

Aligarh, India

City Information

Population: The population in Aligarh city is 1,321,579

Area (km²): 63.4 sq. km

Climate: The average maximum and minimum temperatures are 31.3°C and 17.9°C respectively. July, August and September are the monsoon months for Aligarh. The average annual rainfall amount in the city is 754mm during the season.

Main Economic Activities: Lock industries and Educational Institutions

City website: <https://nنالigarh.in/ASCL/CitizenHome.html/>



Country Information

Population: 1.35 billion

Area (km²): 3.287 million km²

Economy and GNI/Capita - Lower middle income economy (\$ 1036 - \$4045)

Main Economic Activities

- **Agriculture** - About 14% share in GDP of the country and more than 50% of the total population dependent on agriculture sector.
- **Service sector**- 60% of the GDP contribution comes from the services sector. Banking, finance, business process outsourcing, and most importantly information technology services.

Government: Agencies responsible for guidance on waste legislation

- Ministry of Environment, Forest and Climate Change, Government of India
- Ministry of Housing and Urban Affairs
- Central Pollution Control Board (CPCB), www.cpcb.nic.in
- State Pollution Control Board, www.uppcb.com

MSW Sector Overview: City Level

The Aligarh Municipal Corporation has developed an extensive system for collection, segregation, storage, transportation and processing/disposal of municipal solid waste through various scientific and modern technologies. AMC comprises of 80 municipal wards within its territorial jurisdiction. Within the 80 wards, four zones, and eight sanitary circles have been setup. AMC through its door-to-door collection system is trying to cover all the 80 wards collecting segregated and mixed municipal solid waste, which is transported by different vehicles assigned for wet waste and dry waste fractions to the decentralized facilities within the City.

Classification of MSW

Some of the major sources of municipal solid waste are as follows:

- ❖ Domestic or Residential Waste
- ❖ Commercial Waste
- ❖ Institutional Waste
- ❖ Street Sweeping
- ❖ Industrial Wastes
- ❖ Sewage Wastes
- ❖ Plastics etc.



MSW Generation

At present Aligarh generates 545 tonnes per day (198,925 tonnes per year) of MSW from 80 wards and about 264,315 households. The per capita MSW generation is 164.25 Kg per year. This calculation is based on figure of 450 gm. Per capita solid waste generation as per MSW Rules 2016.

Collection Coverage and Type

The Aligarh Municipal Corporation collects around 435 metric tonnes of MSW per day from the city.

Waste Composition

The city generates organic waste, textile, rubber, paper, cardboard, inerts, etc. Organics are high in percentage. Below is the country data.

Waste Composition	Percentage (%)
Biodegradables	55
Paper	8
Plastic	9
Metal	1
Other	4
Inerts	20
Rags	3
Total	100

Source: A2Z Waste Management Aligarh Limited, Aligarh

Waste Management Practice

- ❖ **One Composting plant A2Z in Aligarh running since 2010** here about 25 TPD of waste is diverted towards composting.
- ❖ **A2Z Plant landfill** about 10% of daily collection is disposed of in this landfill.
- ❖ **Material Recovery Facility (MRF)** - A MRF is also running from January 2020. This MRF has a capacity of 13TPD.
- ❖ The **waste collection and transport fleet** in Aligarh runs on diesel. There are 107 motor vehicles (Tata Ace) currently available for municipal solid waste collection and transport. In addition, there are loaders and tractor lorry.

Formal Waste Sector

The Aligarh Municipal Corporation collects the waste with the help of A2Z waste management plant. The Aligarh Municipal Corporation's team collects the waste from door to door. The material recovery facility is being operated maintained by workers of the Aligarh Municipal Corporation.

Informal Waste Sector

Informal waste sector has a major role to play in recycling of waste. There is an established network of waste collectors, waste dealers, and recyclers. The waste collectors are under informal engagement. The Aligarh Municipal Corporation has in past conducted training programs for informal sectors, even issued ID cards, but they are directly not part of activities of the Aligarh Municipal Corporation. They recover recyclables from intermediate transfer stations at present.

Financing of MSW

Through user charges collected from households in the city, a part of the SWM charge is taken (Property tax also). Further Swachh Bharat Mission (SBM) and other schemes aid MSW activities.

Waste Management Challenges

- Waste characterisation at various levels of management is unknown.
- Collection and recycling rates of the informal recycling sector is not known.
- City wants to establish material recovery facilities but challenges persist in doing so. So far, the city has been able to identify 10 potential sites for MRF facilities.
- Need to improve the quality of compost. The current challenge is waste segregation at source. City is struggling in engaging citizens for waste segregation at source. Citizens are not fully aware for waste segregation and management.
- Space constraints for bulk waste generators (BWG) to manage their own waste. Although many BWGs are willing to manage their waste at source, there are constraints on technical and management front.

Technical Assistance

City would like to seek technical assistance for

- ❖ Reducing transportation costs.
- ❖ Automate processing facilities and use of IT-based solutions for streamlining waste collection and transportation.
- ❖ Mechanisms to make Aligarh litter free and reduce emissions from waste sector.
- ❖ Better manage organic waste and move more waste to circular economy loop.

MSW Sector Overview: Country Level

General description and overview of common practice

About 68 million tonnes of waste is generated annually, out of which 9% is plastic waste and 55% biodegradables waste. In addition, paper 8%, metal 1%, others 4%. 10% of daily collection is dumped in landfill sites.

Waste Generation (per capita/year) and Composition

- The range of generation is between 0.17 kg/capita/day – 0.6 kg/capita/day. The average being 0.45 kg/c/d
- Waste has a major portion of organic waste. Per national statistics, biodegradable waste is around 52%.

Collection Coverage

86% of waste gets collected and of this 27% gets treated as per central pollution control board (CPCB).

Number of Landfills/MSW Disposal rate (tones/year)

Waste management of organic fraction (composting, anaerobic digestion)

Anaerobic Digestion and composting is practiced in many cities. The solid waste management rules of 2016 (legislation) does not allow disposal of organic waste at disposal site. Country has wide range of treatment units ranging from micro composters to 300 TPD biomethanation plants in Pune.

Energy Recovery Rate

Energy in form of landfill gas and biogas is recovered from waste. Past researches and studies identified that there are 13 potential landfill sites for energy recovery but the fuel was expected of low calorific value. Since the 2016 Solid Waste Management Rules do not allow organics to be landfilled, any new LFG captive is not seen to be coming.

Country also has few wastes to energy (incineration) plants in cities that do not have landfill space.

City Level

Aimed at improving waste management in general

- ❖ Centralized composting plant of 220 TPD.
- ❖ Waste to energy plant will also be commissioned in few months, presently under development phase. This plant will have a capacity of 300 TPD
- ❖ 107 light motor collection waste vehicles (TATA ACE) are working in city for transporting the waste to dumping site.
- ❖ Door-to-door segregation practice in a few parts of the city
- ❖ Open dumpsite points will be removed completely.
- ❖ The Aligarh Municipal Corporation's team and different NGOs are involved in information education and capacity building (IECs) to make the citizens aware of systematic SWM.



Aimed at addressing climate change and reducing SLCPs through waste related activities

Aligarh Municipal Corporation is working on streamlining waste management activities and target waste management at source. AMC would however like to work in this direction. A waste to energy plant of 300 TPD capacity is also planned.

Country Level

Aimed at improving waste management in general

Swachh Bharat mission aims to provide 100% population coverage for waste management by 2026. The aim was to achieve 80% coverage by 2019 and thereafter 2% every year. There is also a Swachh Survekshan every quarter that helps ULBs scale up their management practices and document them for obtaining higher ranks.

Aimed at addressing climate change and reducing SLCPs through waste related activities

Country does have declared NDCs that covers the waste sector as well.

Legislation

City Level

Legislation governing MSW management

State SWM By Laws and Solid Waste Management Rules 2016(Uttar Pradesh).

Guidance for MSW management (after legislation, before inspection activities)

Guidance documents on MRF, landfill sitting criteria's are given by Swachh Bharat mission guidance (under MoHUA) and CPHEEO technical wing (MoHUA) and central pollution control board (CPCB) under MoEFCC.

Inspection activities/supervision and enforcement of legislation

Inspection done by Municipal Commissioner, Municipal Health Officer, Sanitary Inspector, and Uttar Pradesh Pollution Control Board.

National Level

Legislation governing MSW management

Solid waste Management Rules 2016

Guidance for MSW management (after legislation, before inspection activities)

Guidance documents on MRF, landfill sitting criteria's are given by Swachh Bharat mission guidance (under MoHUA) and CPHEEO technical wing (MoHUA) and central pollution control board (CPCB) under MoEFCC.

Inspection activities/supervision and enforcement of legislation

Central Pollution Control Boards and National Green Tribunal (NGT).

Current Projects or Activities Aimed at Reducing SLCP Emissions

At present in Aligarh, one waste to energy plant and a material recovery facility are under construction in different wards. The basic idea is to come-up with solutions that can prevent transportation of waste and related environmental and economic burdens. City has also undertaken garbage vulnerable point mapping.

Key Stakeholders

A to Z (<http://www.a2zgroup.co.in/>)

Additional Useful Information

- ❖ Initiative for reducing plastic in Aligarh
- ❖ Plastic waste management programme
- ❖ Door- to-door segregated collection is planned to start in all wards of Aligarh.

Contacts

Main Municipal Authority

Mr. Satya Prakash Patel (I.A.S.)

Title: Municipal Commissioner

Address: Sewa Bhawan, Civil Lines, Aligarh.

Phone: 7500778080

Email: mcnna@nنالigarh.in

Waste Initiative City Contact

Mr. Rohit Singh

Title: Assistant Municipal Commissioner

Address: Sewa Bhawan, Civil lines, Aligarh

Phone: 7905610037, 9105053404

Email: sna2nna@nنالigarh.in

Waste Initiative Country Contact

Mr. Kaushal Vashisht,

Ministry of Environment, Forest and Climate Change (MoEFCC)

Other Municipal Representative

Dr. Shiv Kumar

Title: Municipal Health Officer

Aligarh Municipal Corporation

Cell: +919411869456/ +91 8449525220

Email: mhonna@nنالigarh.in