

WASTE-TO-ENERGY FACILITIES IN THE GCC

Waste-to-Energy (WtE) is one of the cleanest sources of energy and it is one of the most efficient ways to treat municipal solid waste. This technology has been recently introduced to the GCC region and it is aimed to reduce the dependence of the landfill sites, and to reduce the overall carbon footprint. Oil and Gas IQ Middle East has collated the latest updates on the various WtE plants in the region.



INTRODUCTION TO WASTE-TO-ENERGY

- In 2012, the gross urban waste generation quantity from Middle Eastern countries crossed 150 million metric tonnes per annum, GCC countries like Bahrain, Saudi Arabia, UAE, Qatar and Kuwait now rank in the top ten in terms of per capita solid waste generation worldwide. With an average population growth rate of 4.2 per cent per annum the rate of disposal is bound to increase and with limited landfills of an average of less than 20,000 square kilometres, waste management is a growing concern for the GCC.
- Waste-to-Energy (WtE) plants, prominent in Europe and United States, is one of the cleanest sources of energy and it is one of the most efficient ways to treat municipal solid waste. This technology has been recently introduced to the GCC region and it is aimed to reduce the dependence of the landfill sites, and to reduce the overall carbon footprint. These plants generate electricity and/or steam from waste by feeding mixed municipal waste into large furnaces dedicated solely to burn trash and produce power. Although, these types of plants, namely the mass burn WtE plants, are the most common, refuse-derived fuel (RDF) plants are also gaining popularity. RDF plants remove recyclable or unburnable materials, and process them separately.

WASTE-TO-ENERGY FACILITIES IN THE GCC

- Bee'ah in Sharjah
- TAQA & CWM in Abu Dhabi
- DSWMC in Qatar
- BWES in Bahrain
- PTB in Kuwait

BEE'AH IN SHARJAH

- Bee'ah is a leading environmental and waste management company that has mega projects across the Emirate.
- Bee'ah has strategically laid the road map to achieve its target goal of zero waste output plans for the Emirate of Sharjah. The Chairman of Bee'ah, H.E.Salim Al Owais pointed out that “ from a waste management point of view, diverting all waste from landfills and will help revolutionise waste management processes.”
- It particularly focuses on its zero-waste strategies along with reducing their carbon foot print.
- Bee'ah will be investing and updating the current strategy to focus on diverting waste from 50% diversion, while expecting solutions to treat the unrecyclable materials.
- Projects in their pipeline are with respect to innovative waste-to-energy solutions particularly incineration, gasification and anaerobic digestion.
- “Converting household waste into energy will help Sharjah become a more sustainable Emirate” highlights Mr. Khaled Al Huraime, the CEO of Bee'ah.

** Bee'ah is co-hosting the flagship conference and exhibition, Green Middle East along with IQPC Middle East in October, 2013. In this forum, Bee'ah will be announcing its future projects and discussing its green and waste-to-energy initiatives with the delegates.*

TAQA & CQM IN ABU DHABI

- Abu Dhabi national energy company PJSC (TAQA) and the Centre of Waste Management Abu Dhabi (CWM) are jointly developing one of the region's largest Waste-to-Energy plant to incorporate with the Abu Dhabi Vision 2030. Dr. Saif al Sayari, Executive Officer and Head of the Energy Solutions division explains "The development of sustainable energy and waste infrastructure technologies, as well as the diversion of waste from landfills, are goals identified in the Abu Dhabi Plan 2030."
- The 100MW Waste-to-Energy facility is planned to process up to a million tonnes of municipal solid waste per annum, thereby complying with a target of diverting around 80% of waste from landfill.
- The facility will begin operations by 2015/16.

DSWMC IN QATAR

- The Domestic Solid Waste Management Centre (DSWMC) has opened a 34MW Waste-to-Energy plant that converts domestic waste into electricity and supplies the converted electricity is transferred to the national power grid after it is used for in-house power.
- The facility processes around 2300 tonnes of domestic waste where they treat organic and green wastes to produce fertilisers and biogas. The remaining waste, depending on the nature, is processed or recycled for industrial uses.
- Located in Mesaieed, the facility fully began its operations in October 2011 and is the first functional, integrated Domestic Waste-to-Energy plan the GCC. “It is one of the largest specialised centres in processing domestic waste in the MENA region. It costs over QAR 3.9 billion including costs for construction and management by Keppal Seghers a Singapore-firm, which has a contract to operate the facility for 20 years”, commented Safer Mubarak Al Shafi, the Project Director.
- Prior to setting up the facility, all domestic waste was dumped into Qatar’s only landfill, which is also located in Mesaieed. Engineer Mansoor Saleh Bu Mattar, an official from the Ministry of Municipality and Urban Planning explained, “The landfill is the final destination of domestic wastes, around 800 tonnes per day, and bulky waste, around 10,000 tonnes per day, from private sectors.”
- The project costed up to QAR 3.9 Billion (US \$1.07 Billion)

BWES IN BAHRAIN

- Bahrain Waste-to-Energy Services (BWES) is developing an integrated waste-to-energy plant in association with the Ministry of Municipality and Urban Affairs and the Ministry of Finance.
- Located near the Al Darr Power Plant, Posford Haskoning Environment Gulf (PHE Gulf) is presently studying the plant's environmental aspects. The facility is planned mainly to extend the life of Bahrian's only landfill, Askar, where over 1,000,000 tonnes of waste is being dumped per year.
- The WtE plant is proposed to divert about 390,000 tonnes of municipal waste.

PTB IN KUWAIT

- Kuwait's Partnerships Technical Bureau (PTB) is planning a waste-to-energy project at Kabd, west of Kuwait City.
- The project is planned to treat and convert about 50 per cent of the country's residential municipality waste to generate power and include a sorting facility, a waste-to-energy plant and a sanitary landfill.
- The project is initiated because of the unsanitary state of the landfills in Kuwait. It is to be located about 25 kms away from Kuwait City.

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Forum for Environmental Change

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