

Contents

6. Project Alternatives	6-2
6.1 Location alternatives.....	6-2
6.2 Process/activity/operation alternatives	6-3
6.3 Scheduling alternatives	6-3
6.4 Demand alternatives	6-3
6.5 No-go option	6-3

6. Project Alternatives

Legal Notice 101: Environment Impact Assessment and Audit Regulations, 2003 states that an outline of the main alternatives studied by the Proponent and an indication of the main reasons for the Proponent's choice is required in an Environment Impact Assessment. Furthermore where alternatives are available which may still allow the objectives of the project to be met, the existing environment should also be detailed.

Subsequently alternatives for the proposed project have been evaluated from the following perspectives:

- Location alternatives – what is the best site for a proposed development and any infrastructure associated with it?
- Process/activity/operation alternatives – are there other means to achieve the same objective?
- Scheduling alternatives – are there potential time constraints and ongoing activities?
- No-go option – what are the implications of not proceeding with the project?

6.1 Location alternatives

The proposed power plant is part of the Ministry of Energy's Least Cost Power Development Plan (LCPDP) for the period 2010 – 2030. KP&LC has been given the approval to purchase 240MW of electric power from independent power producers (IPPs). The KP&LC tendered out the construction of 3 new medium speed diesel (MSD) power plants in late 2009 each having a capacity of 84MW.

Initially the KP&LC proposed all three power plants at one location within the Athi River EPZ however due to the resulting air emissions, decided to locate the 3 power plants at different geographical locations. Subsequently the KP&LC advertised in the local media for purchase of adequate land to build three new 84MW MSD power plants. From the bids received and using their internal site selection criteria, three sites were identified as follows:

- Athi River EPZ;
- A site near Thika town; and
- The proposed site.

Thereafter KP&LC tendered for the construction and operation of three power plants on a build, own, operate (BOO) basis. Gulf Power Ltd. won the tender to construct the 84MW MSD power plant on the proposed site situated along the Nairobi – Mombasa highway in Mavoko.

6.2 Process/activity/operation alternatives

The decision to establish the proposed power plant in the Mavoko area is influenced by the relative ease of connecting electric power to the national grid. There is a large KP&LC owned electrical sub-station at Embakasi and a potential large consumer of electricity that wants to set up a major industrial activity in Athi River. Athi River town is increasingly becoming a hub of commercial and industrial activity resulting from its close proximity to Nairobi and ease of availability of land for economic development. Locating a power plant in an industrial setting in close proximity to existing sub-stations is essential to the project and the country's electricity infrastructure in that electricity can be transmitted via the Embakasi sub-station to final consumers.

6.3 Scheduling alternatives

The project schedule for the proposed power plant is being driven by the growth in demand for electricity in Nairobi and its environs. It is also being driven by the unfavorable and unpredictable weather patterns in Kenya which do not allow the hydropower generation consistently. The KP&LC's objective is to ensure that it continues providing electricity to its existing customers and providing a targeted 200,000 new connections annually. It is therefore imperative that the proposed project be undertaken expeditiously in order for the KP&LC to meet its business and financial objectives.

6.4 Demand alternatives

Global concern about the negative impacts of climate change is promoting improved fuel efficiency. Research into and production of viable alternatives to electric power generation is a growing field and alternatives such as wind, solar and biomass are being increasingly considered. However these alternative sources of power generation are currently unavailable at a scale sufficient to meet demand.

6.5 No-go option

Not constructing the power plant would imply that the benefits including improved electricity availability to KP&LC existing and new customers and associated economic and social benefits would not accrue. Concurrently the adverse impacts associated with the project would not materialize.