



# **BANGLADESH: ENERGY EFFICIENCY IN MODERN BRICK MANUFACTURING**

**CASE STUDY/INSIGHT**

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Brick manufacturing is one of the biggest industry in Bangladesh with almost 7,000 kilns offering livelihood for around one million people. Most of the kilns are of old and dated traditional designs. The demand for bricks is also increasing year by year with increased economic development in the country. But the smoke released during the traditional brick kiln operation increases the air pollution in the nearby cities and towns.

The major fuel used in traditional brick manufacturing is biomass and coal. These fuels are inefficiently used. Burning both these fuels result in a large amount of CO<sub>2</sub> and particulate matter (PM) emissions. This also proves to be an unhealthy work environment for the labours working in the brick kilns.

Another problem in the traditional brick kiln is that brick manufacturing can be carried out only during the summer season. The kilns will be closed during the rainy season. Thus, the labourers working in traditional brick kilns have an only temporary job and they have to find some other means of income. These conditions have led to the poorly skilled workforce available for the brick industry.

To address these issues, the project studied different brick kiln models. Taking into account several criteria, the modern and energy-efficient Hybrid Hoffman Brick (HHK) technology was selected and promoted by the project

Around 12 number of HHK brick kiln installations was implemented under this project. The capacity of each brick kiln ranged from 50,000 to 100,000 bricks per day. The project owners were given technical assistance as well as financial assistance during implementation. These modern brick kilns reduced the coal consumption per manufactured brick by around 50% and bricks were also of high-quality strength. Each kiln provided sustained job opportunities for about 100 to 200 families.

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The project also focussed on the improved lifestyle and socio-economic condition of its workforce. The labours were provided with safe working conditions with less smoke in the workplace and trained on safe operating procedures with protective devices. They were also provided with regular health check-ups and access to hospital services near the brick kiln.

Overall, the new and modern brick kiln operation was a huge success and many more brick kiln owners started replicating these brick kiln models in the country. The project also helped the Government of Bangladesh in reducing air pollution in the cities and towns and provide a clean environment for its citizens. The countrywide project on installations of modern energy efficiency brick kilns received international climate fund support from several international development organizations such as the World Bank, the ADB, etc.

This is a climate change project designed to reduce the global carbon footprint. The brick kilns installed under the project reduced a significant amount of carbon emissions every year. The project also received various international awards and recognitions.

