

# Waste management: a study on Raipur waste management private limited

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## INTRODUCTION

The universal truth is that wastage of anything is harmful for the society. Still we see wastage of water, electricity etc in our daily life. The environment is surrounded with natural things but if any calamity or adversity occurs, it distracts the natural environment. The most affecting elements are the water, land, air and noise pollution. Due to this the ozone layer is declining day by day. But the most far reaching municipal solid waste which is very harmful for human beings and the other creatures.

Despite laws requiring proper waste disposal and the protection and preservation of bodies of water, people stubbornly dump their garbage into drainage canals, creeks, rivers, streets, and other public places.

Effective mechanisms to deal with unavoidable waste will remain necessary, but much greater attention must be directed to the introduction of preventative strategies aimed at waste minimisation. Ever increasing urban & industrial development in and around Raipur is becoming a serious threat to the natural resources upon which humankind depends for its survival.

The fragmented and uncoordinated approach to waste handling methods as well as the insufficient resources to implement, has contributed largely to the unacceptably high levels of pollution and waste in Raipur.

Monitoring and collection of information on waste generation is very critical for the implementation of waste handling methods. Moreover, the sharing of such information and creating awareness about the issues will enable all stakeholders, including communities, to gain a better understanding of waste management.

Integrated waste management is a holistic and integrated system and process of management, aimed at prevention of the environment and minimisation of waste at source, managing the impact of pollution and waste on the receiving environment and remediating damaged environments.

Raipur, the capital city of Chhattisgarh, is located near the centre of a large plain, referred as the "Rice Bowl of India" – where hundreds of varieties of rice are grown – and is also the biggest city of the region. With a population of over 1.2 million, the total quantum of municipal solid waste generated in Raipur is approx. 600 tons per day.

The Raipur Municipal Corporation works in accordance with

the citizens of Raipur so that all the general requirements can be resolved with ease. Starting from maintaining the infrastructure to look after the civic requirements, Raipur Municipal Corporation is taking all the necessary steps. Raipur Municipal Corporation is taking use of the latest and innovative means of technology to make all the processing of work online. The municipal commissioner of Raipur is even taking the initiative of informing the citizens of Raipur about the work related to Raipur Municipal Corporation that can now be performed online.

To protect environment and to effectively manage waste Raipur Municipal Corporation has entrusted the task of handling Integrated City Sanitation and Municipal Solid Waste Management to a Bangalore based private firm Kivar Environ Private Limited (A Kivar Group Enterprise). Raipur Waste Management Private Limited (RWMPL) the Special Purpose Vehicle set up for the implementation of Integrated City Sanitation and Municipal Solid Waste Management Project in Raipur. A truly integrated scheme and a first of its kind in the country, this Design, Build, Operated, Finance and Transfer project is based on Public Private Partnership (PPP) model.

Following the formal launch of Collection and Transportation operations, RWMPL commences its 30-year long service commitment to provide a wide gamut of services comprising city sanitation, primary and secondary collection of waste, engineering, construction, operation and maintenance of waste processing facility and scientifically engineered sanitary landfill facility. Along with this, RWMPL would also manage the post-closure monitoring of the landfill. The scope of services of RWMPL includes:

- City Sanitation comprising street sweeping, cleaning of drains, public toilets, ponds & Government office premises
- Primary and Secondary collection of waste including door-to-door collection
- Secondary transportation of waste to transfer stations & processing facility
- Comprehensive IEC (Information, Education & Communication) activities covering all strata of the society for effective environment management.
- EIA & Preliminary investigations at the processing and disposal facility site.
- Design, Engineering, Construction, Operation & Maintenance of waste processing facility with advanced technology.
- Design, Engineering, Construction, Operation & Maintenance of scientifically engineered sanitary landfill facility.
- Post closure monitoring of landfill.
- The collection, transportation, and disposal of garbage, sewage,

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and other waste products. Waste management encompasses management of all processes and resources for proper handling of waste materials, from maintenance of waste transport trucks and dumping facilities to compliance with health codes and environmental regulations. It is essential to know about the hierarch of waste management through diagram:

Solid waste management is the entire process of storage, collection, transportation, processing, and disposal of solid wastes by any person engaging in such process as a business, or by any state agency, city, authority, county or any combination thereof.

## History

Raipur district is important in historical and archeological point of view. This district was once part of Southern Kosal and considered to be under Mourya Kingdom. Raipur city had been the capital of the Haihaya Kings, controlling the traditional forts of the Chhattisgarh for a long time. The town of Raipur has been in existence since the 9th century, the old site and ruins of the fort can be seen in the southern part of the city. Satawahana Kings ruled this part till the 2nd-3rd century AD.

In the 4th Century AD the king Samudragupta had conquered this region and established his domination till Fifth-Sixth Century AD when this part had come under the rule of Sarabhपुरi Kings. For some period in Fifth-Sixth Century A.D., Nala kings dominated this area. Later on Somavanshi kings had taken the control over this region and ruled with Sirpur (Sripur-The city of Wealth) as their capital city. Mahashivgupt Balarjun was the mightiest emperor of this Dynasty. His mother, the widow Queen of Harshgupta of the Somavansh, Rani Vasata built the famous brick temple of Lakshman. The Kalchuri Kings of Tumman ruled this part for a long time making Ratanpur as capital. The old inscriptions of Ratanpur, Rajim and Khallari refer to the reign of kalchuri kings. It is believed that the King Ramachandra of this dynasty established the city of Raipur and subsequently made it the capital of his kingdom.

Another story about Raipur is that King Ramachandra's son Brahmedeo Rai had established Raipur. His capital was Khalwatika (Now Khallari). The newly constructed city was named after Brahmedeo Rai as 'Raipur'. It was during his time in 1402 A.D. that Hajiraj Naik the temple of Hatkeshwar Mahadev was constructed in the banks of river Kharun. The decline of this dynasty's rule came with the death of king Amarsingh Deo. This region had become the domain of Bhosle kings after the Amarsingh deo's death. With the death of Raghuji the III, the territory was assumed by the British Government from Bhonsla's of Nagpur and Chhattisgarh was declared a separate Commissionery with its Headquarters at Raipur in 1854. After independence Raipur district was included in Central Provinces and Berar.

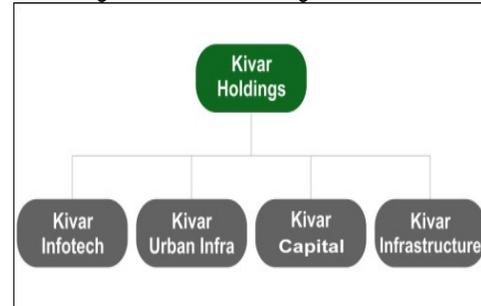
Solid-waste management, the collecting, treating, and disposing of solid material that is discarded because it has served its purpose or is no longer useful. Improper disposal of municipal solid waste can create unsanitary conditions, and these conditions in turn can lead to pollution of the environment and to outbreaks of vector-borne disease—that is, diseases spread by rodents and insects. The tasks of solid-waste management present complex technical challenges. They also pose a wide variety of administrative, economic, and social problems that must be managed and solved.

## VISION AND SERVICES OF THE COMPANY

To be the leader in environmental services in India by 2014.

To be the best employer in environmental services in India.

In less than five years, the company sees itself as the leader in environmental services in India, a position that we are confident of accomplishing. We also envision ourselves to be the best employer in this segment, because we firmly believe that it is a happy workforce that can take an organization to new heights.



## Services

The concession is for a period of 30 years for a wide gamut of services which comprise:

- City Sanitation comprising street sweeping, cleaning of drains, public toilets, ponds & Government office premises.
- Primary and Secondary collection of waste including door-to-door collection.
- Secondary transportation of waste to transfer stations & processing facility.
- Comprehensive IEC activities covering all strata of the society for effective environment management.
- EIA & Preliminary investigations at the processing and disposal facility site.
- Design, Engineering, Construction, and Operation & Maintenance of waste processing facility with advanced technology.
- Design, Engineering, Construction, and Operation & Maintenance of scientifically engineered sanitary landfill facility.
- Post closure monitoring of landfill.

Kivar Holdings Pvt. Ltd is an investment company established with the vision of utilizing and nurturing the challenges and opportunities in fast growing areas like environmental services, information technology, private equity and infrastructure. The company was founded by Subash Menon, a first-generation entrepreneur. His passion to succeed and set benchmarks for leadership has been the driving force behind Kivar Holdings.

Emerging markets and its potential are important aspects of economic development and globalization as these markets represent the growth in environmental services, information technology, and energy and infrastructure domains and will seed future innovation in industry. Kivar Group aims at being an important part of this growth phenomenon in the global arena, by establishing itself as a leader in these sectors.

Urbanization of India is occurring at a faster pace as compared to the past. A significant portion of the Gross Domestic Product (GDP) of the country is being contributed by urban India. This phenomenon is putting strain on the urban infrastructure of the country and has resulted in a tremendous opportunity for companies that provide services in the different parts of this sector.

Urban infrastructure services in India include:

- Solid Waste management
- Water & Wastewater management
- Renewable energy
- Public transport
- Roads
- Housing

Kivar Urban Infra Private Limited is an urban infrastructure service provider. A Kivar Group enterprise, its services conclude Integrated Solid Waste Management and Water & Wastewater Management.

KUIPL works in every link of the chain to ensure a sustainable and dependable end-to-end solution in our areas of operation. This comprehensive approach by KUIPL is the result of the extensive experience of a dedicated team of experts. These dedicated professionals are at the leading edge of technology and global best practices.

Kivar Urban Infra is constantly striving to improve, preserve and protect the environment and to ensure a cleaner and greener future by offering best in class services.

**Process**

**Process of waste management**



**Process of solid waste management**

Figure 3-1: The Solid Waste Management Hierarchy



**Project of the company**

**Contract for 600 TPD Integrated Waste Project in Raipur, India**



Bangalore, India based waste management company, Kivar Environ, which also specializes in managing waste water, has signed a Concession Agreement with Raipur Municipal Corporation for the implementation of Integrated City Sanitation and Municipal Solid Waste Management Project in Raipur.

The company said that the project is Design, Build, Operated, Finance and Transfer project based on Public Private Partnership(PPP)model.

Kivar Environ added that it has formed a special purpose vehicle named Raipur Waste Management Private Limited (RWMPL) to implement the Integrated City Sanitation and Municipal Solid Waste Management Project.

Under the contract RWMPL will deliver the project in two phases. In the first phase it will provide city sanitation such as street sweeping and cleaning of drains. It will also be responsible for primary and secondary collection of waste including door-to-door collection.

According the company it will also provide secondary transportation of waste to transfer stations & processing facility, as well as deliver comprehensive Information Education and Communication (IEC) activities covering all strata of the society for effective environment management. In the second phase the company said that it will be undertaking:

- EIA & preliminary investigations at the processing and disposal facility site
- Design, engineering, construction, operation & maintenance of a waste processing facility with advanced technology
- Design, engineering, construction, operation & maintenance of scientifically engineered sanitary landfill facility
- Post closure monitoring of landfill
- The company explained that its planned IEC drive will include door-to-door awareness raising and other educational efforts to promote the benefits of handling waste effectively.
- The project is expected to be capable of handling around 600 tones per day of municipal solid waste rising at 3% per annum.

**Legal aspect**

**Environment Protection Legislations in India**

With a view to protecting and improving the environment, different legislations have been made and different regulations, rules have been issued. The Government of India, through its Ministry of Environment and Forests is administering has enacted nationwide comprehensive laws. One of the major environmental enactments came just two years after the Stockholm Conference in 1974. The Water (Prevention and Control of Pollution) Act was passed for the purpose of prevention and control of water pollution and for

maintaining and restoring the wholesomeness of water. The Water Act represented India's first attempt to deal with an environmental issue from a legal perspective.

From this period onwards, the Central Government has been considered as highly environmentally active. In 1976, the Constitution of India was amended to insert a separate fundamental duties chapter. The 1980s witnessed the creation of many eco-specific organizations. In the year 1980, the Forest (Conservation) Act was passed for the conservation of forests and to check on further deforestation. The Air (Prevention and Control of Pollution) Act of 1981 was enacted by invoking the Central Government's power under Art253. The Air Act contained several distinguishing features. The preamble of the Air Act explicitly reveals that the Act represents an implementation of the decisions made at the Stockholm Conference. Also, a notification relating to Noise Pollution (Regulation & Control) Rules was made in the year 2000 with the objective of maintaining Ambient Air Quality Standards in respect of noise.

In the wake of the Bhopal gas tragedy, the Government of India enacted the Environment (Protection) Act, 1986. The laws that existed prior to the enactment of EPA essentially focused on specific pollution (such as air and water). The need for a single authority which could assume the lead role for environmental protection was answered through the enactment of EPA. It is in the form of an umbrella legislation designed to provide a framework for Central Government to coordinate the activities of various central and state authorities established under previous laws. It is also in the form of an enabling law, which delegates wide powers to the executive to enable bureaucrats to frame necessary rules and regulations.

Feedback



As the project is at initial stage, it has received positive response from the public of Raipur and it is fulfilling the key objectives i.e., of Clean Raipur, Green Raipur, handling own projects to keep environment clean. Services are running smoothly from company's side. The Raipur Nagar Nigam is supervising the project nicely. Services are fulfilling their work timely. It is a very good project also providing their services to the Bilai and Durg City of Chhattisgarh.

Raipur Waste Management Private Limited (RWMPL) the special purpose vehicle set up for implementation of Integrated City Sanitation and Municipal Solid Waste Management Project in the city of Raipur, today completed all the conditions under the Concession Agreement, by submitting the required Performance Bank Guarantee of Rs 2, 93, 67,024/- (Rupees Two Crore Ninety Three Lacs Sixty Seven Thousand and Twenty Four only). A truly integrated scheme, this Design, Build, Operated, Finance and Transfer project is based on Public Private Partnership (PPP) model.

RWMPL starts work on the Collection & Transportation of municipal solid waste within 3 (three) months from the date of approval of the C&T plan from the Independent Engineer.

CONCLUSION

The Company is fulfilling its purpose with their values which is given as:

VALUES AT KIVAR

For an organization to move on the progressive path, it is imperative that Customer Focus remains intact. With the customer as the center of our operations, we reinstate our commitment to constantly reinvent ourselves through innovative methods and processes with the ultimate aim of customer delight.

Though the company had designed a very nice and beautiful vehicle but still the citizens throwing garbage and waste here and there. It is duty of every citizen that they should keep their city clean and protect the environment for a healthy and happy life.

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