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COGENERATION AFRICA

CASE STUDY/INSIGHT

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The biggest challenge in the development of Africa is the consistent power supply at reasonable price for industrial, commercial, institutional and residential customers. Cogeneration is the most economical option for producing electricity and steam in sugar, palm oil, wood/timber, pulp & paper, cocoa, rice and other agro/food industries.

Most of the industries depend on diesel generators for electricity supply. The price of diesel across several parts of Africa is much higher than that of Asia. In several places, we came across diesel prices which were almost double when compared to that of Asian price level. Within the same country, we have noticed 50-100% variation in diesel price.

The industries that require power and steam often use diesel generators and produce steam using inefficient biomass boilers. Very limited number of industries use biomass cogeneration plants to produce steam and electricity. Even these cogeneration plants are very old and operate at very low efficiency.

In the next 5 to 10 years, the potential for cogeneration in African countries is very high as the biomass waste availability is expected to increase by around five times or more due to the increased cultivation in agricultural/food crops and increased productivity of existing plantations.

There is a vast potential in Africa to implement modern cogeneration plants as most of the biomass wastes are either dumped or burnt. If the cogeneration plants are designed to supply electricity to nearby industries/grid, then the revenue generation can be increased considerably.

Sugar and palm oil industries have the highest potential to implement these projects and they can learn from the experiences of Asian countries for implementation.

The plants can be designed with multi-fuel boilers so that, several biomass fuels can be used in the boiler at the same time. In addition, these plants can use high pressure, efficient boilers and turbo-generators.

As the expected project return is very high, the financing is not a big issue for good projects. Also there are many project developers who are willing to develop and finance projects. The investment cost of these cogeneration plants depend on several aspects such as fuel, location, local situations, country, industry, etc. In Asia, investment cost of these power plants range from 1 to 2 Million USD per MW and it is higher in Africa due to various reasons.

If the preparatory works are done properly, then the implementation time of the cogeneration plants range from 18 to 24 months. We have experience in the development of cogeneration plants of sizes ranging from 2 to 41 MW. In Africa, we have worked in the project development of more than 20 biomass projects.