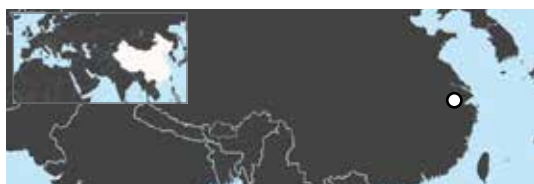




Suzhou energy from landfill gas, China

This project captures the methane emissions from a landfill and uses it for clean power generation, improves the lives of locals and contributes to sustainable development in China.

Location



The landfill gas capture project is located in a partly industrialized region of Jiangsu Province, close to the city of Suzhou, known as the “Venice of the East”. The size and situation of the city resemble that of many other Chinese cities, which makes this project exemplary with regards to sustainable waste management.

Project



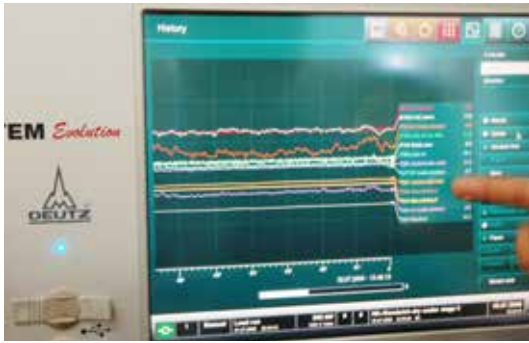
With China's growing cities and economies, not only supply of energy and goods is becoming a logistic challenge but also disposal and its implications. One example is the decomposition of organic materials in landfills, which generates large amounts of methane, a greenhouse gas 21 times stronger than CO₂. To keep it from damaging our climate and make use of its potential as a sustainable energy source, a project was set up to install modern technologies and train workers. Today, the landfill gas collection is managing both solid waste disposal and local energy supply in a sustainable way. At the same time, the project already benefits the locals and is engaged in further positive developments, e.g. by supporting education in the region.



Technically, the project is a combination project including landfill gas (LFG) collection, with wells and pipes reaching deep underground the now covered landfill. The methane is then fed into gas processing systems and finally burnt in four incineration units, each with an installed capacity of 1.25 MW. In the end, the generated electricity is fed into the grid to supply the inhabitants of Suzhou with clean, non-fossil energy.

The project owner built a recreational park next to the area, and an expansion is planned once the landfill works are completed. By this, an area that was avoided by locals due to its pungent odors, now becomes a place for outdoor leisure and recover for the local population.

Project achievements



Socio-economic impact:

- A mobile health unit offers free examination and treatment for local communities once a month.
- A scholarship program for the local business school received funding from the project owner to support higher education in the region.
- The project has created 20 regular employment positions in the plant operation; during the construction period, up to 54 people were employed. Workers receive regular training.
- The project owner offers jobs for the disabled. One example is a deaf worker who is responsible for the maintenance of all LFG wells.
- Trained local employees had the opportunity to exchange experiences with representatives from Australia and New Zealand, to learn from each other and support international technology exchange.
- With the development of eco-friendly recreational parks and new social projects (e.g. Suzhou City Environmental Education Base and Citizens' Low Carbon Experience Pavilion), the project owner is contributing to public education.
- The project owner provides regular funding of a Master course of Engineering with the School of Environmental Science and Engineering of Qinghua.

Environmental impact:

- In China, more than 80% of total electricity is generated from coal-based power plants. With China being so heavily dependent on coal for its energy demand, this project brings environmental benefits to the country's air, soil and water sources.
- By utilizing the modern technology of landfill gas recovery, the proposed project is contributing to the promotion of advanced green technologies in the country's city management.
- The safety situation of the landfill site has been improved as the combustible landfill gas now is properly collected and utilized.
- The project brought significant improvement to better air quality in the region. Not only strong odours from the once open landfill are today avoided but also the emission of hydrogen sulfide (H₂S), Ammonia (NH₃), and other harmful gases.
- The project owner built a recreational park next to the former open landfill as a place for leisure activities. As soon as the landfill is fully covered, the park will be expanded to demonstrate the impressive transformation "from dump to source of green energy".

Checklist Project 300 259



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