

NON TECHNICAL SUMMARY

**ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT STUDY FOR THE
PROPOSED OLKARIA I ADDITIONAL UNIT 6 POWER PLANT AT OLKARIA
GEOTHERMAL FIELD IN NAIVASHA SUBCOUNTY.**

Environmental and Social Impact Assessment (ESIA) for the proposed Olkaria I additional unit 6 geothermal power plant was undertaken and the report submitted to National Environment Management Authority (NEMA) in March 2013. The proposed power plant will be located next to Olkaria I additional unit 4 and 5 power plant. The Government of Kenya has projected the national peak load to grow to about 2,500MWe by 2015 and 15,000Mwe by 2030. In this regard, the projected installed capacity should be 19,200MWe by 2030. The government through its least cost power development plan 2010-2030 has identified geothermal power production as its priority and has set a medium term target of generating 1,600MWe of geothermal energy by 2016 and eventually 5,000MWe by 2030. The proposed development of 70MWe Olkaria 1 additional unit 6 geothermal power plant is towards realization of the governments' medium term target of electricity generation from geothermal sources. Energy being a key enabler of economic development in line with Kenya's Vision 20103, the proposed project was justified.

The scope of the proposed project will comprise of earth works, electrical works, mechanical works, installation of structures and platforms, construction of buildings and services and steamfield works. The ESIA for the proposed project was undertaken using internal capacity. The proposed geothermal power plant falls under the projects listed under schedule II of the Environmental Management and Coordination Act (EMCA), 1999 for which ESIA is mandatory. The ESIA study was carried out in line with the administrative guidelines provided under Environmental (Impact Assessment and Audit) Regulations, 2003. The objective of ESIA was to identify potential positive and negative environmental impacts associated with the proposed project and make recommendations on how to enhance the positive impacts on one hand and to mitigate the negative environmental impacts on the other. The findings of the ESIA indicate that the project has the potential for both positive and negative environmental impacts.

Public consultation was a critical step for this ESIA study as provided for by EMCA,1999. Two public meetings, one at Kamere trading centre and the other one at the Olkaria Maasai cultural centre were held in order to listen, record and/or address the views, concerns and compliments of the local communities bordering Olkaria Geothermal Field. The meetings were chaired by the area the then District Officer (now referred to as the Assistant County Commissioner), Naivasha subcounty to promote transparency and fair representation. The public meetings were complimented with a key stakeholders meeting comprising of line ministries, Ngos, neighbouring flower farms and the sub-county administration. This meeting was chaired by the then District Commissioner of Naivasha subcounty (currently designated as Deputy County Commissioner).

The main significant environmental and/or social aspects identified by the ESIA study included; vegetation clearing especially along the steam pipeline route, dust, hydrogen sulphide emissions, solid waste generation, use of fresh water from Lake Naivasha, elevated and overhead works,

increased traffic, influx of workers at Olkaria (immigrants in search of jobs), disposal of geothermal fluids and soil erosion.

The proposed mitigation measures that were to be implemented in order to ensure environmentally sound sustainable development included:

- Wise use of fresh water abstracted from the lake;
- landscaping and rehabilitation of disturbed sites with native vegetation;
- minimization of project foot print by clearing minimal areas as possible for the steam gathering systems;
- Reinjection of geothermal fluids;
- use of permit to work system when executing works;
- measurement of hydrogen sulphide gas and noise levels;
- Water sprinkling of exposed earth surfaces to minimize dust emissions;
- proper enclosure of the diesel generators to minimize noise emissions;
- provision of solid waste container and offsite disposal mechanism;
- enforcement of personal protective gear;
- development of a traffic management plan and
- sensitization of workers on communicable diseases like HIV/AIDS.

An Environmental and Social Management Plan (ESMP) was developed in order to guide implementation of the proposed mitigation measures. The significant aspects were to be integrated with Environmental Management System (EMS), ISO 14001:2004 for which KenGen is certified. The ESIA study was reviewed, approved and license issued by NEMA on 27th June 2013. The proposed project will be subjected to an initial environmental audit during the operation phase in order to determine the efficacy and adequacy of the ESMP.