



Environmental authorisation process for a national portfolio of Landfill Gas to electricity projects, South Africa

Project Summary:

The EIA process will be undertaken simultaneously with the technical prefeasibility phase of the projects commissioned separately by the client. Following this initial stage (anticipated to be 12 months), and subject to environmental authorisation, the projects will proceed to the project development phase entailing limited extraction and flaring for one year to evaluate actual gas generation and sustainable extraction rate. Thereafter the projects will proceed to electricity production phase entailing the installation of internal combustion engines and the provision of electricity to the national electricity grid.

Project Drivers:

South African Energy Context

Electricity supply in southern Africa is currently dominated by the State owned utility of South Africa, ESKOM. ESKOM generates around two thirds of the electricity produced in the whole of Africa and is extending its transmission grid north into neighbouring sub-Saharan countries. Strong economic growth, rapid industrialisation led, by early 2008, to demand for power exceeding supply. As a result, it has become increasingly urgent not only to facilitate diversification, but also to improve security of supply to ensure sustainable economic growth.

The proposed activities entail the generation and contribution of additional electricity to the national grid, and are therefore in line with these objectives. Furthermore, the project is in line with South Africa's renewable energy objectives set out by the National Energy Regulator of South Africa together with the Department of Minerals and Energy.

Global Warming and Climate Change

The proposed activities entail the reduction of landfill methane emissions, as well as offsetting emissions from coal fired generation plants operated by Eskom; and will therefore have a positive effect in terms of their contribution to global warming. This is in support of the objectives of the Kyoto protocol that was adopted in Kyoto, Japan in 1997, which aims to global GHG emissions over a five year period spanning from 2008-2012. Furthermore, the activities have the potential to be registered as Clean Development

Mechanism (CDM) projects, from which economic benefit will be derived from the sale of the Carbon Emission Reductions (CER's) to industrialized countries to meet a part of their emission reduction targets. There are currently a number of registered CDM's in South Africa, with several similar gas to electricity projects underway in KwaZulu-Natal (Mariannhill, La Mercy and Shongweni landfill sites).

Our Work:

WSP Environment and Energy (Pty) Ltd. (WSP) has been appointed by CEF to undertake the function of independent Environmental Assessment Practitioner to facilitate the Scoping and EIA procedure. As a result, our consultants are carrying out a range of assessments, including:

- Detailed review of legal requirements pertaining to the projects and highlighting of potential legal risks;
- Facilitation of the public participation process in order to gauge and gather public concern about the project;
- Specialist investigations that are likely to be required by the authorities in the EIA phase including:
- Baseline air quality reviews and assessment of gaseous emissions from the proposed LFG generator sets and associated infrastructure; and
- Assessment of potential noise emissions in the context of South African Ambient guidelines and in some cases the close proximity of adjacent communities.

The Outcome:

Facilitation of a successful environmental authorisation process will ensure that the projects are implemented in an expedient manner; such that they are able to contribute to the countries current energy requirements. The process will provide an opportunity to influence the projects design, such that takes cognisance of the receiving environment, thereby ensuring that the projects are implemented in an environmentally sound and sustainable manner.

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