

# The waste management market of the Kingdom of Saudi Arabia

## a challenge, a promise



Short mission report  
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## General

The Kingdom of Saudi Arabia; a vast country of 2.2 mln km<sup>2</sup> and home to around 32 million inhabitants. 80% of them is living in the urbanised centers of the country and more than half of the population is living in the major cities of Riyadh, Jeddah, Makkah, Madina, Al-Taif, Dammam and Al-Hassa.

Since the 1930s, KSA has grown to become the current energy superpower. The oil-based economy has brought the country an enormous wealth. At the same time it makes the countries income strongly dependent on oil prices but still, last year, GDP reached \$21,120 per capita. The oil industry is headed by Aramco and it is followed by a base chemicals industry headed by Sabic. The country is planning to strengthen its non-oil economical activities. One of its major instruments is to use the country's monetary power to initiate and accelerate investments through its Private Investment Fund (PIF). This already resulted in eye-catching mega projects (f.e. the Riyadh metro-system) and the development of a number of new economic cities such as the King Abdullah economic city in Rabigh. The philosophy is one of trickling down economics, providing opportunities for new businesses.

The economy is underpinned by an expatriate workforce of over 10 mln employees recruited from India, the Philippines, Nepal, Pakistan and many other countries. The country has grown dependent on this influx of external workers and is trying to get away from it by promoting work to be done by Saudis and imposing fiscal thresholds for hiring new expatriates.

From October 24-27 we visited the country on the invitation of the Royal Dutch Embassy for a general survey, preparing a trade mission of Dutch waste management to KSA in the second half of November 2018.

## Waste

The country produces more than 16 mln tons of municipal waste per year with an average of around 1.5 kg/capita.day. Riyadh alone is producing 10.000 tons municipal waste per day and a similar volume of industrial waste. Still these volumes are in stark contrast with Riyadh's production of construction, demolition and excavation waste: 130.000 tons per day and most of that being dumped illegally!

Another remarkable figure comes from Makkah where the local dumpsite normally receives 4-6,000 tons per day but during the Hajj and Ramadan more than 10,000 tons. Construction and demolition waste amounts up to 20 mln tons per year.

The current budget for waste management in KSA is not documented but is said to be around 2.5 bln Rials per year. For ArRiyadh (the capital region) we heard figures of 500 mln Riyal per year (€120 mln). The system is paid for by the Ministry of Finance (MoF). Up until now no Saudi is paying for his waste. This is bound to change as the government is inclined to impose a waste management fee soon, as part of a comprehensive program to reduce top-down subsidies and

introduce fiscal instruments. Thoughts are on introducing a flat fee, to be paid through the electricity bill.

Still now, managing this waste is more or less unidirectional with >95% going directly from city cleaning and collection at source to the dumpsites. This value chain is dominated by the public authorities and mainly by the municipal Mayor's offices, with outsourcing of daily operations to private operators. Riyadh has sourced out its collection and street cleaning services through 10 contracts for 5 years with 5 companies. There are a number of exemptions to this institutional setting. The economic cities, the industrial areas of Aramco and Sabic and the areas reigned by the Royal Commission (such as Jubail) are called to be a "state within the state" with their own rules, cashflows and waste policies; some of them being far ahead of the national standard of dumping-only.

## Change

This basic situation is going to change dramatically and it is and will be catalysed by the reform plan Vision 2030 of Crown Prince Mohammad Bin Salman Bin Abdulaziz Al-Saud (generally abbreviated to "MBS") stating:

**"By preserving our environment and natural resources, we fulfil our Islamic, human and moral duties. Preservation is also our responsibility to future generations and essential to the quality of our daily lives. We will seek to safeguard our environment by increasing the efficiency of waste management, establishing comprehensive recycling projects, reducing all types of pollution and fighting desertification. We will also promote the optimal use of our water resources by reducing consumption and utilizing treated and renewable water. We will direct our efforts towards protecting and rehabilitating our beautiful beaches, natural reserves and islands, making them open to everyone. We will seek the participation of the private sector and government funds in these efforts."**

It is difficult to get hard and detailed information on KSA's present waste situation and future policies with regard to solid waste management. Change will come but the direction is still somehow uncertain and even the process of translating these promises into action is still unclear. Three years ago ArRiyadh's High Commission published an ambitious waste strategy but its implementation is still unclear.

Although everybody is convinced that big things are going to happen soon, nobody seems to know what they are going to be like. The responsibility for setting up a national plan has recently been transferred from the Ministry of Economy and Planning (MoEP) to the Ministry of Environment, Agriculture and Water (MoEAW) and stakeholders are uncertain about the effects of this shift.



It looks like the government is regrouping and is targeting at a centralised approach with a new regulatory framework, a new national SWM authority and the PIF preparing for investments and partnerships through the Saudi Investment Recycling Fund (SIRF) lead by Jeroen Vincent, the former Dutch CEO of Maltha Glass.



A dominant question is: Is this new Authority going to be an institution active in the field of planning, monitoring and permitting or will it also have more operational responsibilities on, for example, contracting and investing? A second question is: Will the country again walk the path of mega-projects, lead by the state or will there be a fertile soil for larger numbers of smaller recycling facilities with room for local private initiatives? As for Riyadh; the city is implementing a strategy (developed by Wood Group) to start a mega waste management site at 75 km from the urban areas. The waste will be transported there by train. The site is thought to become a fully integrated recovery and disposal facility but also here, no substantial masterplan could be produced.

One thing is sure: The cashflows will come and the centralised political system, with absolute power within the Monarchy, is a promise that processes, after starting up, may go fast. Dutch companies should be ready and prepared if they want a piece of the cake. KSA will translate its vast potential SWM market into numerous opportunities for foreign providers of technologies, services and equipment in this field. The number of relevant KSA-companies is still low (although a number of 650 registered collection companies are mentioned) and also international SWM players as Suez and Veolia are still almost absent. From this point of view KSA can be considered as a greenfield opportunity.

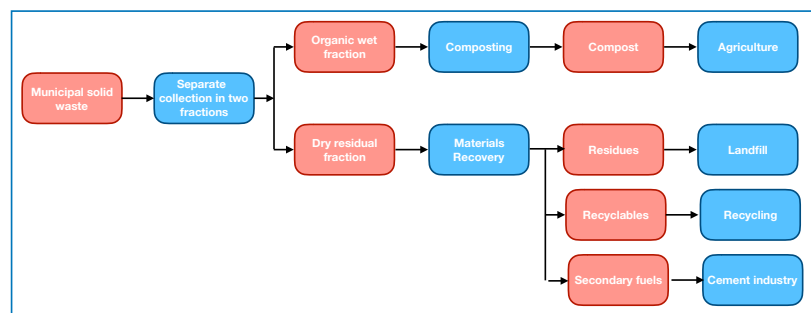
## Opportunities

What are these opportunities like? The summary below comprises the major findings of our survey:

- There is a substantial need for support by **consultancy and engineering** firms. Planning, decision support, evaluation, auditing etc. based on knowledge-by-experience in the field of SWM is almost absent. Local consultancy firms, as Entec in Jeddah, are longing to team up with European consultancy partners on this subject.
- For **waste collection** it seems clear that there is no room for providers of traditional collection vehicles. The future will be for more mechanised and automated pick up systems, tracking (to prevent illegal dumping) and planning systems and dedicated systems for separate collection. This shift is strengthened by KSA's attempt to reduce the number of foreign workers and to put Saudi employees back into the driver seat without having to do the dirty work.
- Especially in the field of introducing **separate collection**, as is implemented now in some districts of Riyadh with support of Roland Berger, there is a need for knowledge and support on implementation plans and raising public awareness. Riyadh starts with a

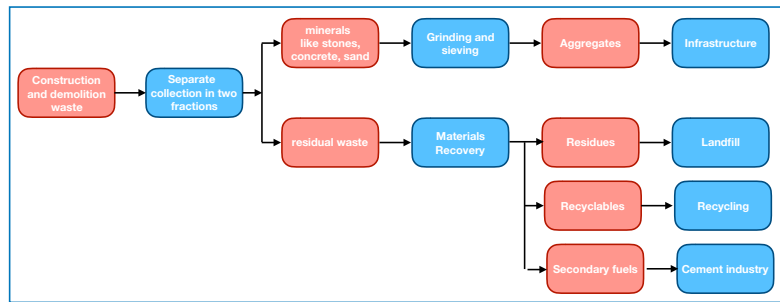
dry/wet kerbside separation in alternating collection days and with a time slot of two hours for kerbside placement. Similar systems are considered in other cities in Saudi Arabia.

- For **recycling and recovery** of MSW: The country is highly interested in clean-MRFs (material recovery facilities for separately collected recyclables), composting and RDF (refuse derived fuels) production facilities for the cement industry. It looks like these technologies will be the winners on the Saudi market now that recycling targets are set at at least 40% diversion from landfilling in 2025. A very explicit invitation was received from the Royal Commission to place bids on operating the entire chain of waste management (as PPP) for the city of Jubail (150.000 inhabitants) for a period of 15-20 years with a target on reducing landfill use by 90% before 2025.



- Especially **composting** looks promising because of the availability of almost 60% or organics in the waste and because the product is thought to have a seriously interested market in the Kingdom's agriculture. Systems need however to be adapted to the hot and sometimes dry climate. Indoor and tunnel-composting seem to hold the key to success.
- The outlook for **anaerobic digestion** is not that promising because of low energy prices.
- The same may hold for **mass incineration**, but it is no certain. The country may look very well fit for implementing waste incineration facilities because of the availability of capital, its preference for large projects and the availability of experience in running capital intensive industries and thermal processes. But also here the outlook of low energy revenues may refrain the authorities from introducing this technology.
- There is serious interest from **cement production** companies to play their part in the SWM market. KSA houses a dozen production facilities. City Cement Group in Shagra, is on the forefront of replacing fossil fuels by secondary ones (already more than 25%) such as car-tyres and spent carbon-black. A pilot plant on producing RDF from municipal waste has recently started up.
- The market for recycling technologies for **construction and demolition waste** is very promising for providers of crushers, sieving and separation equipment and MRFs. Interest may especially lie in the Eastern Province as this area is poor in aggregates for road construction.





- Many persons specifically mentioned the need to import **knowledge on operations** of both recycling and disposal processes.
- The treatment of **specific waste types** as sewage sludge seems to be a hot item. The same holds for hazardous waste, oil-water-sludge residues, hospital waste and WEEE. The treatment of these wastes was generally mentioned as being urgent but it is not quite clear who's in charge. The company Sepco in Jeddah is active in this field (and predominantly as KSA's major collector of hospital waste) and is looking for technology partners. The Dutch company Mourik has already been walking this path for quite some years and teamed up with Saudi based Anabeeb.
- Contrary to many other countries, systems for **extended producer responsibilities** (EPR systems) seem to draw no big interest in the KSA.
- For **landfills**: investments have already been started up some years ago but apparently KSA is still in need of improving its professionalism in this field. Leachate treatment and optimising gas extraction seem to be in focus.

