Air Pollution Challenges of Micro, Small and Medium Enterprises (MSMEs): Technical and Management Solutions

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Technical Session Pollution control for MSMEs and Construction dust

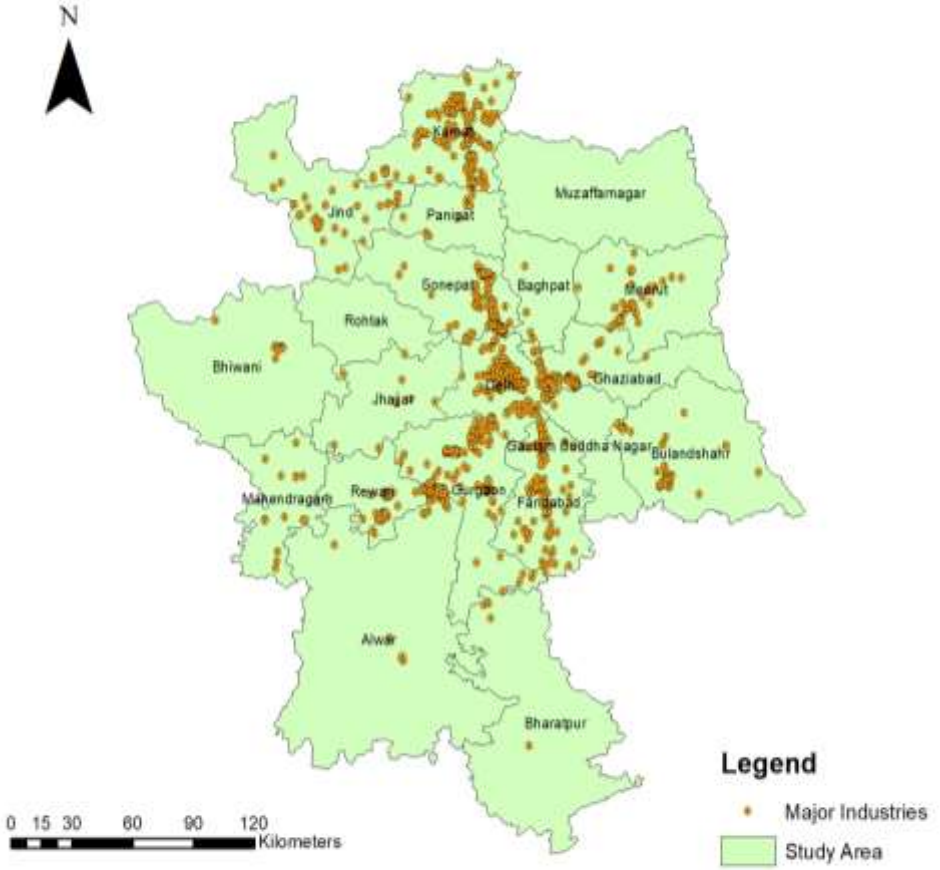
Mukesh Sharma; PhD,
Fellow Indian National Academy of Engineering
Member WHO Technical Advisory Group (2021-2023)
Professor of Civil Engineering
Indian Institute of Technology Kanpur, India

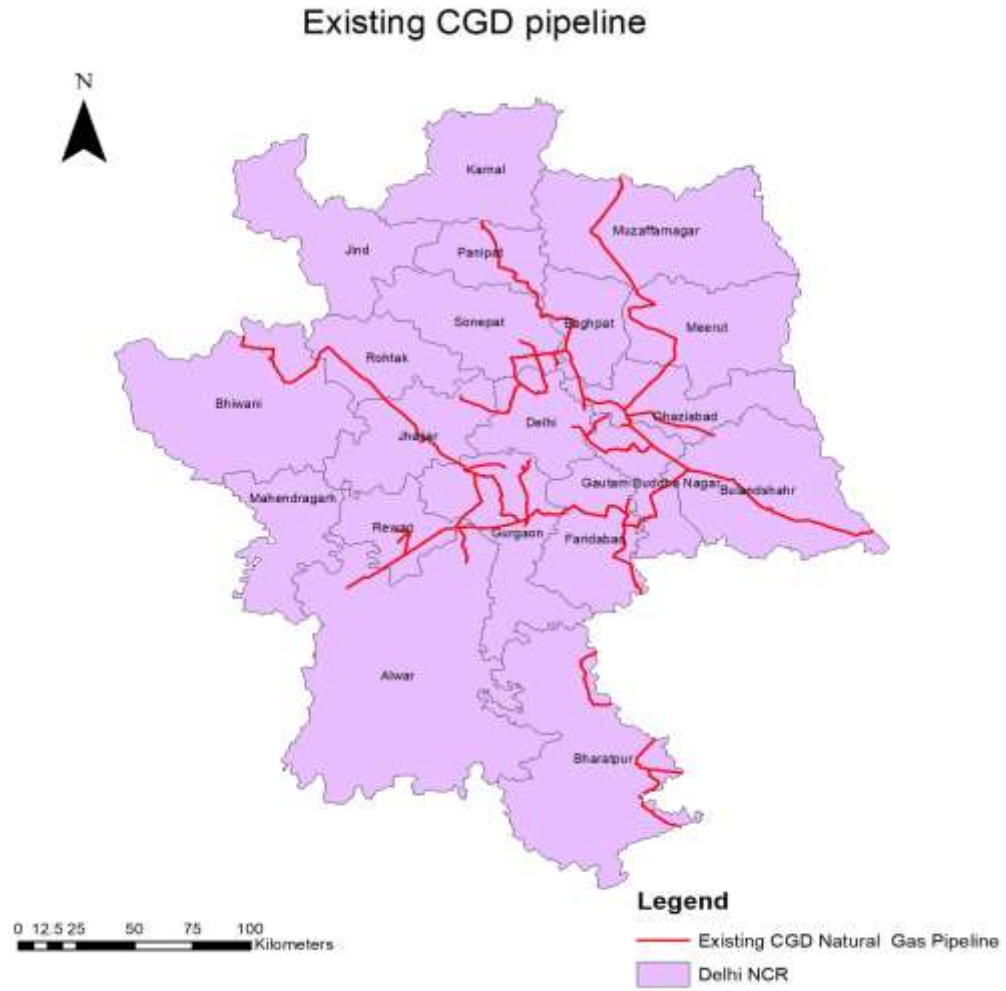
Background – Delhi Study

- **Thirteen air pollution hotspots : $PM_{2.5}$; 87 – 127 µg/m^3**
- **All hotspots have MSMEs and dense population density**
- **Old technologies, untrained manpower, casual attitude, poor housekeeping**
- **low heights of emission releases (less than 10 m),**
- **nonpoint fugitive emissions, not tractable**
- **Overall significant emission**
- **Disproportionate health impacts**

Sponsored by: Clean Air Asia, New Delhi

Good Point: Major industrial units and Existing PNG Pipeline





Total Registered MSMEs = 15870
No. of Industries using PNG = 1635
Total PNG Consumption = 169549 SCM

Air Quality Issues: Management and Technical

- Management: Inside and Outside








Inside...

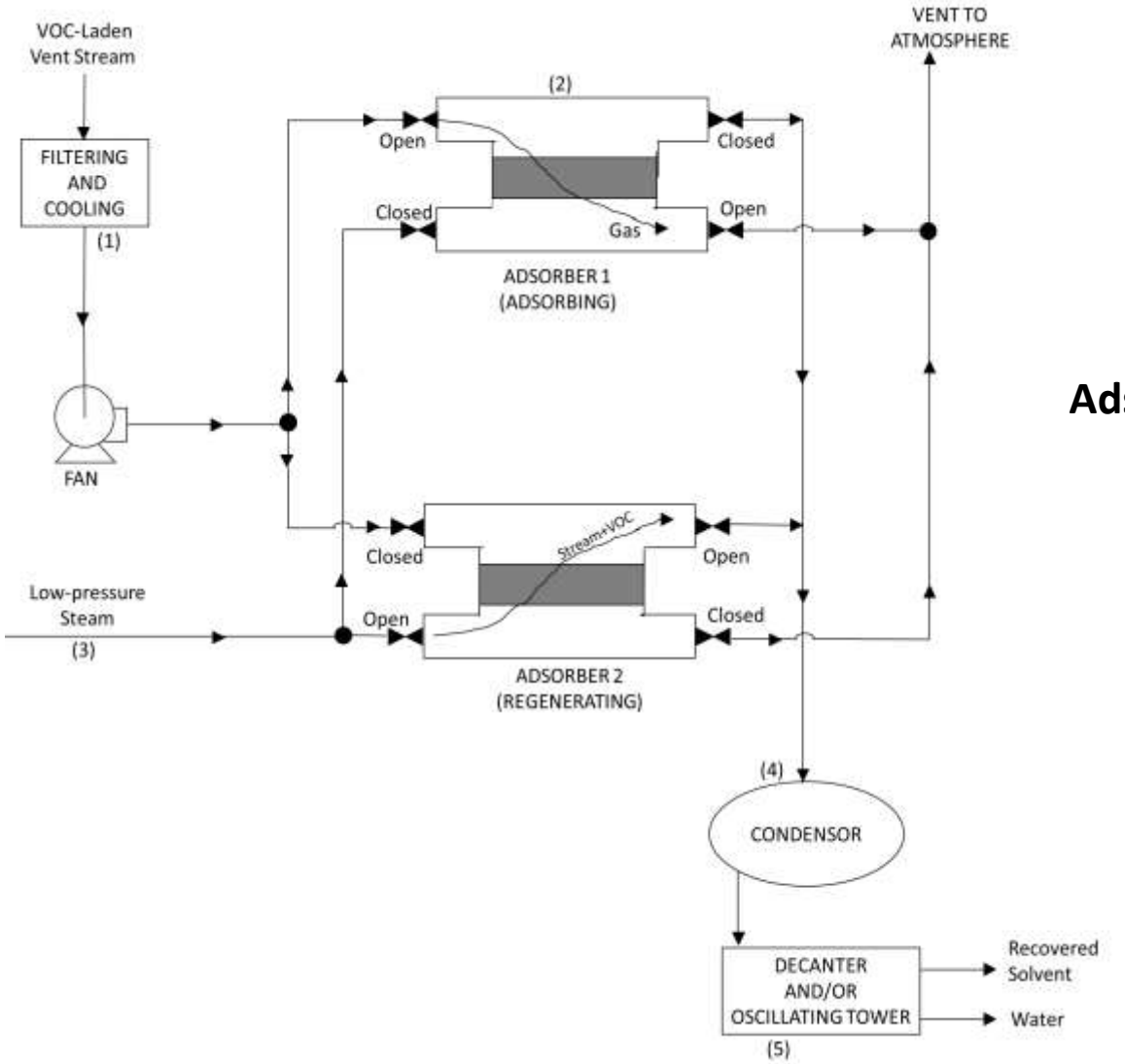
Document and Plan Action

Industrial Area	Sanitation/drains	Traffic Movement	Loading/Unloading (open)	Construction Debris on Road	MSW Management	Encroachment	Road Condition
packaging, garments, stainless steel, leather products, electronics and electrical fittings, pharmaceuticals (formulation), auto service centres and machining works	Poor/big	High/Medium	Yes/No	Yes/No	Inadequate	Yes/No	Poor/v poor

Urban Local bodies
Work out plan and insist on its implementation

Technical Solutions: Control of Emissions from Plastic Granules

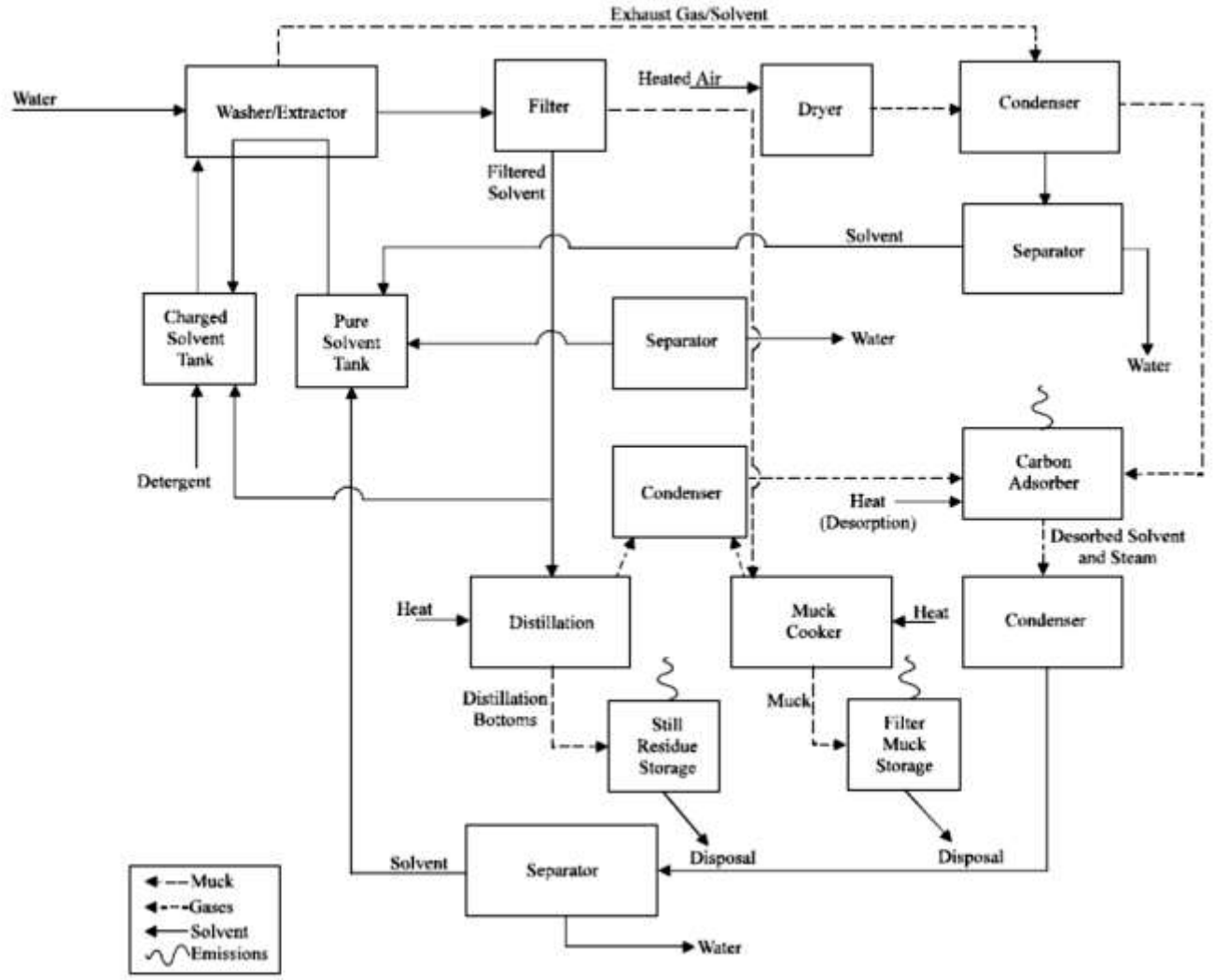
Adsorbers: Vapour-phase adsorption process use the property of large surface area of solids to adsorb and concentrate some pollutants (mostly VOCs) preferentially.



Adsorber operation, Regeneration and Recovery

Control of Emissions from Dry Cleaning Units

- **NMVOC emission from Delhi alone 63 kt/year mostly dry cleaning units and businesses**
- **Solvent recovery: returned, condensed and distilled, reused to clean further loads**



Control of Emissions from Metal Casting Industry

Delhi has over 250 small-scale metal (ferrous and non-ferrous) casting industries and is cumulatively a major industrial emission source despite uses of PNG

Sideways collection of fumes from melting and casting operation

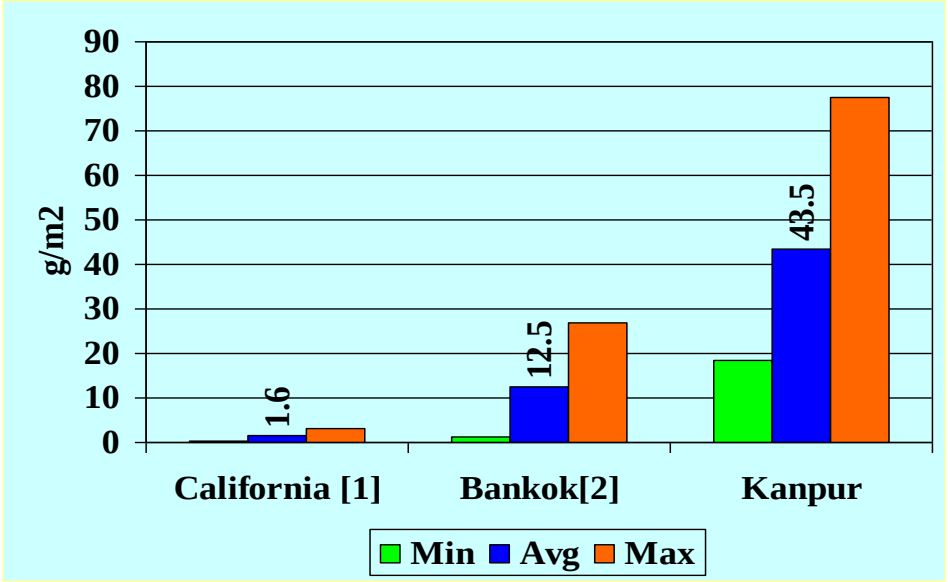
Control of Emissions from Loading and Unloading

1) Common problem in all industries,

2) covered with flexible plastic sheets and the fogging nozzles should come into operation from the sides and top to suppress the dust

Control of Emissions from Road Dust

Mechanical sweeping with water wash: Efficiency – 55% : 4 times a month will reduce 52% silt load
Vacuum-assisted Sweeping : Efficiency – 90% : 4 times a month will reduce 71% silt load
Maintenance of Roads Road Shoulders, footpaths, and parking lots



Silt Load

Policy Issues and Interventions for better air quality

i) Skill development

ii) Environmental technology resources

iii) Decarbonization and carbon credits

iv) Preventing waste burning

v) Used of bio-mass based fuel with control devices

vi) Small-scale units and small boilers

vii) Financial resources