The role of CDM in decarbonizing cities and its co-benefits

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World Waste Generation

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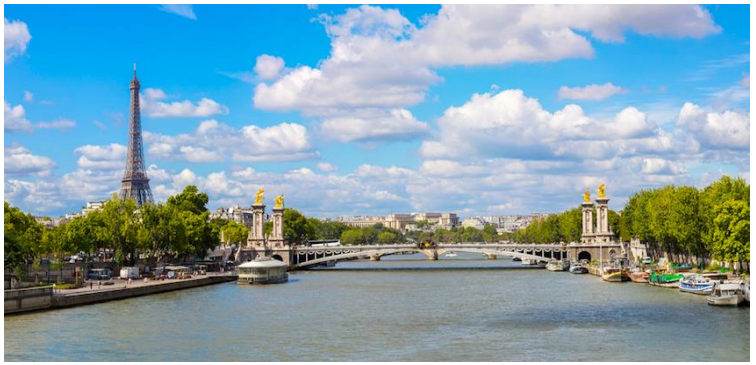
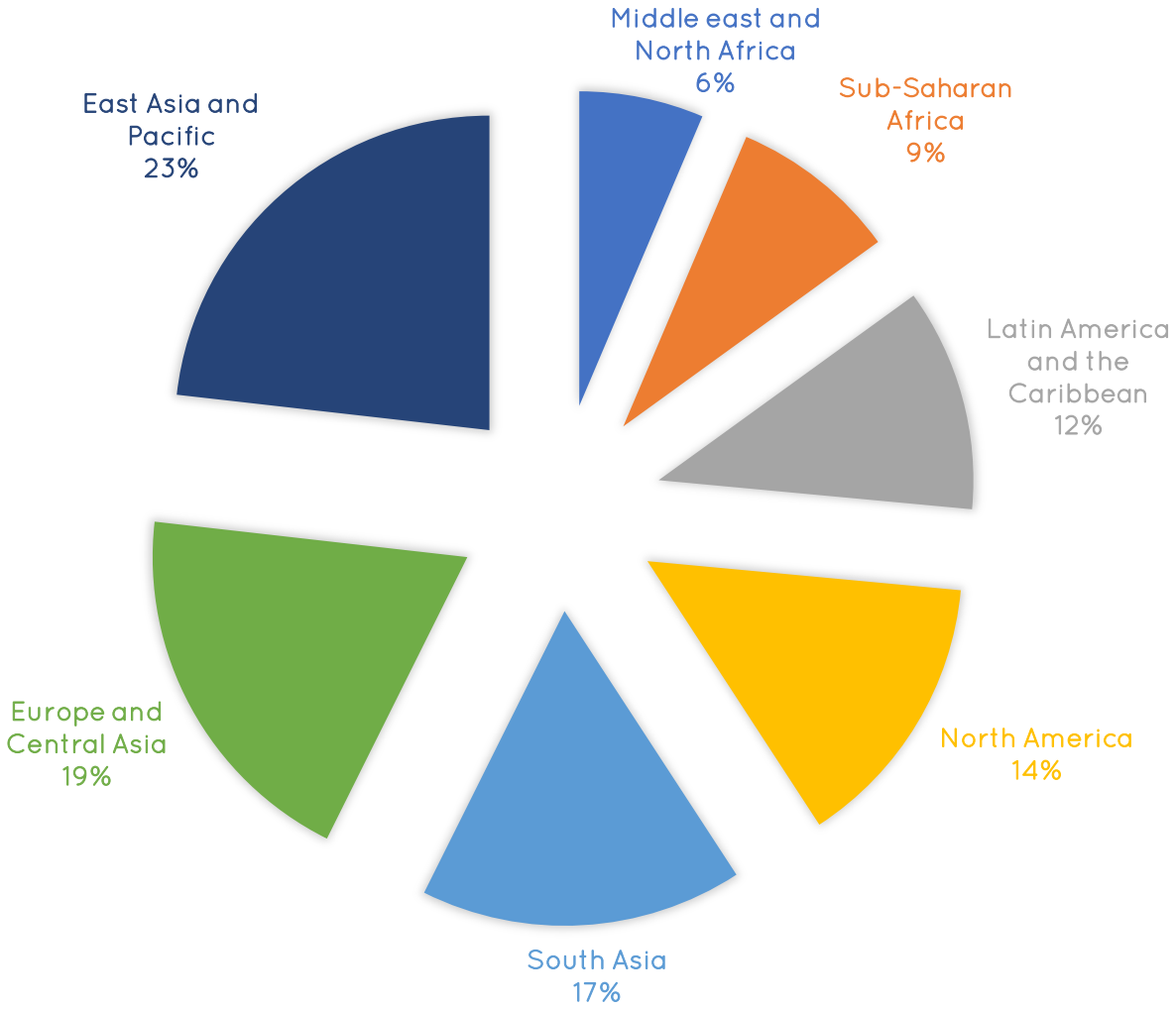
- The world currently generates 2.12 billion of tons of waste per year.
- This number is expected to increase up to 3.50 billion tons in 2050 (70 % increase).
- Average 0.4 to 1.1 kg/person/day

- The amount of waste currently being produced corresponds to the flow of river Seine during 1 ½ months.



Where does it come from?



- Low income countries represent 9% of the world´s population but generate 5% of the waste.

- In low income countries 90% of the waste is deposited in open dumps.

Where does it go to?

- Currently 37% of the waste is disposed in landfills (8% with LFG Recovery)
- 19% is recycled/composted
- 11% is incinerated.
- 33% is deposited in open dumps (0.7 billion tons of waste per year)

GHG Emissions from Waste

- GHG generation from waste represents 1.6 billion tons of CO_2 per year
- This number is expected to increase to 2.6 billion in 2050.
- GHG Emission from waste represent 5% of the world CO_2

Role of CDM

- The Clean Develop Mechanism has proven to be effective in the Waste Sector by providing the financial means and technology transfer to reduce GHG emissions from Waste.

- Currently there are 402 landfill gas projects registered under the CDM.

- These projects generated 117 Million of CERs up to today.

- In Brazil, all the landfills that have LFG collection and destruction are registered CDM projects.

Projects

Salvador da Bahia Landfill Gas Management Project

- The Salvador da Bahia Landfill Gas Project was one of the first CDM projects to be registered in the world, and the second one to issue CERs.

- The Salvador Landfill receives waste from the Metropolitan Area of Salvador da Bahia in Brazil.

- The landfill started operation in 1997 and currently receives 3 000 tons of waste per day.

- The CDM project was registered in 2005 as a landfill gas flaring project.

- From 2005 to 2011 the landfill gas generated by the anaerobical decomposition of the waste was flared in a set of 3 enclosed high temperature flares with a total capacity of 16 000 Nm^3/h.

Caieiras Landfill Emission Reduction Project

- The CDM Caieiras Landfill Emission Reduction Project is installed on the Caieiras landfill in São Paulo, Brazil.

- The Landfill started receiving waste in 2002, and currently receives approximately 10 000 tons of waste per day.

- In 2006 the LFG flaring CDM project started to operate with a set of 4 high temperature enclosed flares of 7 with a total capacity of 26 000 m^3/h.

Caieiras Landfill Emission Reduction Project

- In 2016 a 29,4 MW electricity generation plant using landfill gas as fuel was installed.

- Currently, the plant provides electricity to more than 300 000 habitants.

- The CDM project currently generates 1.4 Million tons of CERs per year.

CTRVV Landfill emission reduction project

- The CTRVV landfill started receiving waste from the municipality of Vila Velha in Espirito Santo, Brazil in 2002.
- The landfill currently receives 700 tons of waste per day.
- In 2008 a 3 000 m³/h high temperature landfill gas flare was installed.
- From May 2014 to August 2017 the project operated at very low levels (12%).
- Operation was resumed in 2017 and the project currently generates 100 000 CERs per year, having increased its performance 5 times.

CO-Benefits

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- **Environment:**
- Reducing odours
- **Social:**
- Creation of long time and short time jobs
- Project related knowledge dissemination

- **Economical:**
- Increased municipal revenues
- New economic investment as result of the project
- Initiation of new industrial/commercial activities
- Renewable electricity generation
- Introduction, development and diffusion of new local technology

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