies under the automatic route 74%
- FDI under automatic route permitted in brownfield pharmaceuticals. FDI beyond 74% will be allowed through government approval route

# Way Forward.....

- The Indian facilities management market is expected to grow at 17 per cent CAGR between 2015 and 2020 and surpass the US\$19 billion mark supported by booming real estate, retail, and hospitality sectors.
- The implementation of the Goods and Services Tax (GST) has created a common national market and reduced the overall tax burden on goods.

MAKE IN INDIA: AUTOMOTIVE, ELECTRONICS SYSTEM DESIGN & MANUFACTURING, RENEWABLE ENERGY, ROADS & HIGHWAYS, PHARMACEUTICALS & FOOD PROCESSING

## SME and Food Waste Management Opportunities ; UK Case Study

- There is a robust business case for countries, cities, and companies to reduce food loss and waste. Consider the United Kingdom (UK).
- In 2007, the country launched a nationwide initiative to reduce household food waste.
- By 2012, it had achieved an astounding 21 percent reduction in household food waste relative to 2007 levels.
- The ratio of purely financial benefits to financial costs attributable to the UK initiative was more than 250:1 (250 to 1), a very substantial return on investment.
- In other words, every £1 invested in efforts to catalyze household food waste reduction resulted in savings of £250.

## **Food Processing Sector**

- The Food Processing Industry has emerged as one of the important segment in terms of its contribution to Indian economy, as it contributes 9 % and 11% of GDP in Manufacturing and Agriculture sector respectively.
- In this context, the establishment of food parks a unique opportunity for entrepreneurs, including foreign investors to enter in the Indian food processing sector thereby providing solutions to food waste management.

Way Forward	Sector	Focus points
	Agriculture	<ul> <li>promote drip irrigation</li> <li>ware housing</li> <li>crops such as Raagi, Millets and</li> <li>Lower water consuming crops</li> </ul>
	Industry	<ul> <li>strict norms on energy efficiency</li> <li>CETP and</li> <li>industrial waste disposal units</li> <li>innovations in treating industrial waste</li> </ul>
	Municipal solid waste	<ul> <li>need for waste to energy power units</li> <li>leachate treatment plants</li> <li>e-waste recycling units</li> <li>plastic recycling units</li> <li>food waste to energy</li> <li>food waste (swiggy units)</li> </ul>
	Energy	<ul> <li>renewable like Solar, wind, energy from people walking have steady potential</li> </ul>
	Transportation	<ul><li>Electrical/battery operated vehicles</li><li>Bio-fuels</li></ul>
	Wastewater	<ul><li>decentralised STPs</li><li>lake cleaning technologies</li></ul>

# Success stories of Waste Utilisation

- North Delhi Municipal Corporation launched India's largest wasteto-energy plant at Narela-Bawana, 2017. The project will use 2,000 metric tonnes of waste every day to generate 24 mega watt of energy.
- Municipal Corporation Jabalpur has installed 11.5MW Waste to Energy Power Plant by consuming 600TPD MSW which is collected from the Jabalpur city generating 11.5MW Power at Village Kathoda, Jabalpur, Madhya Pradesh



Okhla plant in Delhi

- Waste to Energy Power Plant installed at Okhla consuming 1300 tones of MSW, and is generating 16 MW
- Waste to Energy Power Plant installed at Gazipur, Delhi consuming 1000 tones of MSW, and is generating 12 MW
- HIMSW is constructing19.8 MW waste to Energy plant using Refuse Derived Fuel (RDF) at Jawaharnagar, Hyderabad
- HIMSW has a functional Bio-methanization plant at Jawaharnagar producing 300m<sup>3</sup> of biogas per day by utilising 5 tones of vegetable and food waste

# Thank You

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