

TANZANIA ELECTRIC SUPPLY COMPANY LIMITED



**ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED NORTH-WEST
GRID POWER PROJECT OF TANZANIA PHASE II**

**(Construction of 400 kV Transmission Line from Nyakanazi to Mpanda via
Kigoma (530 km) and Substations in Nyakanazi, Kigoma and Mpanda)**

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SIGNED DECLARATION OF EXPERTS

I hereby certify that the particulars given to this report are correct and true to the best of my knowledge.

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EXECUTIVE SUMMARY

E-1: Background

Project Title: North-West Grid Power Project of Tanzania Phase II
(Construction of 400 kV Transmission Line from Nyakanazi to Mpanda via Kigoma (530 km) and Substations in Nyakanazi, Kigoma and Mpanda)

Project Proponent: TANZANIA ELECTRIC SUPPLY COMPANY LIMITED (TANESCO)
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E-2 Project Description

The lack of basic modern energy services in most rural areas has been perceived as a bottleneck in social and economic development. Only 7% of rural households have access to grid electricity. In the wake of this situation, the Ministry of Energy and Minerals through Tanzania Electric Supply Company Limited (TANESCO) has decided to connect several regions in Western and North Western Tanzania to the national grid by installation of 400 kV transmission line (TL) from Nyakanazi to Mbeya (1080 km) and associated substations at Nyakanazi, Kigoma, Mpanda, Sumbawanga and Mbeya. The compensation costs of the project is funded by the Government of United Republic of Tanzania while construction costs will be funded by donors and or financiers.

The project has been divided into three phases due to distance to be covered (1080 km) and the financial implication to such distance. Phase I is the construction of Mbeya – Sumbawanga 400 kV substations and transmission line (320 km) while Phase II and III are construction of Nyakanazi – Kigoma – Mpanda 400 kV substations and Transmission Line (530 km) and Sumbawanga – Mpanda 400 kV substations and transmission line (230 km) respectively.

The project will provide a ring feeder to the grid and possibly connect the grid to neighbouring countries for both export and import of electricity. Stable grid power supply can replace the existing diesel power stations and thus reducing the pollution from diesel oil burning and consequently making an improvement of environment.

Additionally, the project will promote a sustainable development of the rural areas in Western and Northern Tanzania. Rural electrification through grid power supply can promote productive activities in an environmentally sustainable way that generate more income for local population and thus reduce poverty.

The proposed project Phase II involves construction of about 530 km of 400 kV transmission line (TL) with a single circuit and associated substations at Nyakanazi in Kabale village, Kamara

village in Kigoma and Kampuni Street in Mpanda. The project passes through Biharamulo, Kakonko, Kibondo, Kasulu, Kigoma Rural, Uvinza and Mpanda districts.

E-3: Project Stakeholders and their Involvement in EIA process

Stakeholders' consultations were carried out from local to regional level through individual interviews and meetings. The team conducted consultative meetings with Kagera, Kigoma and Katavi Regional Commissioners' office, Local government officials including the District Commissioners, District Executive Directors, other District officials, ward leaders, village leaders and local communities from all villages where by the TL will pass. Consultations were also conducted at national level in institutions responsible for management of forest reserves and wild life management.

To facilitate an open and transparent process, interested and likely to be affected were identified, invited and later informed of the proposed project development and subsequent phases of project operations. At least 950 people were consulted during the study. Presentation of what is intended by the project; importance of the project to the nation as well as benefit to individuals was presented during the meetings, Positive and negative impacts of the project and their mitigation measures were also described in details. The participants were then given opportunity to ask questions, give comments, observations and opinions. This allowed the study team to obtain in-depth information on concepts, perceptions and ideas of the community members.

E-4: Results of Stakeholders Consultation

Public consultation was carried out to identify and respond to ongoing project issues of concern to Stakeholders. Extensive consultation was conducted at Villages, Wards and District levels to identify key issues of concern related to the development of the project and their opinion regarding the project activities in their area. At village level, villagers viewed the project as both positive in terms of employment creation, improvement of social services and infrastructure i.e. roads, health and education and HIV/AIDS. At District level, they viewed the project as positive in terms of increased revenue to the government, creation of employment in the area, and growth of secondary economic activities related to the project. On the overall, the project received positive support and enthusiasm from all key stakeholders consulted.

E-5: Impact Identification and Analysis

Impact identification was through site visiting, knowledge of activities involved, literature and experience of the experts in similar projects. The prediction of impacts is based on the knowledge of the project and causes and effects and their secondary and synergetic/ cumulative effects for the natural environment and local community. The assessment and valuation of impacts for different project components is characterized based on the following parameters: likelihood, extent of impact, nature of impact, magnitude and intensity, degree of significance, reversibility and time or duration of the impact.

The approach used to assess the significance of the potential impacts and later assess the effectiveness of the mitigation or enhancement measures is to apply significant ratings to each impact based on objective criteria, such as magnitude, extent and duration of that impact, to yield a final evaluation of the significance of impacts before and after mitigation.

E-6: Potential Environmental and Social impacts

The proposed corridor passes several agricultural fields, inhabited areas, grasslands and shrubs. It also passes few forest patches and savannah. Some clearance of vegetative cover will occur during the construction phase but this will quickly re-vegetated after the construction phase. Although there will be some losses of settlements and properties such as farms and houses in some places, the PAPs will be compensated by the project proponent and given ample time to look for settlements in other areas before establishing way leave. .

Some localized permanent physical modification along the natural terrain may also occur especially along the contours as a result of cut and fill operations. These will be highly localized along the TL and thus there will be limited impact on soil erosion and landslide during the construction phase

The use of fuel, oils and lubricants by the fuel-powered machinery poses a risk of spillages and or leakages to the environment when they are improperly managed. In addition to this, haphazard disposal of construction waste and operations waste (overburden, domestic waste (staff) and other spillages could contaminate local water bodies rendering them unusable or causing illness in the community.

During the operation phase of the project, there are possibility of transmission of HIV/AIDS and other communicable diseases due to influx of new people in the area who may contact disease or spread disease to the locals and other fellow workers. The project is arranged to ensure appropriate measures are in place such as educational leaflets, provision of awareness seminars and distribution of protective condoms.

The project will give rise to employment opportunities during the construction stage, which will result in skills development and enhanced income flow in the area. Also there will be a temporary enhancement of secondary employment from provision of services to the project workforce during the construction phase

E-7 Project Alternatives

Consideration of project alternatives is crucial in ensuring that the developer and decision-makers have a wider base from which they can choose the most appropriate option.

Alternatives routes were considered in selecting the best route and the best technical option for the transmission line based on construction costs and reduced anticipated environmental and social-economic impacts.

Several line alignment options were considered during the ESIA study to avoid or minimize impacts on the environment and communities. Therefore in area where environmental and socio economic impacts is high the TL has been shifted to area with low such impacts. These areas include angle tower J1 and J2 where the proposed TL crossed houses in Nyakanazi town, at angle tower J9 where the proposed transmission line crossed Kihomoka primary school in Kanyonza village, angle tower J19 and J20 where the proposed TL crossed near to prison building for Nyamisivyi Prison and at angle tower J17 where the proposed TL crossed near to Kanembwa National Service Camp.

Three alternative locations were considered for construction of Nyakanazi substation. The first option is to construct the substation in Biharamulo forest reserve near to junction road to Kigoma at Nyakanazi town. The second option is to construct the substation at the proposed angle tower J3 and the third option is to construct the substation at Nyakanazi village about 800 m from the road to Biharamulo town and about 5 km from Nyakanazi town.

Alternative one and two were not recommended to avoid or minimize environmental and social impacts that will be occurred as there out going line from these areas will led to vegetation loss in the forest reserve for the case of option one and high compensation costs associated with land requisition of houses and farms.

Location option three is recommended by the ESIA team for construction of the substation since it will have low impact to vegetation and low cost for land acquisition and compensation as compared to the option one and two. This option will also enable future expansion of the substation to accommodate other transmission line projects such as 220 kV Rusumo to Nyakanazi and 220 kV Geita to Nyakanazi.

E-8 Impact Mitigation and Enhancement Measures

TANESCO will ensure that any significant impacts identified is managed (mitigated) within its capability in collaboration with other relevant stakeholders such as Biharamulo, Kakonko, Kibondo, Kasulu, Kigoma Rural, Uvinza and Mpanda district councils, NEMC and Ministry of Energy and Minerals (MEM) and EWURA.

Implementation of proposed mitigation measures requires commitment of the project proponent and all those working on behalf of the proponent. Below are some of the proposed mitigation measures to be implemented by the project proponent

- Workers operating equipment that generate noise should be equipped with noise protection gear including ear muffs and plugs. Workers operating equipment generating noise levels greater than 80 dBA continuously for 8 hours or more should use earmuffs whereas those experiencing prolonged noise levels of 70 - 80 dBA should wear earplugs.
- Re-vegetation of bare earth areas with suitable local native vegetation as soon as practicable after major construction is completed to minimize erosion risk.
- Site waste management plan prepared by the contractor prior to commencement of construction activities. This should include designation of appropriate waste storage areas, collection and removal schedule, identification of approved disposal site, and a system for supervision and monitoring.
- All hazardous materials to be stored in appropriately bund containers and placed on concrete floor
- Provision of drip-pans for catching oil to vehicles being fueled or repaired, and stationery machinery. New and waste oil and fuel to be stored carefully and safely on-site until used, or removed from site to an appropriate facility for its safe disposal, or re-used in an environmentally safe and sound procedure.

E-9 Environmental and Social Monitoring Plan

Environmental Monitoring Plan is to be implemented as a complimentary to the Environmental Management Plan to monitor the impacts of the proposed project and the mitigation measures and to provide a permanent record of such monitoring. The monitoring program proposed for TANESCO operations, is based on the existing environmental impacts identified during the ESIA study.

The objectives of the Monitoring plan are to:

- provide a permanent record of compliance with ESMP against the present and future legislation;
- control risks and (significant) environmental impacts;
- control and improve the project on the basis of the operational information gathered;
- monitor continuous improvement of the environmental and social management system;
- provide a simple framework to improve the level of environmental management and compliance;
- co-ordinate and integrate the tasks of the project proponent and those of the governmental agencies involved in the project implementation;
- Integrate present and future environmental and social monitoring activities.

E-10 Summary, Conclusion and Recommendations

The proposed Transmission Line and associated Sub-station is a project of major importance for the infrastructure development and the socio-economic development of Tanzania in general.

Noise, air pollution and accidents are the major impacts associated with this project. However with mitigation measures in place and check (monitoring) measurement to detect and deviations from the allowable level will minimize the impacts of the project. Baseline measurements have been conducted during ESIA study in order to compare with future data.

It is recommended that the implementation of Environmental and Social Management Plan (ESMP) and Environmental and Social Monitoring plan are vital to the sustainability of the project. Both parties, project proponent, TANESCO and Contractor should ensure that they fulfil their responsibilities on the addressed in the ESMP and Environmental and Social Monitoring plan.